HB

466

FILE #1

HOUSE

COMMITTEE REPORT

(7)

Date referred: 2/10/86

FURTHER REFERRALS: FINANCE

DATE: _____

The JUDICIARY Committee has considered SSHB 466

"An Act relating to Alaskan resident employment preference; and providing for an effective date."

and recommends:

[ ] do pass

[ ] do not pass

[ ] do pass with attached amendment(s)

[ ] no recommendation

[ ] replace with CSSSHB 466 (JUD) [ ] same title [ ] new title

and recommends _____

[ ] further referral to the _____ Committee

and attaches: [ ] letter of intent
[ ] first fiscal note
[ ] new fiscal note
[ ] zero fiscal note

SIGNING DO PASS:

SIGNING OTHER RECOMMENDATIONS:

no rec

Chairman

STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

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May, 1986

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS date base CM 14. In order to save space copies of minutes have not been left in the files.

Jeanie Henry

House Judiciary	1/30/86	2:30 pm
" "	2/6/86	1:15 pm
" "	2/26/86	1:30 pm
" "	3/5/86	1:30 pm
" "	3/24/86	1:30 pm
" "	3/26/86	1:30 pm

Version #2
Cramer
3/25/86

Original sponsors: Boucher, Szymanski,
Gruenberg, et al

IN THE HOUSE BY THE JUDICIARY COMMITTEE

CS FOR SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 466 (Judiciary)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to Alaskan resident employment preference; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. PURPOSE. The legislature recognizes that the state has a significant unemployment problem. This Act is intended to better fulfill the state's duty of loyalty to its citizens, reduce unemployment among residents of the state, remedy social harms resulting from chronic unemployment, and assist economically and socially disadvantaged residents. If the courts find that a portion of AS 36.10 is unconstitutional, the public interest requires that the remaining portions be implemented as fully as possible.

* Sec. 2. AS 36.10.005 is amended by adding new subsections to read:

(c) The legislature further finds that the ratio of employees on a certified payroll who did not apply for or were refused a permanent fund dividend under AS 43.23 to employees who were found eligible to receive a dividend is a reasonable but not exclusive indicator of the ratio of nonresident to resident employees on a public works project.

(d) When determining the ratio of nonresident to resident employees working on a public works project, the commissioner may consider information gathered from on-site surveys of public works projects including individual interviews, questionnaires, examination of the state of registration of vehicles owned or operated by employees, and other information acquired from inspection of certified payrolls.

(e) The legislature finds that the following factors are

reasonable but not exclusive indicators of the ratio of nonresident to resident employees in the state:

(1) the ratio of applicants for unemployment insurance who list out-of-state residences to applicants who list residences in the state;

(2) the ratio of employees who are subject to unemployment insurance coverage and who did not apply for or were denied a permanent fund dividend to employees who were found eligible for a dividend.

(f) The legislature finds that

(1) the number of state residents who are unable to find work is considerably higher than is reflected by unemployment rates based on nationally accepted measures;

(2) many rural state residents who wish to work do not seek employment as frequently as necessary to meet federal definitions of unemployment because of continuing lack of employment opportunities in rural areas of the state.

* Sec. 3. AS 36.10.070 is repealed and reenacted to read:

Sec. 36.10.070. UNAVAILABILITY OF PREFERRED WORKERS. (a) An employer subject to hiring requirements under this chapter may request the Department of Labor to assist in locating qualified, eligible employees. After receiving a request for assistance, the department shall refer qualified, eligible, available residents to the employer to fill the employer's hiring needs. The employer shall cooperate with the department.

(b) If the department is unable to refer a sufficient number of qualified, eligible, available residents able to perform the work, the commissioner of labor may approve the hiring of residents who are not eligible for preference and nonresidents for the balance of the

request.

* Sec. 4. AS 36.10.075 is amended by adding a new subsection to read:

(b) The commissioner of labor shall adopt regulations to encourage and require the hiring of residents to the maximum extent permitted by law.

* Sec. 5. AS 36.10 is amended by adding new sections to read:

Sec. 36.10.130. RESIDENT HIRE REPORT. The attorney general and the commissioner of labor shall report annually to the legislature and the governor on the status of employment in the state, the effect of nonresident employment on the employment of residents in the state, and methods to increase resident hire. The report shall be submitted by January 31 of each year.

Sec. 36.10.140. ELIGIBILITY FOR PREFERENCE. (a) A person is eligible for an employment preference under this chapter if the person certifies eligibility as required by the Department of Labor, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered to find work with a public or private employment agency or a local hiring hall;

(3) is underemployed or marginally employed as defined by the department; or

(4) has completed a job-training program approved by the department and is either not employed or is engaged in employment that does not use the skills acquired in the job-training program.

(b) An employer subject to a resident hiring requirement under this chapter shall certify that persons employed as residents under the preference are eligible for the preference.

Sec. 36.10.150. DETERMINATION OF UNDEREMPLOYED AREA. (a)

Immediately following a determination by the commissioner of labor that an economic region of the state is an underemployed area or that the state as a whole is an underemployed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for work on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner of labor shall determine the amount of work that must be performed under this section by eligible qualified residents. In making this determination, the commissioner shall consider the nature of the work, the classification of workers, availability of eligible residents, and the willingness of eligible residents to perform the work.

(c) The commissioner shall determine that an economic region of the state or the state as a whole is an underemployed area if the commissioner finds that

(1) the rate of unemployment within the area is substantially higher than the national rate of unemployment;

(2) a substantial number of residents in the area desire work in occupations that would be employed on a public works project;

(3) the lack of employment opportunities in the area has contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of the unemployment of residents of the area.

Sec. 36.10.160. PREFERENCE FOR RESIDENTS OF ECONOMICALLY DISTRESSED AREAS. (a) Immediately following a determination by the commissioner that an economic region of the state is an economically distressed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under

AS 36.10.140 shall be given preference for at least 50 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the economically distressed area.

(b) The commissioner shall determine that an area is an economically distressed area if the commissioner finds that

(1) the per capita income of residents is less than 90 percent of the per capita income of the United States as a whole, or the unemployment rate in the area exceeds the national rate of unemployment by at least five percentage points;

(2) the lack of employment opportunities in the area has contributed to serious social or economic problems in the area; and

(3) employment of workers who are not residents is a peculiar source of unemployment of residents of the area.

Sec. 36.10.170. PREFERENCE FOR ECONOMICALLY DISADVANTAGED MINORITY RESIDENTS. (a) Immediately following a determination by the commissioner that the female or minority residents of an economic region are economically disadvantaged, and for the next two fiscal years after the determination, qualified female or minority residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 25 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner shall determine that the female or minority residents of an area are economically disadvantaged if the commissioner finds that

(1) the female or civilian minority population of the area exceeds the average female or civilian minority population for the state;

(2) either the percent of unemployment of female or civilian minority residents of the area is at least two times the percent

of unemployment of male or nonminority residents of the area or the female or civilian minority population of the area has suffered past economic discrimination;

(3) the economic disadvantage of female or civilian minority residents of the area has contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of unemployment of female or civilian minority residents of the area.

(c) In this section, a person is considered to be a member of a minority if the person is black but not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, as those terms are defined by the Equal Employment Opportunity Commission.

Sec. 36.10.180. PROJECTS SUBJECT TO PREFERENCE. (a) The preferences established in AS 36.10.150 - 36.10.170 apply to

(1) the performance of contracts let by a municipality for construction, repair, preliminary surveys, engineering studies, consulting, maintenance work, or any other retention of services necessary to complete a given project;

(2) a construction project that is partly or wholly funded by state money if the state or an agency of the state, a department, office, agency, state board, commission, regional school board with respect to an educational facility under AS 14.11.020, public corporation, or other organizational unit of or created under the executive, legislative or judicial branch of state government, including the University of Alaska and the Alaska Railroad Corporation, is a signatory to the construction contract;

(3) work performed on a public works project under a grant to a municipality under AS 37.05.315;

(4) work performed on a public works project under a grant to a named recipient under AS 37.05.316; and

(5) work performed on a public works project under a grant to an unincorporated community under AS 37.05.317.

(b) If the governor has declared an area to be an area impacted by an economic disaster under AS 44.33.285, then the preference for residents of the area established under AS 44.33.285 - 44.33.310 supercedes the preference under AS 36.10.150 and 36.10.160 for contracts awarded by the state.

(c) The commissioner shall define the boundaries of an economic region or an area within which a preference applies.

Sec. 36.10.190. REPORTING PROVISIONS. An employer obligated to meet resident hire requirements under this chapter shall comply with the reporting provisions that the commissioner of labor determines are reasonably necessary to carry out this chapter. Except for statistical data, all information regarding specific employees is confidential and may not be released by the Department of Labor.

Sec. 36.10.200. CRIMINAL PENALTIES. (a) A person who makes a false sworn statement in connection with a certification of eligibility for an employment preference under this chapter is subject to criminal prosecution for perjury as provided in AS 11.56.200.

(b) A person who makes an unsworn falsification, with the intent to mislead a public servant in the performance of a duty, in connection with a certification of eligibility for an employment preference under this chapter, is subject to criminal prosecution as provided in AS 11.56.210.

(c) In addition to criminal penalties imposed by state law, if a person is convicted of a crime in connection with a false statement made in a certification required under AS 36.10.140, and the

conviction is not reversed, that person shall forfeit all future rights to eligibility for an employment preference under this chapter.

Sec. 36.10.210. CIVIL PENALTIES. (a) In addition to any criminal penalties imposed, after a hearing the department may impose a civil penalty on a person who, in connection with certification of eligibility for an employment preference under this chapter,

(1) made a false sworn statement; or

(2) made an unsworn falsification with intent to mislead a public servant in the performance of a duty.

(b) The amount of the civil penalty under (a) of this section for a person who falsely certifies that the person is eligible for an employment preference under this chapter is not more than $400 for each false certification. The person also forfeits all future rights to eligibility for an employment preference under this chapter.

(c) The amount of the civil penalty under (a) of this section for an employer who falsely certifies that employees are residents eligible for a preference under this chapter is not more than $2,000 for each of the first five false certifications. The penalty for the sixth false certification made by an employer and for each false certification thereafter is at least $2,000 and not more than $4,000.

Sec. 36.10.900. EFFECT OF JUDICIAL DECISIONS. If a provision of this chapter, or the application of a provision to a person or circumstance, is held invalid, the remainder of this chapter and the application to other persons or circumstances shall not be affected by the holding. The remainder shall be enforced to the greatest extent constitutionally permissible under the constitutions of the United States and the State of Alaska.

Sec. 36.10.990. DEFINITION. In this chapter

(1) "available" means physically present at the place of

hire at the time requested by the employer;

(2) "qualified" means possesses the requisite education, training, skills, or experience to perform the work.

* Sec. 6. AS 36.95.010 is amended by adding a new paragraph to read:

(9) "resident" means a person who establishes residency under AS 01.10.055.

* Sec. 7. AS 37.05.315 is amended by adding a new subsection to read:

(e) The Department of Labor shall require a municipality awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

* Sec. 8. AS 37.05.316 is amended by adding a new subsection to read:

(b) The Department of Labor shall require a recipient awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

* Sec. 9. AS 37.05.317 is amended by adding a new subsection to read:

(b) The Department of Labor shall require the qualified incorporated entity awarded a grant or agents or contractors with whom the Department of Community and Regional Affairs contracts under (a) of this section to comply with the requirements of AS 36.10.150 - 36.10.-170 for employment generated by the grant or contract if the grant or contract is for a public works project.

* Sec. 10. The provisions of this Act do not apply to a contract entered into before the effective date of this Act unless the contract includes a provision requiring compliance with laws regarding the hiring of Alaska residents that take effect during the term of the contract.

* Sec. 11. AS 36.95.010(4) and (5) are repealed.

* Sec. 12. AS 36.10.010 is repealed.

* Sec. 13. Section 12 of this Act takes effect April 17, 1986, or immediately, in accordance with AS 01.10.070(c), whichever is later, if the final decision of the Alaska Supreme Court in Robison v. Francis, File No. S-493, Opinion No. 3011, January 17, 1986, is not submitted for review to the United States Supreme Court. If the decision is submitted for review but the United States Supreme Court declines to accept review, then sec. 12 of this Act takes effect on the date of the order of the United States Supreme Court declining to accept review. If the United States Supreme Court accepts review, then sec. 12 of this Act takes effect on the date of a final decision of the United States Supreme Court affirming the decision of the Alaska Supreme Court.

* Sec. 14. Sections 1 - 11 of this Act take effect immediately in accordance with AS 01.10.070(c).

Version #2
Cramer
3/19/86

Original sponsors: Boucher, Szymanski,
Gruenberg, et al

IN THE HOUSE BY THE JUDICIARY COMMITTEE

CS FOR SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 466 (Judiciary)

IN THF LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to Alaskan resident employment preference; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. PURPOSE. The legislature recognizes that the state has a significant unemployment problem. This Act is intended to better fulfill the state's duty of loyalty to its citizens, reduce unemployment among residents of the state, remedy social harms resulting from chronic unemployment, and assist economically and socially disadvantaged residents. If the courts find that a portion of AS 36.10 is unconstitutional, the public interest requires that the remaining portions be implemented as fully as possible.

* Sec. 2. AS 36.10.005 is amended by adding new subsections to read:

(c) The legislature further finds that the ratio of employees on a certified payroll who did not apply for or were refused a permanent fund dividend under AS 43.23 to employees who were found eligible to receive a dividend is a reasonable but not exclusive indicator of the ratio of nonresident to resident employees on a public works project.

(d) When determining the ratio of nonresident to resident employees working on a public works project, the commissioner may consider information gathered from on-site surveys of public works projects including individual interviews, questionnaires, examination of the state of registration of vehicles owned or operated by employees, and other information acquired from inspection of certified payrolls.

(e) The legislature finds that the following factors are

reasonable but not exclusive indicators of the ratio of nonresident to resident employees in the state:

(1) the ratio of applicants for unemployment insurance who list out-of-state residences to applicants who list residences in the state;

(2) the ratio of employees who are subject to unemployment insurance coverage and who did not apply for or were denied a permanent fund dividend to employees who were found eligible for a dividend.

(f) The legislature finds that

(1) the number of state residents who are unable to find work is considerably higher than is reflected by unemployment rates based on nationally accepted measures;

(2) many rural state residents who wish to work do not seek employment as frequently as necessary to meet federal definitions of unemployment because of continuing lack of employment opportunities in rural areas of the state.

* Sec. 3. AS 36.10.070 is repealed and reenacted to read:

Sec. 36.10.070. UNAVAILABILITY OF PREFERRED WORKERS. (a) An employer subject to hiring requirements under this chapter may request the Department of Labor to assist in locating qualified, eligible employees. After receiving a request for assistance, the department shall refer qualified, eligible, available residents to the employer to fill the employer's hiring needs. The employer shall cooperate with the department.

(b) If the department is unable to refer a sufficient number of qualified, eligible, available residents able to perform the work, the commissioner of labor may approve the hiring of residents who are not eligible for preference and nonresidents for the balance of the

request.

* Sec. 4. AS 36.10.075 is amended by adding a new subsection to read:

(b) The commissioner of labor shall adopt regulations to encourage and require the hiring of residents to the maximum extent permitted by law.

* Sec. 5. AS 36.10 is amended by adding new sections to read:

Sec. 36.10.130. RESIDENT HIRE REPORT. The attorney general and the commissioner of labor shall report biennially to the legislature and the governor on the status of employment in the state, the effect of nonresident employment on the employment of residents in the state, and methods to increase resident hire. The report shall be submitted by January 31 of the first session of a legislature.

Sec. 36.10.140. ELIGIBILITY FOR PREFERENCE. (a) A person is eligible for an employment preference under this chapter if the person certifies eligibility as required by the Department of Labor, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered to find work with a public or private employment agency or a local hiring hall;

(3) is underemployed or marginally employed as defined by the department; or

(4) has completed a job-training program approved by the department and is either not employed or is engaged in employment that does not use the skills acquired in the job-training program.

(b) An employer subject to a resident hiring requirement under this chapter shall certify that persons employed as residents under the preference are eligible for the preference.

Sec. 36.10.150. DETERMINATION OF UNDEREMPLOYED AREA. (a)

Immediately following a determination by the commissioner of labor that an economic region of the state is an underemployed area or that the state as a whole is an underemployed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for work on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner of labor shall determine the amount of work that must be performed under this section by eligible qualified residents. In making this determination, the commissioner shall consider the nature of the work, the classification of workers, availability of eligible residents, and the willingness of eligible residents to perform the work.

(c) The commissioner shall determine that an economic region of the state or the state as a whole is an underemployed area if the commissioner finds that

(1) the rate of unemployment within the area is substantially higher than the national rate of unemployment;

(2) a substantial number of residents in the area desire work in occupations that would be employed on a public works project;

(3) the lack of employment opportunities in the area has contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of the unemployment of residents of the area.

Sec. 36.10.160. PREFERENCE FOR RESIDENTS OF ECONOMICALLY DISTRESSED AREAS. (a) Immediately following a determination by the commissioner that an economic region of the state is an economically distressed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under

AS 36.10.140 shall be given preference for at least 50 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the economically distressed area. The preference applies to worker hours on a craft-by-craft basis.

(b) The commissioner shall determine that an area is an economically distressed area if the commissioner finds that

(1) the per capita income of residents is less than 90 percent of the per capita income of the United States as a whole, or the unemployment rate in the area exceeds the national rate of unemployment by at least five percentage points;

(2) the lack of employment opportunities in the area has contributed to serious social or economic problems in the area; and

(3) employment of workers who are not residents is a peculiar source of unemployment of residents of the area.

Sec. 36.10.170. PREFERENCE FOR ECONOMICALLY DISADVANTAGED MINORITY RESIDENTS. (a) Immediately following a determination by the commissioner that the minority residents of an economic region are economically disadvantaged, and for the next two fiscal years after the determination, qualified minority residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 25 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the area. The preference applies to worker hours on a craft-by-craft basis.

(b) The commissioner shall determine that minority residents of an area are economically disadvantaged if the commissioner finds that

(1) the civilian minority population of the area exceeds the average civilian minority population for the state;

(2) either the percent of unemployment of civilian minority residents of the area is at least two times the percent of

unemployment of nonminority residents of the area or the civilian minority population of the area has suffered past economic discrimination;

(3) the economic disadvantage of civilian minority residents of the area has contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of unemployment of civilian minority residents of the area.

(c) In this section, a person is considered to be a member of a minority if the person is black but not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, as those terms are defined by the Equal Employment Opportunity Commission.

Sec. 36.10.180. PROJECTS SUBJECT TO PREFERENCE. (a) The preferences established in AS 36.10.150 - 36.10.170 apply to

(1) the performance of contracts let by a municipality for construction, repair, preliminary surveys, engineering studies, consulting, maintenance work, or any other retention of services necessary to complete a given project;

(2) a construction project that is partly or wholly funded by state money if the state or an agency of the state, a department, office, agency, state board, commission, regional school board with respect to an educational facility under AS 14.11.020, public corporation, or other organizational unit of or created under the executive, legislative or judicial branch of state government, including the University of Alaska and the Alaska Railroad Corporation, is a signatory to the construction contract;

(3) work performed on a public works project under a grant to a municipality under AS 37.05.315;

(4) work performed on a public works project under a grant to a named recipient under AS 37.05.316; and

(5) work performed on a public works project under a grant to an unincorporated community under AS 37.05.317.

(b) If the governor has declared an area to be an area impacted by an economic disaster under AS 44.33.285, then the preference for residents of the area established under AS 44.33.285 - 44.33.310 supercedes the preference under AS 36.10.150 and 36.10.160 for contracts awarded by the state.

(c) The commissioner shall define the boundaries of an economic region or an area within which a preference applies.

Sec. 36.10.190. REPORTING PROVISIONS. An employer obligated to meet resident hire requirements under this chapter shall comply with the reporting provisions that the commissioner of labor determines are reasonably necessary to carry out this chapter. Except for statistical data, all information regarding specific employees is confidential and may not be released by the Department of Labor.

Sec. 36.10.200. CRIMINAL PENALTIES. (a) A person who makes a false sworn statement in connection with a certification of eligibility for an employment preference under this chapter is subject to criminal prosecution for perjury as provided in AS 11.56.200.

(b) A person who makes an unsworn falsification, with the intent to mislead a public servant in the performance of a duty, in connection with a certification of eligibility for an employment preference under this chapter, is subject to criminal prosecution as provided in AS 11.56.210.

(c) In addition to criminal penalties imposed by state law, if a person is convicted of a crime in connection with a false statement made in a certification required under AS 36.10.140, and the

conviction is not reversed, that person shall forfeit all future rights to eligibility for an employment preference under this chapter.

Sec. 36.10.210. CIVIL PENALTIES. (a) In addition to any criminal penalties imposed, the department may impose a civil penalty on a person who, in connection with certification of eligibility for an employment preference under this chapter,

(1) made a false sworn statement; or

(2) made an unsworn falsification with intent to mislead a public servant in the performance of a duty.

(b) The amount of the penalty under (a) of this section is not more than $2,000 for each of the first five false reports made by a person. The penalty for the sixth false report made by a person and for each false report thereafter is at least $2,000 and not more than $4,000.

Sec. 36.10.900. EFFECT OF JUDICIAL DECISIONS. If a provision of this chapter, or the application of a provision to a person or circumstance, is held invalid, the remainder of this chapter and the application to other persons or circumstances shall not be affected by the holding. The remainder shall be enforced to the greatest extent constitutionally permissible under the constitutions of the United States and the State of Alaska.

Sec. 36.10.990. DEFINITION. In this chapter "qualified" means possesses the requisite education, training, skills, or experience to perform the work.

* Sec. 6. AS 36.95.010 is amended by adding new paragraphs to read:

(9) "craft" means a recognized construction trade;

(10) "resident" means a person who establishes residency under AS 01.10.055.

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(e) The Department of Labor shall require a municipality awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

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* Sec. 9. AS 37.05.317 is amended by adding a new subsection to read:

(b) The Department of Labor shall require the qualified incorporated entity awarded a grant or agents or contractors with whom the Department of Community and Regional Affairs contracts under (a) of this section to comply with the requirements of AS 36.10.150 - 36.10.170 for employment generated by the grant or contract if the grant or contract is for a public works project.

* Sec. 10. The provisions of this Act do not apply to a contract entered into before the effective date of this Act unless the contract includes a provision requiring compliance with laws regarding the hiring of Alaska residents that take effect during the term of the contract.

* Sec. 11. AS 36.95.010(4) and (5) are repealed.

* Sec. 12. AS 36.10.010 is repealed.

* Sec. 13. Section 12 of this Act takes effect April 17, 1986, or immediately, in accordance with AS 01.10.070(c), whichever is later, if the final decision of the Alaska Supreme Court in Robison v. Francis, File No. S-493, Opinion No. 3011, January 17, 1986, is not submitted for review to the United States Supreme Court. If the decision is submitted for review but the United States Supreme Court declines to accept review, then sec. 12 of this Act takes effect on the date of the order of the United States

Supreme Court declining to accept review. If the United States Supreme Court accepts review, then sec. 12 of this Act takes effect on the date of a final decision of the United States Supreme Court affirming the decision of the Alaska Supreme Court.

* Sec. 14. Sections 1 - 11 of this Act take effect immediately in accordance with AS 01.10.070(c).

Cramer
3/7/86

Original sponsors: Boucher, Szymanski, Gruenberg, et al

IN THE HOUSE BY THE JUDICIARY COMMITTEE

CS FOR SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 466 (Judiciary)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to Alaskan resident employment preference; and providing for an effective date."

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* Sec. 2. AS 36.10.005 is amended by adding new subsections to read:

(c) The legislature further finds that the ratio of employees on a certified payroll who did not apply for or were refused a permanent fund dividend under AS 43.23 to employees who were found eligible to receive a dividend is a reasonable but not exclusive indicator of the ratio on a project of nonresident to resident employees on a public works project.

(d) When determining the ratio of nonresident to resident employees working on a public works project, the commissioner may consider information gathered from on-site surveys of public works projects including individual interviews, questionnaires, examination of the state of registration of vehicles owned or operated by employees, and other information acquired from inspection of certified payrolls.

(e) The legislature finds that the following factors are reasonable but not exclusive indicators of the ratio of nonresident to resident employees in the state:

(1) the ratio of applicants for unemployment insurance who list out-of-state residences to applicants who list residences in the state;

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(f) The legislature finds that

(1) the number of state residents who are unable to find work is considerably higher than is reflected by unemployment rates based on nationally accepted measures;

(2) many rural state residents who wish to work do not seek employment as frequently as necessary to meet federal definitions of unemployment because of continuing lack of employment opportunities in rural areas of the state.

* Sec. 3. AS 36.10.070 is repealed and reenacted to read:

Sec. 36.10.070. UNAVAILABILITY OF PREFERRED WORKERS. (a) An employer subject to hiring requirements under this chapter may request the Department of Labor to assist in locating qualified, eligible employees. After receiving a request for assistance, the department shall refer qualified, eligible, available residents to the employer to fill the employer's hiring needs. The employer shall cooperate with the department.

(b) If the department is unable to refer a sufficient number of qualified, eligible, available residents able to perform the work, the commissioner of labor may approve the hiring of residents who are not

eligible for preference and nonresidents for the balance of the request.

* Sec. 4. AS 36.10.075 is amended by adding a new subsection to read:

(b) The commissioner of labor shall adopt regulations to encourage and require the hiring of residents to the maximum extent permitted by law.

* Sec. 5. AS 36.10 is amended by adding new sections to read:

Sec. 36.10.130. RESIDENT HIRE REPORT. The attorney general and the commissioner of labor shall report biennially to the legislature and the governor on the status of employment in the state, the effect of nonresident employment on the employment of residents in the state, and methods to increase resident hire. The report shall be submitted by January 31 of the first session of a legislature.

Sec. 36.10.140. ELIGIBILITY FOR PREFERENCE. (a) A person is eligible for an employment preference under this chapter if the person registers as required by the Department of Labor, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered to find work with a public or private employment agency or a local hiring hall;

(3) is underemployed or marginally employed as defined by the department; or

(4) has completed a job-training program approved by the department and is either not employed or is engaged in employment that does not use the skills acquired in the job-training program.

(b) An employer subject to a resident hiring requirement under this chapter shall certify that persons employed as residents under the preference are eligible for the preference.

Sec. 36.10.150. DETERMINATION OF UNDEREMPLOYED AREA. (a)

Immediately following a determination by the commissioner of labor that an economic region of the state is an underemployed area or that the state as a whole is an underemployed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for work on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner shall determine that an economic region of the state or the state as a whole is an underemployed area if the commissioner finds that

(1) the rate of unemployment within the area is substantially higher than the national rate of unemployment;

(2) a substantial number of residents in the area desire work in occupations that would be employed on a public works project;

(3) the lack of employment opportunities in the area has contributed to social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of the unemployment of residents of the area.

Sec. 36.10.160. PREFERENCE FOR RESIDENTS OF ECONOMICALLY DISTRESSED AREAS. (a) Immediately following a determination by the commissioner that an economic region of the state is an economically distressed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 50 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the economically distressed area. The preference applies to worker hours on a craft-by-craft basis.

(b) The commissioner shall determine that an area is an economically distressed area if the commissioner finds that

(1) the unemployment rate in the area exceeds the national rate of unemployment by at least five percentage points;

(2) the lack of employment opportunities in the area has contributed to social or economic problems in the area; and

(3) employment of workers who are not residents is a peculiar source of unemployment of residents of the area.

Sec. 36.10.170. PREFERENCE FOR ECONOMICALLY DISADVANTAGED MINORITY RESIDENTS. (a) Immediately following a determination by the commissioner that the minority residents of an economic region are economically disadvantaged, and for the next two fiscal years after the determination, qualified minority residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 25 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the area. The preference applies to worker hours on a craft-by-craft basis.

(b) The commissioner shall determine that minority residents of an area are economically disadvantaged if the commissioner finds that

(1) the civilian minority population of the area exceeds the average civilian minority population for the state;

(2) either the percent of unemployment of civilian minority residents of the area is at least two times the percent of unemployment of nonminority residents of the area or the civilian minority population of the area has suffered past economic discrimination;

(3) the economic disadvantage of civilian minority residents of the area has contributed to social or economic problems in the area;

(4) employment of workers who are not residents is a peculiar source of unemployment of civilian minority residents of the area.

(c) In this section, a person is considered to be a member of a minority if the person is black but not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, as those terms are defined by the Equal Employment Opportunity Commission.

Sec. 36.10.180. PROJECTS SUBJECT TO PREFERENCE. (a) The preferences established in AS 36.10.150 - 36.10.170 apply to

(1) the performance of contracts let by a municipality for construction, repair, preliminary surveys, engineering studies, consulting, maintenance work, or any other retention of services necessary to complete a given project;

(2) a construction project that is partly or wholly funded by state money if the state or an agency of the state, a department, office, agency, state board, commission, regional school board with respect to an educational facility under AS 14.11.020, public corporation, or other organizational unit of or created under the executive, legislative or judicial branch of state government, including the University of Alaska and the Alaska Railroad Corporation, is a signatory to the construction contract;

(3) work performed on a public works project under a grant to a municipality under AS 37.05.315;

(4) work performed on a public works project under a grant to a named recipient under AS 37.05.316; and

(5) work performed on a public works project under a grant to an unincorporated community under AS 37.05.317.

(b) If the governor has declared an area to be an area impacted by an economic disaster under AS 44.33.285, then the preference for residents of the area established under AS 44.33.285 - 44.33.310 supercedes the preference under AS 36.10.150 and 36.10.160 for contracts awarded by the state.

(c) The commissioner shall define the boundaries of an economic region or an area within which a preference applies.

Sec. 36.10.190. PENALTIES. (a) A person who makes a false sworn statement in connection with a certification of eligibility for an employment preference under this chapter is subject to criminal prosecution for perjury as provided in AS 11.56.200.

(b) A person who makes an unsworn falsification, with the intent to mislead a public servant in the performance of a duty, in connection with a certification of eligibility for an employment preference under this chapter, is subject to criminal prosecution as provided in AS 11.56.210.

(c) In addition to criminal penalties imposed by state law, if a person is convicted of a crime in connection with a false statement made in a certification required under AS 36.10.140, and the conviction is not reversed, that person shall forfeit all future rights to eligibility for an employment preference under this chapter.

Sec. 36.10.900. EFFECT OF JUDICIAL DECISIONS. If a provision of this chapter, or the application of a provision to a person or circumstance, is held invalid, the remainder of this chapter and the application to other persons or circumstances shall not be affected by the holding. The remainder shall be enforced to the greatest extent constitutionally permissible under the constitutions of the United States and the State of Alaska.

Sec. 36.10.990. DEFINITION. In this chapter "qualified" means possesses the requisite education, training, skills, or experience to perform the work.

* Sec. 6. AS 36.95.010 is amended by adding new paragraphs to read:

(9) "craft" means a recognized construction trade;

(10) "resident" means a person who establishes residency under AS 01.10.055.

* Sec. 7. AS 37.05.315 is amended by adding a new subsection to read:

(e) The Department of Labor shall require a municipality awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

* Sec. 8. AS 37.05.316 is amended by adding a new subsection to read:

(b) The Department of Labor shall require a recipient awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

* Sec. 9. AS 37.05.317 is amended by adding a new subsection to read:

(b) The Department of Labor shall require the qualified incorporated entity awarded a grant or agents or contractors with whom the Department of Community and Regional Affairs contracts under (a) of this section to comply with the requirements of AS 36.10.150 - 36.10.170 for employment generated by the grant or contract if the grant or contract is for a public works project.

* Sec. 10. The provisions of this Act do not apply to a contract entered into before the effective date of this Act unless the contract includes a provision requiring compliance with laws regarding the hiring of Alaska residents that take effect during the term of the contract.

* Sec. 11. AS 36.95.010(4) and (5) are repealed.

* Sec. 12. AS 36.10.010 is repealed.

* Sec. 13. Section 12 of this Act takes effect April 17, 1986, or immediately, in accordance with AS 01.10.070(c), whichever is later, if the final decision of the Alaska Supreme Court in Robison v. Francis, File No. S-493, Opinion No. 3011, January 17, 1986, is not submitted for review to

the United States Supreme Court. If the decision is submitted for review but the United States Supreme Court declines to accept review, then sec. 12 of this Act takes effect on the date of the order of the United States Supreme Court declining to accept review. If the United States Supreme Court accepts review, then sec. 12 of this Act takes effect on the date of a final decision of the United States Supreme Court affirming the decision of the Alaska Supreme Court.

* Sec. 14. Sections 1 - 13 of this Act take effect immediately in accordance with AS 01.10.070(c).

Original sponsors: Boucher, Szymanski, Gruenberg, et al

IN THE HOUSE BY THE JUDICIARY COMMITTEE

CS FOR SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 466 (Judiciary)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to Alaskan resident employment preference; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. PURPOSE. The legislature recognizes that the state has a significant unemployment problem. This Act is intended to better fulfill the state's duty of loyalty to its citizens, reduce unemployment among residents of the state, remedy social harms resulting from chronic unemployment, and assist economically and socially disadvantaged residents. If the courts find that a portion of AS 36.10 is unconstitutional, the public interest requires that the remaining portions be implemented as fully as possible.

* Sec. 2. AS 36.10.005 is amended by adding new subsections to read:

(c) The legislature further finds that the ratio of employees on a certified payroll who did not apply for or were refused a permanent fund dividend under AS 43.23 to employees who were found eligible to receive a dividend is a reasonable but not exclusive indicator of the ratio of nonresident to resident employees on a public works project.

(d) When determining the ratio of nonresident to resident employees working on a public works project, the commissioner may consider information gathered from on-site surveys of public works projects including individual interviews, questionnaires, examination of the state of registration of vehicles owned or operated by employees, and other information acquired from inspection of certified payrolls.

(e) The legislature finds that the following factors are

reasonable but not exclusive indicators of the ratio of nonresident to resident employees in the state:

(1) the ratio of applicants for unemployment insurance who list out-of-state residences to applicants who list residences in the state;

(2) the ratio of employees who are subject to unemployment insurance coverage and who did not apply for or were denied a permanent fund dividend to employees who were found eligible for a dividend.

(f) The legislature finds that

(1) the number of state residents who are unable to find work is considerably higher than is reflected by unemployment rates based on nationally accepted measures;

(2) many rural state residents who wish to work do not seek employment as frequently as necessary to meet federal definitions of unemployment because of continuing lack of employment opportunities in rural areas of the state.

* Sec. 3. AS 36.10.070 is repealed and reenacted to read:

Sec. 36.10.070. UNAVAILABILITY OF PREFERRED WORKERS. (a) An employer subject to hiring requirements under this chapter may request the Department of Labor to assist in locating qualified, eligible employees. After receiving a request for assistance, the department shall refer qualified, eligible, available residents to the employer to fill the employer's hiring needs. The employer shall cooperate with the department.

(b) If the department is unable to refer a sufficient number of qualified, eligible, available residents able to perform the work, the commissioner of labor may approve the hiring of residents who are not eligible for preference and nonresidents for the balance of the

request.

* Sec. 4. AS 36.10.075 is amended by adding a new subsection to read:

(b) The commissioner of labor shall adopt regulations to encourage and require the hiring of residents to the maximum extent permitted by law.

* Sec. 5. AS 36.10 is amended by adding new sections to read:

Sec. 36.10.130. RESIDENT HIRE REPORT. The attorney general and the commissioner of labor shall report annually to the legislature and the governor on the status of employment in the state, the effect of nonresident employment on the employment of residents in the state, and methods to increase resident hire. The report shall be submitted by January 31 of each year.

Sec. 36.10.140. ELIGIBILITY FOR PREFERENCE. (a) A person is eligible for an employment preference under this chapter if the person certifies eligibility as required by the Department of Labor, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered to find work with a public or private employment agency or a local hiring hall;

(3) is underemployed or marginally employed as defined by the department; or

(4) has completed a job-training program approved by the department and is either not employed or is engaged in employment that does not use the skills acquired in the job-training program.

(b) An employer subject to a resident hiring requirement under this chapter shall certify that persons employed as residents under the preference are eligible for the preference.

Sec. 36.10.150. DETERMINATION OF UNDEREMPLOYED AREA. (a)

Immediately following a determination by the commissioner of labor that an economic region of the state is an underemployed area or that the state as a whole is an underemployed area, and for the next two fiscal years after the determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for work on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner of labor shall determine the amount of work that must be performed under this section by eligible qualified residents. In making this determination, the commissioner shall consider the nature of the work, the classification of workers, availability of eligible residents, and the willingness of eligible residents to perform the work.

(c) The commissioner shall determine that an economic region of the state or the state as a whole is an underemployed area if the commissioner finds that

(1) the rate of unemployment within the area is substantially higher than the national rate of unemployment;

(2) a substantial number of residents in the area desire work in occupations that would be employed on a public works project;

(3) the lack of employment opportunities in the area has substantially contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of the unemployment of residents of the area.

Sec. 36.10.160. PREFERENCE FOR RESIDENTS OF ECONOMICALLY DISTRESSED AREAS. (a) Immediately following a determination by the commissioner that an economic region of the state is an economically distressed area, and for the next two fiscal years after the

determination, qualified residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 50 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the economically distressed area.

(b) The commissioner shall determine that an area is an economically distressed area if the commissioner finds that

(1) the per capita income of residents is less than 90 percent of the per capita income of the United States as a whole, or the unemployment rate in the area exceeds the national rate of unemployment by at least five percentage points;

(2) the lack of employment opportunities in the area has substantially contributed to serious social or economic problems in the area; and

(3) employment of workers who are not residents is a peculiar source of unemployment of residents of the area.

Sec. 36.10.170. PREFERENCE FOR ECONOMICALLY DISADVANTAGED MINORITY RESIDENTS. (a) Immediately following a determination by the commissioner that the female or minority residents of an economic region are economically disadvantaged, and for the next two fiscal years after the determination, qualified female or minority residents of the area who are eligible under AS 36.10.140 shall be given preference for at least 25 percent of employment on each project under AS 36.10.180 that is wholly or partially sited within the area.

(b) The commissioner shall determine that the female or minority residents of an area are economically disadvantaged if the commissioner finds that

(1) the female or civilian minority population of the area exceeds the average female or civilian minority population for the state;

(2) either the percent of unemployment of female or civilian minority residents of the area is at least two times the percent of unemployment of male or nonminority residents of the area or the female or civilian minority population of the area has suffered past economic discrimination;

(3) the economic disadvantage of female or civilian minority residents of the area has substantially contributed to serious social or economic problems in the area; and

(4) employment of workers who are not residents is a peculiar source of unemployment of female or civilian minority residents of the area.

(c) In this section, a person is considered to be a member of a minority if the person is black but not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, as those terms are defined by the Equal Employment Opportunity Commission.

Sec. 36.10.180. PROJECTS SUBJECT TO PREFERENCE. (a) The preferences established in AS 36.10.150 - 36.10.170 apply to

(1) the performance of contracts let by a municipality for construction, repair, preliminary surveys, engineering studies, consulting, maintenance work, or any other retention of services necessary to complete a given project;

(2) a construction project that is partly or wholly funded by state money if the state or an agency of the state, a department, office, agency, state board, commission, regional school board with respect to an educational facility under AS 14.11.020, public corporation, or other organizational unit of or created under the executive, legislative or judicial branch of state government, including the University of Alaska and the Alaska Railroad Corporation, is a signatory to the construction contract;

(3) work performed on a public works project under a grant to a municipality under AS 37.05.315;

(4) work performed on a public works project under a grant to a named recipient under AS 37.05.316; and

(5) work performed on a public works project under a grant to an unincorporated community under AS 37.05.317.

(b) If the governor has declared an area to be an area impacted by an economic disaster under AS 44.33.285, then the preference for residents of the area established under AS 44.33.285 - 44.33.310 supercedes the preference under AS 36.10.150 and 36.10.160 for contracts awarded by the state.

(c) The commissioner shall define the boundaries of an economic region or an area within which a preference applies.

Sec. 36.10.190. REPORTING PROVISIONS. An employer obligated to meet resident hire requirements under this chapter shall comply with the reporting provisions that the commissioner of labor determines are reasonably necessary to carry out this chapter. Except for statistical data, all information regarding specific employees is confidential and may not be released by the Department of Labor.

Sec. 36.10.200. CRIMINAL PENALTIES. (a) A person who makes a false sworn statement in connection with a certification of eligibility for an employment preference under this chapter is subject to criminal prosecution for perjury as provided in AS 11.56.200.

(b) A person who makes an unsworn falsification, with the intent to mislead a public servant in the performance of a duty, in connection with a certification of eligibility for an employment preference under this chapter, is subject to criminal prosecution as provided in AS 11.56.210.

(c) In addition to criminal penalties imposed by state law, if a

person is convicted of a crime in connection with a false statement made in a certification required under AS 36.10.140, and the conviction is not reversed, that person shall forfeit all future rights to eligibility for an employment preference under this chapter.

Sec. 36.10.210. CIVIL PENALTIES. (a) In addition to any criminal penalties imposed, after a hearing the department may impose a civil penalty on a person who, in connection with certification of eligibility for an employment preference under this chapter,

(1) made a false sworn statement; or

(2) made an unsworn falsification with intent to mislead a public servant in the performance of a duty.

(b) The amount of the civil penalty under (a) of this section for a person who falsely certifies that the person is eligible for an employment preference under this chapter is not more than $400 for each false certification. The person also forfeits all future rights to eligibility for an employment preference under this chapter.

(c) The amount of the civil penalty under (a) of this section for an employer who falsely certifies that employees are residents eligible for a preference under this chapter is not more than $2,000 for each of the first five false certifications. The penalty for the sixth false certification made by an employer and for each false certification thereafter is at least $2,000 and not more than $4,000.

Sec. 36.10.900. EFFECT OF JUDICIAL DECISIONS. If a provision of this chapter, or the application of a provision to a person or circumstance, is held invalid, the remainder of this chapter and the application to other persons or circumstances shall not be affected by the holding. The remainder shall be enforced to the greatest extent constitutionally permissible under the constitutions of the United States and the State of Alaska.

Sec. 36.10.990. DEFINITIONS. In this chapter

(1) "available" means physically present at the place of hire at the time requested by the employer;

(2) "qualified" means possesses the requisite education, training, skills, or experience to perform the work.

* Sec. 6. AS 36.95.010 is amended by adding a new paragraph to read:

(9) "resident" means a person who establishes residency under AS 01.10.055.

* Sec. 7. AS 37.05.315 is amended by adding a new subsection to read:

(e) The Department of Labor shall require a municipality awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10.170 for employment generated by the grant.

* Sec. 8. AS 37.05.316 is amended by adding a new subsection to read:

(b) The Department of Labor shall require a recipient awarded a grant for a public works project under (a) of this section to comply with the hiring preferences under AS 36.10.150 - 36.10. 70 for employment generated by the grant.

* Sec. 9. AS 37.05.317 is amended by adding a new subsection to read:

(b) The Department of Labor shall require the qualified incorporated entity awarded a grant or agents or contractors with whom the Department of Community and Regional Affairs contracts under (a) of this section to comply with the requirements of AS 36.10.150 - 36.10.-170 for employment generated by the grant or contract if the grant or contract is for a public works project.

* Sec. 10. The provisions of this Act do not apply to a contract entered into before the effective date of this Act unless the contract includes a provision requiring compliance with laws regarding the hiring of Alaska residents that take effect during the term of the contract.

* Sec. 11. AS 36.95.010(4) and (5) are repealed.

* Sec. 12. AS 36.10.010 is repealed.

* Sec. 13. Section 12 of this Act takes effect April 17, 1986, or immediately, in accordance with AS 01.10.070(c), whichever is later, if the final decision of the Alaska Supreme Court in Robison v. Francis, File No. S-49[illegible] Opinion No. 3011, January 17, 1986, is not submitted for review to the United States Supreme Court. If the decision is submitted for review but the United States Supreme Court declines to accept review, then sec. 12 of this Act takes effect on the date of the order of the United States Supreme Court declining to accept review. If the United States Supreme Court accepts review, then sec. 12 of this Act takes effect on the date of a final decision of the United States Supreme Court affirming the decision of the Alaska Supreme Court.

* Sec. 14. Sections 1 - 11 of this Act take effect immediately in accordance with AS 01.10.070(c).

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date: 2/11/86

REQUEST

Bill/Resolution No.: SS HB 466
Title: "An Act relating to Alaskan resident employment preference..."

Sponsor: Boucher, Szymanski, et al
Requestor: Labor and Commerce
Date of Request: 02/05/86

FISCAL DETAIL

Agency Affected: Labor
BRU: Labor Standards and Safety

Components: Wage and Hour

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL		114.8	101.7	105.8	110.0	114.4
SUPPLIES						
EQUIPMENT		46.5	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	161.3	101.7	105.8	110.0	114.4
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND	0	161.3	101.7	105.8	110.0	114.4
FEDERAL FUNDS						
OTHER						
TOTAL	0	161.3	101.7	105.8	110.0	114.4

POSITIONS :

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

See attached

Prepared by: Bob Bacolas, Director
Division: Labor Standards and Safety
Phone: 465-4870
Date: 2/11/86

Approved by Commissioner: Jim Robison
Agency: Labor
Date: 2/11/86

Distribution (by Agency preparing fiscal note):
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS HB 466

Currently the Division of Labor Standards and Safety (LS&S) receives weekly certified payroll documents for all public construction projects as required in AS 36. Under this bill the department will use the public construction certified payroll forms as source documents to determine the legal domicile of persons employed on public construction projects. In certain cases the department will also be scrutinizing the ethnic makeup of the employees to determine the utilization of minorities.

These certified payroll documents are now collected and summarized manually by the Division of Labor Standards and Safety. This fiscal note will fund the automation of the certified payroll documents. This will allow a more timely determination of residency status of persons employed on public construction projects. This automation will also assist in providing a list of employees with incomplete or questionable data. The existing investigative staff will then resolve the questionable items throughly personal contact with employees and employers.

Reports will be developed for the Research and Analysis Division to allow tnem to do crossmatch reviews with other data sources (e.g. Permanent Fund Dividend).

Specific costs are as follows:

Contractual Services

Professional fees for data entry	80.0
DP Applications/programming development (one time only $17.0)	20.0
DP Support (misc. chargeback)	3.0
DP Telecommunications	.8
Communications (phone and postage)	5.0
Equipment repair and maintenance	5.0
Other miscellaneous	1.0
	114.8

Equipment (one time only)

4 workstations	21.6
3 printers	5.4
3 modems	15.0
75 Mega byte disk pack	1.5
Telecommunication software	3.0
	46.5
Total	161.3

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS HB 466

A contract for data entry services will be required for entry of all payroll records into the new automated system.

Equipment upgrades and improved telecommunication links between Juneau, Fairbanks and Anchorage will allow online review and audit of certified payroll data in each location. The equipment will be a one time purchase. Other costs are projected to future years at 4% inflation.

FISCAL NOTE

Revision Date: 2/10/86

REQUEST

Bill/Resolution No.: SS HB 466
Title: "An Act relating to Alaska resident employment preference..."

Sponsor: Boucher, Szymanski, ET al
Requestor: Labor & Commerce
Date of Request: 02/05/86

FISCAL DETAIL

Agency Affected: Labor
BRU: Administrative Services

Components: Special Services

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES		108.5	108.5	108.5	108.5	108.5
TRAVEL						
CONTRACTUAL		218.2	223.5	246.2	240.4	251.2
SUPPLIES		1.2	1.2	1.3	1.3	1.4
EQUIPMENT		4.0	.8	.9	.9	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	331.9	334	356.9	351.1	362.1
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		331.9	334.0	356.9	351.1	362.1
FEDERAL FUNDS						
OTHER						
TOTAL	0	331.9	334.0	356.9	351.1	362.1

POSITIONS :

FULL-TIME	0	3.0	3.0	3.0	3.0	3.0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Judy G. Knight

Prepared by: Judy G. Knight, Director — Phone: 465-2720
Division: Administrative Services — Date: 2/10/86

Approved by Commissioner: Jim Robison — Date: 2/10/86
Agency: Labor

Distribution (by Agency preparing fiscal note):
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

This legislation requires a resident hire report and other economic information for this department to make the determinations required by various sections of this bill. The assumptions are as follows:

1. A resident hire report would be completed biennially. The first report will be issued January 31, 1987.

2. On-going collection of occupational titles from employers, and subsequent computer matching to determine residency status.

3. Occupational information would be a primary feature of the annual report beginning in 1988, permitting more specific identification of the effect of nonresident employment on resident unemployment in Alaska. The provision of occupational titles assumes the department will continue to receive funding at the FY 86 level to provide core occupational information programs.

4. The collection of occupational titles from firms will be phased in over a three year period. Industries identified as having the highest dollar payments to nonresidents in 1984 would be targeted first:

   First Year - construction, oil and gas mining, and food processing;

   Second Year - all first year industries plus business services, local government, miscellaneous services, eating and drinking places, air transportation, and state government; and

   Third Year - all industries.

5. In addition to the occupational information, reporting of the residency status by industry and area would be necessary.

6. Section 36.10.170 (b)(3) would require special extraction of ZIP codes for all applicants of the Permanent Fund Dividend. We assume that the Department of Labor will be able to obtain that information from the Department of Revenue for further computer matching and conversion to census areas.

7. The department will be unable to obtain access to voter registration files.

8. No survey will be conducted to obtain information on a broader definition of unemployment by census area because the costs would be extremely high. This would mean no substantiation of 36.10.005 (f).

9. Substate average family income (A.S. 36.10.160 (b)(1)) is not available except from each decennial census. No attempt to prepare these estimates has been included into this fiscal note.

10. All minority demographic and economic information, except that required from contractors on state funded construction projects, will be derived from the decennial census. No costs are included for this in the fiscal note.

For Bill/Resolution No. SS.HB 466

The contractual services costs are detailed as follows:

Description	FY 87	FY 88	FY 89	FY 90	FY 91
Key entry	$ 40.0	$ 60.0	$ 62.0	$ 64.0	$ 66.0
DP operations	120.0	135.0	150.0	153.0	156.0
DP applications	30.0	4.5	4.7	4.9	5.1
Printing	4.5	0	4.5	0	5.0
Phone (Toll service)	12.0	12.5	13.0	6.0	6.2
Equipment lease	8.0	8.3	8.7	9.0	9.4
Equipment maintenance	.8	.8	.9	.9	.9
Training, shipping, & misc.	2.9	2.4	2.4	2.6	2.6
	$218.2	$223.5	$246.2	$240.4	$251.2

Most ongoing costs are increased each year @4% inflation. Printing is budgeted biennially.

STATE OF ALASKA ...ION

FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : SS HB 466

Title : " An Act relating to Alaskan resident employment preference...

Sponsor : Boucher, Szymanski, et al

Requestor : Labor & Commerce

Date of Request : 02/05/86

FISCAL DETAIL

Agency Affected : Labor

BRU : Administrative Services

Components : Special Services

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES		108.5	108.5	108.5	108.5	108.5
TRAVEL						
CONTRACTUAL		219.2	227.2	244.2	244.4	249.4
SUPPLIES		1.2	1.2	1.2	1.2	1.2
EQUIPMENT		4.0	.8	.8	.8	.8
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	331.9	337.7	354.7	354.9	359.9
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		331.9	337.7	354.7	354.9	359.9
FEDERAL FUNDS						
OTHER						
TOTAL	0	331.9	337.7	354.7	354.9	359.9

POSITIONS :

FULL-TIME	0	3.0	3.0	3.0	3.0	3.0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Judy Knight, Director

Division : Administrative Services

Phone : 465-2720

Date : 02/06/86

Approved by Commissioner : Jim Robison

Agency : Labor

Date : 02/06/86

Distribution (by Agency preparing fiscal note) :

Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

This legislation requires an annual resident hire report and other economic information for this department to make the determinations required by various sections of this bill. The assumptions are as follows:

1. An annual resident hire report would be completed by January 31 each year beginning in 1987.

2. On-going collection of occupational titles from employers, and subsequent computer matching to determine residency status.

3. Occupational information would be a primary feature of the annual report beginning in 1988, permitting more specific identification of the effect of nonresident employment on resident unemployment in Alaska. The provision of occupational titles assumes the department will continue to receive funding at the FY 86 level to provide core occupational information programs.

4. The collection of occupational titles from firms will be phased in over a three year period. Industries identified as having the highest dollar payments to nonresidents in 1984 would be targeted first:

   First Year-construction, oil and gas mining, and food processing;

   Second Year-all first year industries plus business services, local government, miscellaneous services, eating and drinking places, air transportation, and state government; and

   Third Year-all industries.

5. In addition to the occupational information, reporting of the residency status by industry and area would be necessary.

6. Section 36.10.170 (b)(3) would require special extraction of ZIP codes for all applicants of the Permanent Fund Dividend. We assume that the Department of Labor will be able to obtain that information from the Department of Revenue for further computer matching and conversion to census areas.

7. The department will be unable to obtain access to voter registration files.

8. No survey will be conducted to obtain information on a broader definition of unemployment by census area because the costs would be extremely high. This would mean no substantiation of 36.10.005 (f).

9. Substate average family income (36.10.160 (b)(1)) is not available except from each decennial census. No attempt to prepare these estimates has been included into this fiscal note.

10. All minority demographic and economic information, except that required from contractors on state funded construction projects, will be derived from the decennial census. No costs are included for this in the fiscal note.

Position Title	Labor Economist II			No. of Positions	Range/Step	Barg Unit	Gov.	Approve	Disapp
Time Status: PFT	Staff Months: 12.0	RP Number:		Location: Juneau	Election District:		Leg.		

Type of Expenditure	1	2	Amount 3
Salary		33,660	
Benefits		10,779	
Premium Pay			
Other			
Total Personal Services			44,439
Travel			
Contractual			8,000
Commodities			400
Equipment			1,200
Other			
Total Cost			54,039

Receipt Code	Funding Source		Amount
	Federal Receipts	1002	
	G. F. Match	1003	
	General Funds	1004	54,039
	I A Receipts	1005	
	Program Receipts	1028	
	CIP Receipts	1061	
	Other		

For B&M Use Only
Key Number

Justification

This position will have primary responsibility for the analysis of data and preparation of the annual resident hire report. Specifically the duties would include:

1. Coordinate the collection and monitor the validity of relevant resident hire related statistics from other agencies including the Department of Revenue and the Division of Labor Standards and Safety.
2. Coordinate the updating and crossmatching of resident hire related data files on the mainframe computer with the analyst programmer.
3. Analyze microcomputer resident hire data base to generate resident hire related tables and reports. The reports will include data relating to occupational displacement of nonresidents by census area and other related economi statistics associated with issue of resident hire.
4. Supervise the Statistical Clerk that will prepare the basic resident hire data tables for the report.
5. Prepare the annual resident hire report.

Contractual services costs include phone, training, equipment lease and maintenance, and other miscellaneous items.

Request For New Position

Agency: Labor
BRU: Administrative Services
Component: Special Services

Page of
Revised Date

FY 87

Position Title	Statistical Clerk			No. of Positions	Range/Step	Bargaining Unit	Gov.	Approv.	Disapp
Time Status: PFT	Staff Months: 12.0	RP Number:		2	80	300	Leg.		
				Location: Juneau	Election District:				

Type of Expenditure	1	2	Amount 3
Salary	23,580 X 2	47,160	
Benefits		16,916	
Premium Pay			
Other			
Total Personal Services			64,076
Travel			
Contractual			16,000
Commodities			800
Equipment			2,800
Other			
Total Cost			83,676

Receipt Code	Funding Source		Amount
	Federal Receipts	1002	
	G. F. Match	1003	
	General Funds	1004	83,676
	I A Receipts	1005	
	Program Receipts	1028	
	CIP Receipts	1061	
	Other		

For B&M Use Only
Key Number ___ - ___ - ___ - ___ - ___

Justification

One position will support a labor economist to prepare an annual report on the effect of nonresident employment on Alaskans. Secondarily this position would assist on the quality control of occupational titles which would be submitted by employers each quarter. Specifically the duties would be:

1. Update tables of economic information by resident status.
2. Load information into spreadsheets to show occupational displacement of residents by nonresidents.
3. Assist in the quality control of the occupational displacement of residents by nonresident workers.

The other position will work on the quality control of occupational titles which would be submitted by employers each quarter. Specifically the duties would be:

1. Review detailed edit listings.
2. Update edit data files.
3. Call employers for clarification when necessary.
4. Correct occupational titles.
5. Prepare computer summaries of results.

Contractual costs for these positions include phone, training, equipment lease and maintenance and other miscellaneous items.

Request For New Position

Agency: Labor

BRU: Administrative Services

Component: Special Services

Page ___ of ___
Revised Date

FY 87

STATE OF ALASKA 1986 LEGISLATURE

FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : SS HB 466
Title : "An Act relating to Alaskan resident employment preference..."

Sponsor : Boucher, Szymanski, et al
Requestor : Labor and Commerce
Date of Request : 02/05/86

FISCAL DETAIL

Agency Affected : Labor
BRU : Labor Standards and Safety

Components : Wage and Hour

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL		114.8	101.7	105.3	110.0	114.4
SUPPLIES						
EQUIPMENT		46.5	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	161.3	101.7	105.8	110.0	114.4
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND	0	161.3	101.7	105.3	110.0	114.4
FEDERAL FUNDS						
OTHER						
TOTAL	0	161.3	101.7	105.3	110.0	114.4

POSITIONS :

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

See attached

Prepared by : Bob Bacolas, Director
Division : Labor Standards and Safety
Phone : 465-4870
Date : 02/05/86

Approved by Commissioner : Jim Robison
Agency : Labor
Date : 02/06/86

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

Currently the Division of Labor Standards and Safety (LS&S) receives weekly certified payroll documents for all public construction projects as required in AS 36. Under this bill the department will use the public construction certified payroll forms as source documents to determine the legal domicile of persons employed on public construction projects. In certain cases the department will also be scrutinizing the ethnic makeup of the employees to determine the utilization of minorities.

These certified payroll documents are now collected and summarized manually by Labor Standards and Safety. This fiscal note will fund the automation of the certified payroll documents. This will allow access by the Research and Analysis section of the department to make residency determinations. Research and Analysis will in turn provide to Labor Standards and Safety lists of employees with incomplete or questionable data regarding their residency status. Labor Standards and Safety will then resolve the questionable items through personal contact with employees and employers by using existing investigative staff.

Specific costs are as follows:

Contractual Services

Professional fees for data entry	80.0
DP Applications/programming development (one time only $17.0)	20.0
DP Operations	3.0
DP Telecommunications	.8
Communications (phone and postage)	5.0
Equipment repair and maintenance	5.0
Other miscellaneous	1.0
	114.8

Equipment (one time only)

4 workstations	21.6	
3 printers	5.4	
3 modems	15.0	
75 Mega byte disk pack	1.5	
Telecommunication software	3.0	
	46.5	
Total		161.3

This bill will require automating the certified payroll information. It will be necessary to develop the programming for automation. Ongoing enhancements and maintenance of the programming will also be required. A contract for data entry services will be executed. There will be an equipment upgrade of the existing data processing equipment in the Labor Standards and Safety Division. The equipment will be a one time purchase. Other costs are projected to future years at 4% inflation.

Alaska State Legislature

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CHAIRMAN
Special Committee on
Telecommunications

MEMBER
Labor and Commerce
State Affairs
Finance—Subcommittee Administration

Representative H. A. "Red" Boucher

M E M O R A N D U M

To: All Members, House Judiciary Committee

From: Representative H.A. "Red" Boucher

Date: March 24, 1986

Subject: Suggested additional changes to Proposed CSSSHB 466 (Jud) (version 2, 3/19/86 by Cramer)

After conferring with Deputy Attorney General Ron Lorenson, as sponsor of HB 466 I would like to propose the following additional amendments to the latest draft version of the bill:

1) At the end of Section 36.10.150 (a)--page 4, line 7), add the phrase "The preference applies to worker hours on a craft by craft basis."

Through oversight, this line was omitted from this section, although it appears in the sections on preference for economically disadvantaged minority residents, and for residents of economically distressed areas.

2) Insert in Section 36.10.210 (page 8, line 3) immediately following "(a)," : Following a hearing on the matter, and in addition to any criminal penalties imposed, etc.

This would thus require the Department to hold some kind of hearing process on the matter before they could impose a civil penalty.

3) In Section 36.10.210 (b), delete this entire subsection and insert the following:

(b) The penalty for a person who falsely certifes eligibility for an employment preference is not more than $400 for each instance of false certification and forfeiture of all future rights to eligibility for an employment preference under this chapter.

(c) The penalty for an employer who falsely certifies that persons employed as residents under an applicable employment preference are eligible for the preference is not

more than $2,000 for each of the first five instances of false certification. The penalty for the sixth false certification made by an employer and for each false certification thereafter is at least $2,000 and not more than $4,000.

This would make clear who would pay what level of fine. As the draft currently reads, a person can be an individual or a corporate entity, so we need to make it clear that for the purposes of the civil penalty, an individual is subject to a lesser fine than a corporate entity.

Alaska State Legislature

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CHAIRMAN
Special Committee on
Telecommunications

MEMBER
Labor and Commerce
State Affairs
Finance—Subcommittee Administration

Representative H. A. "Red" Boucher

M E M O R A N D U M

To: All Committee Members
House Judiciary Committee

From: Rep. H.A. "Red" Boucher
Sponsor, HB 466

Date: March 21, 1986

Subject: Proposed CS SSHB 466 (Jud)

Attached please find a proposed CS for SSHB 466 (Jud), version 2, dated March 19, 1986; along with a section analysis provided by Teresa Cramer.

Version one of the proposed CS encorporates requested changes in the bill requested by the Department of Labor in their March 4 memo; by the Department of Law in Loreson's February 26 memo; and in response to issues raised at previous Judiciary Committee hearings.

Version two encorporates additional changes that were made after further consultation wtih the Dept. of Labor and with Senator Josephson's office, in an attempt to make the language of HB 477 and SB 271 more compatible and consistent.

The Sectional Analysis basically compares the original SSHB 466 that came out of House Labor and Commerce Committee with the first version and second version of the proposed CS. Since the second version contains all of the changes from the first version plus some additions, I have only attached the second version for simplicity's sake.

I believe that what we have in this proposed draft is the best bill that we can craft to balance out the various administrative, statistical and constitutional needs that have to be met. I would appreciate it if you would read this bill over carefully, and if you have any objections or concerns, to contact my office or the Committee chair before next the scheduled hearing on the bill this Monday, and we will try to accommodate them. It is imperative that this important piece of legislation is acted on as rapidly as possible; and I ask the Committee member's assistance and cooperation in acting on the bill as rapidly as possible.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y STATE CAPITOL
JUNEAU, ALASKA 99811
907 465 3800

M E M O R A N D U M March 21, 1986

SUBJECT: Current versions o HB 466

TO: Representative Red Boucher

FROM: Teresa B. Cramer TBC
Legislative Counsel

You have requested a memorandum pointing out the differences between SSHB 466 and Versions 1 and 2 of CSSSHB 466 (Judiciary). Version 1 is dated 3/7/86. Version 2 is dated 3/19/86.

COMPARING SSHB 466 WITH CSSSHB 466 (JUDICIARY), VERSION 1

Version 1 rewrites some of the language in the findings found in sec. 2 of the bill. The changes are not substantive.

Version 1 combines Sec. 36.10.140(a) and (b) for clarity and adds a new subsection (b), requiring employers to certify that persons employed as residents are eligible for the preference.

In Secs. 36.10.150, 36.10.160, and 36.10.170, creating three different resident hiring preferences, Version 1 changes the effective date of the preference from "during the two fiscal years following a determination" to "immediately and for the two fiscal years following a determination."

Also in those sections, in the findings that the commissioner must make to impose the preference, the finding relating to the employment of workers who are not residents is changed. The phrase "of the area" is deleted from the following

> employment of workers who are not residents of the area is a peculiar source of the unemployment of residents of the area. (Emphasis added.)

In Sec. 36.10.160(b)(1), Version 1 deletes reference to the

average family income being below the adjusted poverty guideline of the federal Department of Health and Human Services.

Version 1 changes the definition of minority person found in Sec. 36.10.170(c).

Version 1 adds criminal penalties, Sec. 36.10.190, for making false statements concerning eligibility for employment preferences under the chapter.

Version 1 adds a definition of "resident" to sec. 6 of the bill, based on the definition of residency found in Title 1.

Version 1 adds sec. 10 which applies the Act to any contracts that include a provision requiring compliance with laws regarding resident hire that take effect during the term of the contract. It also corrects the effective date for potential the repeal of AS 36.10.010 to reflect the date by which a writ of certiorari must be filed.

COMPARING VERSION 1 AND VERSION 2 OF CSSSHB 466 (JUDICIARY)

In Sec. 36.10.140, Version 2 requires that a person "certifies eligibility" for the preference, making clear that the department is not intended to run a registration program for the preference.

Version 2 adds a new subsection (b) to 36.10.150 to require the commissioner of labor to determine the amount of work that must be performed on a project by eligible qualified residents. This replaces the requirement in SSHB 466 and Version 1 that all work be performed by residents.

In secs. 36.10.150, 36.10.160, and 36.10.170, to the finding concerning the contribution that unemployment makes to social or economic problems, Version 2 requires that the commissioner find that the lack of employment has contributed to <u>serious</u> social or economic problems.

In Sec. 36.10.160(b)(1), Version 2 permits the commissioner to find that the <u>per capita income of residents is less than 90 percent of the U.S. per capita income</u> as an alternative to finding that the unemployment rate exceeds the national rate by at least 5 percentage points.

Version 2 adds a new Sec. 36.10.190, requiring employers to

report as required by the commissioner of labor. It also adds a section imposing civil penalties, Sec. 36.10.210.

If I may be of further assistance, please advise.

TC:mkr
m4/033

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LABOR

OFFICE OF THE COMMISSIONER

P.O. BOX 1149
JUNEAU, ALASKA 99802
PHONE: (907) 465-2700

March 4, 1986

The Honorable H. A. "Red" Boucher
House of Representatives
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Re: SSHB 466

Dear Representative Boucher:

In the course of reviewing SSSB 271 (Senator Josephson's local hire bill on natural resource projects), my staff has made a number of additional suggestions and comments regarding SSHB 466 which I would like to bring to your attention.

From an administrative standpoint, the Department of Labor would like to see SSHB 466 and SSSB 271 parallel each other as closely as possible, to avoid having to administer two different sets of preferences and procedures on local hire. While there are some differences between the public construction and the natural resource industries, we believe that a single, unified set of procedures, as well as a uniform definition of "residency", would not only be more efficient to administer but would also avoid confusion by the covered industries and the public.

In addition to the comments and language changes recommended in our previous position paper on SSHB 466 dated February 24, 1986, we offer the following comments and suggestions (which we have also made on SSSB 271):

1. In evaluating how the registration process would work under SSHB 466, the Department believes that the most efficient method of establishing a person's eligibility for a hiring preference would be through a self certification procedure similar to that used by the Department of Revenue in its administration of the permanent fund dividend program. Certification of eligibility by individual applicants and their prospective employers, under rules established

by the department, would greatly reduce the state's registration and processing burden and would also make registration easier for residents in rural areas. Each applicant would complete, under penalty of perjury, an application form developed by the Department; the prospective employer would then certify compliance with the eligibility criteria much the same way that employers previously certified the residency of their employees on public construction under AS 36.10.010. Any discrepancies or questions could be referred to the Department for auditing. The Department could thus concentrate its resources to monitoring compliance on an audit/exception basis similar to the permanent fund dividend program. In addition, stiff penalties should be included for persons making knowingly false statements in certifying eligibility for an employment preference.

Accordingly, we suggest that Sec. 36.10.140 be rewritten as follows:

(a) To be eligible for an employment preference under this chapter, a person must register as required by the Department of Labor.

(b) A person is eligible for an employment preference under this chapter if the person applies on a form approved by the Department, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered to find work with a public or private employment agency or a local hiring hall;

(3) is underemployed or marginally employed as defined by the Department; or

(4) has completed a job training program approved by the Department and is either not employed or is engaged in employment that does not use the skills acquired in the job training program.

(c) An employer subject to resident hiring requirements under this chapter shall certify that persons employed on projects subject to an employment preference are eligible for such preference in accordance with this chapter.

2. On page 4, line 29, delete "the average annual family income of residents of the area is below the adjusted poverty guidelines of the federal Department of Health and Human Services or that . . . ." Because average annual family income figures are determined only every 10 years while the federal poverty guidelines are updated annually, a comparison of the two measures would not be valid statistically.

3. Sec. 36.10.150(b)(4), Sec. 36.10.160(b)(3), and Sec. 36.10.170 (b)(4) all require a determination that the "employment of workers who are not residents of the area is a peculiar source of unemployment of residents of the area." (emphasis added) This language would require the Department to determine the impact of out-of-state workers on a local area but also the impact of other Alaskans who are not residents of the area. Such formulation would go beyond the parameters of our recent study and would significantly increase research and analysis costs, although the charge may be desirable from a legal standpoint. If at all possible, the Department would recommend deleting the term "of the area" from page 4, line 17; page 5, line 7; and page 5, line 28.

4. In keeping with our proposed system of self-certification by persons applying for an employment preference, we believe that SSHB 466 ought to contain severe penalties for making a knowingly false statement on application or certification forms. Perhaps the best place to include penalties would be in a new section 36.10.190 as follows:

   Sec. 36.10.190. PENALTIES. (a) A person who makes a false sworn statement in connection with a certification of eligibility for an employment preference under this chapter is subject to criminal prosecution for perjury as provided in AS 11.56.200.

   (b) A person who makes an unsworn falsification, with the intent to mislead a public servant in the performance of a duty, in connection with a certification of eligibility for an employment preference under this chapter, is subject to criminal prosecution as provided in AS 11.56.210.

(c) In addition to any criminal penalties imposed by state law, if a person is convicted of a crime in connection with a false statement made in a certification required under AS 36.10.140, and the conviction is not reversed, that person shall forfeit all future rights to eligibility for an employment preference under this chapter.

We believe that the inclusion of these additional items will improve our administration of SSHB 466. If you have any questions or other concerns regarding the bill please feel free to contact me or my staff.

Sincerely,

for Jim Robison
Commissioner

cc: House Judiciary Committee Members
Senator Joe Josephson
Ron Lorensen, Deputy Attorney General
Terry Cramer, Legislative Counsel

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

POUCH K – STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3600

February 28, 1986

The Honorable Arliss Sturgulewski
Chairman, Senate Resources Committee
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Re: SSSB 271, relating to certain natural resource projects on state land

Dear Senator Sturgulewski:

I am responding to your request of February 25, 1986 for our comments regarding SSSB 271, relating to employment preferences on certain natural resource projects on state land.

As you know, the Alaska Supreme Court recently issued its decision in Francis v. Robison, holding the state's resident employment preference on public construction projects (AS 36.10.010) invalid under the privileges and immunities clause of the U.S. Constitution. In its decision, the court identified two fundamental problems with the existing law:

> 1. In the court's view, unemployment among residents, even where it is the result of non-residents being hired in Alaska, is not a permissible justification for a resident hire clause. The court considers this to be impermissible economic discrimination. Before a resident preference can be upheld, there must be a substantial justification beyond the fact that Alaskans are unemployed. The court suggests (but does not decide) that a preference implemented "in order to stave off an economic or social collapse" might be permissible.
>
> 2. The scope of the preference provided by AS 36.10.010 was too broad, since it was available to Alaskans who already had jobs as well as to unemployed Alaskans.

While the provisions of SSSB 271 do address the second of these problems by extending the preference to certain "target groups" of Alaska residents (e.g. unemployed or underemployed

persons), I am concerned that it does not adequately deal with the first problem. Under the bill, the general employment preference established by proposed AS 38.45.040(b) applies whether or not it can be shown that unemployment among residents, which is caused by the hiring of non-residents, has led or threatens to lead to adverse social or economic consequences for the state or an area of the state. Also, the bill appears to provide the preference for any kind of employment activity on state land. Other than in the area of construction, there is probably not presently sufficient factual information available to support extending the preference to other employment sectors. I would recommend that both of these deficiencies be addressed.

With respect to technical changes that might improve the bill, I would offer two suggestions:

1. Under the bill as currently drafted, the special preference for economically distressed areas created by proposed AS 38.45.040(c) (p.4,l.7) is effective "during the three fiscal years following a determination by the commissioner of labor..." A literal reading of this language leads to the result that the preference will only take effect on July 1 of a particular year (the beginning of the first fiscal year following the commissioner's determination), even if the commissioner made his or her determination months earlier. Unless this result is intended, the language should be revised to make it clear that the preference takes effect immediately following a determination by the commissioner and remains in effect until the end of the third full fiscal year after that determination. Also, I would suggest reducing the period of applicability of the preference from three to two years, unless strong justification for such a long period of applicability is provided in the bill or in the legislative record.

2. Proposed AS 38.45.070(a) requires that all hearings other than those conducted by the Department of Labor under subsec. (b) are subject to the Administrative Procedure Act (AS 44.62). As the bill is presently drafted, this would mean that investigative hearings conducted by the Department of Labor under subsec. (c) would be subject to the APA. The APA procedure can be unnecessarily formal and cumbersome, particularly for hearings that are primarily investigative in nature. I would recommend that the bill be

revised to exclude Department of Labor hearings under subsec. (c) from APA coverage, as well.

3. Proposed AS 38.45.100, setting out applicable definitions, contains some potentially unclear provisions:

(a) The definition of "employer" can be read as applying only to persons (including affiliates, principals, contractors, etc) who are actually a party to a natural resource lease or agreement. I doubt this is the intended scope of the definition. I think this interpretation can be avoided by deleting the word "includes" on p.8, l.5 of the bill.

(b) "Natural resource project on state land" is defined as being a contract, lease, etc. This is at least confusing since "project" usually contemplates some kind of activity, whereas a "contract" or a "lease" is just a piece of paper with words on it. I would suggest adopting separate definitions for "natural resource lease or agreement" and "project" ("or natural resource project") and then using these terms, as applicable, in the bill.

I will plan to attend your committee's scheduled hearing on SSSB 271, Friday afternoon, February 28 in order to be available should you or any committee member have any further questions.

Sincerely yours,

HAROLD M. BROWN
ATTORNEY GENERAL

By:
Ronald W. Lorensen
Deputy Attorney General

RWL/glg
cc: The Honorable Joe Josephson
Alaska State Legislature

Honorable Jim Robison, Commissioner
Department of Labor

Terry Cramer, Attorney
Legislative Affairs Agency

Bill No. Sponsor Substitute for Senate Bill 271

Title "An Act requiring resident hire on certain natural resource projects on state land; and providing for an effective date."

Date February 28, 1986

Contact: Bob Landau
465-2700
Eileen Plate
465-2700

The Sponsor Substitute for Senate Bill 271 establishes resident hire requirements for employment on natural resource projects on state land.

Because of the beneficial impact of resident hiring on the work force and the Alaskan economy, the Department continues to strongly support the principle that qualified and available Alaska residents should be given employment preference on natural resource projects on land owned by the state. This is consistent with our view that the state should be entitled to remedy economic and social ills by giving preference to its own citizens in the development of the state's natural resources.

The sponsor substitute for SB 271 contains additional provisions which refine the employment preferences and make the bill more legally defensible. From an administrative standpoint, however, the Department would offer the following comments and recommended changes to the bill:

Sec. 38.45.020.

With respect to findings (4), (5), and (7), the Department does not have sufficient statistical information available to support any statements regarding the "trend" of nonresident employment. Our special study of nonresidents working in Alaska was essentially a one-time snapshot based on calendar year 1984. Considerable further research would have to be done before any employment "trends" could be identified and statistically supported. With respect to finding (8), although the Department's recent study identified levels of nonresident employment, wages, and unemployment benefits paid for all major industries in the state, it contained displacement information for the construction industry only. It would require additional time and resources to statistically demonstrate the displacement of Alaskan workers in natural resources or other non-construction industries.

Sec. 38.45.030.

The Department believes that the most efficient method of establishing eligibility for a hiring preference is through a certification procedure similar to that used by the Department of Revenue in its administration of the permanent fund dividend program. Certification of eligibility by individual applicants, together with verification by the prospective employer, would greatly reduce the state's registration and processing costs and would increase the accessibility of registration in rural areas. The Department could then devote its resources to monitoring compliance on an audit/exception basis, similar to the permanent fund dividend program. Stiff penalties should be added to Sec. 38.45.080 for making false statements in applying for an employment preference.

- combine support
- working on 271 + 466
- admin proc + proc. similar changes to streamline procedures (certification, audit)
- suggest

POSITION PAPER/Department of Labor

Accordingly, we suggest that Sec. 38.45.030 be amended to read as follows: (a) "A person is eligible for a hiring preference under this chapter if the person applies on a form approved by the department, is a resident, and

(1) is receiving unemployment benefits under AS 23.20 or would be eligible to receive benefits but has exhausted them;

(2) is not working and has registered with a public or private employment agency or local hiring hall;

(3) is underemployed or marginally employed as defined by the department; or

(4) has completed a job training program approved by the department.

(b) An employer subject to resident hire requirements under this chapter shall certify that persons employed on natural resource projects on state land are eligible for a hiring preference in accordance with this chapter."

Sec. 38.45.040.

Assuming that the Commissioner of Labor may be lawfully delegated the broad authority to establish resident hiring requirements under subsections (a) and (b), significant costs could be saved if the department were to administer the employment preferences by geographical areas and job classifications rather than on a project-by-project basis.

On page 4, line 6, the term "hire" should be changed to "employ".

It may be clearer to organize subsections (c), (d), and (e) into a separate section, with some explanation of how the "distressed area" local preference relates to the more flexible preference described in subsections (a) and (b).

On page 4, line 18, delete "the average annual family income of residents of the area is below the adjusted poverty guidelines of the federal Department of Health and Human Services or. . . ." Average annual family income figures are only determined every ten years whereas the poverty guidelines are updated annually, so a comparison of the two would not be valid statistically.

On page 4, line 23, subparagraph (2) should be changed to read: "Employment of workers who are not residents is a peculiar source of unemployment of residents of the area." This change will make it far less expensive to compile and provide statistical information on the impact of nonresidents on employment.

Sec. 38.45.080.

Civil and/or criminal penalties should be added for willful falsification of an eligibility application or employer certification.

Sec. 38.45.100.

The definition of "resident" should be consistent across all employment preference legislation. The department recommends that the basic residency definition contained in AS 01.10.055 be set forth or cross-referenced in subparagraph (4) of this section.

APPROVED:

Jim Robison, Commissioner
Department of Labor

Alaska State Legislature

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CHAIRMAN
Special Committee on
Telecommunications

MEMBER
Labor and Commerce
State Affairs
Finance—Subcommittee Administration

Representative H. A. "Red" Boucher

To: Mike M. Miller, Chairman
House Judiciary

From: Representative H. A. "Red" Boucher
Senator Jan Faiks

Date: February 26, 1986

Subject: Hearings on HB 466 and SB 367

You have no doubt heard about the recent Alaskan Supreme Court decision which struck down the Alaska resident hire law in the Francis case. HB 466 and SB 367, in the opinion of the Attorney General's Office, respond directly to the major objections the Court raised in regards to the current law.

We have been further advised that in order for a new Alaska resident preferential hire law to be put in place and be constitutionally defensible, it is not enough that we show there is high unemployment in Alaska. We have to obtain findings that show unemployment can lead to a host of social problems, such as alcoholism, suicide, poverty, violent crimes, broken homes and families, even insolvency and bankruptcy. Even more importantly, we need to obtain testimony that focuses on outsiders as being a "signficant contributing cause" of unemployment in Alaska, and on some other constitutional aspects as well.

We are further caught in a bind of trying to balance the problem of getting a new piece of legislation in place by the end of this session (which has to go through 4 to 6 Committees), against the problem of trying to obtain as much public testimony as possible for the record (so that we can demonstrate to any future court that we did indeed consider the constitutional problems raised).

We thus need to obtain both written (statements, publications, statistics) and spoken input on this issue of resident hire, and attempt in teleconferenced hearings to balance input from expert witnesses with input from private citizens chronicling their individual problems. We would appreciate it very much if you could attempt to strike this balance if your Committee is one of those holding hearings on these two bills.

A lot of the written and published material that is referred to by expert witnesses will not be obtainable until weeks later. We would like to therefore also request your indulgence in entering these various documents into the Committee hearing record as they come in and catch up to the Committee they are in, as they will be extremely critical in providing the basis for any future court cases on resident hire. This may even entail additional public teleconference hearings.

We respectfully request that we be allowed to work with your Committee towards meeting the above goals as the hearings on these bills progress.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

POUCH K – STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3600

February 26, 1986

The Honorable M. Mike Miller
Chairman of House Judiciary Committee
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Representative Miller:

Re: SSHB 466

I am responding to a request from Hayden Kaden of your staff for our comments regarding SSHB 466, relating to Alaskan resident employment preference.

As you know, the Alaska Supreme Court recently issued its decision in Francis v. Robison, holding the state's resident employment preference on public construction projects (AS 36.10.010) invalid under the privileges and immunities clause of the U.S. Constitution. In its decision, the court identified two fundamental problems with the existing law:

> 1. In the court's view, unemployment among residents, even where it is the result of non-residents being hired in Alaska, is not a permissible justification for a resident hire preference under the privileges and immunities clause. The court considers this to be impermissible economic discrimination. Before a resident preference can be upheld, there must be a substantial justification beyond the fact that Alaskans are unemployed. The court suggests (but does not decide) that a preference implemented "in order to stave off an economic or social collapse" might be permissible.
>
> 2. The scope of the preference provided by AS 36.10.010 was too broad, since it was available to Alaskans who already had jobs as well as to unemployed Alaskans.

The provisions of SSHB 466 address both of these problems. Under the bill, the employment preference would only go into effect after the Commissioner of Labor has made certain findings regarding the social or economic effects of unemployment among Alaska residents. Also, the preference would only extend to certain "target groups" of Alaska residents (e.g. unemployed or underemployed persons). Creation of a constitutionally valid resident employment preference remains an elusive goal for Alaska. While there are no certainties in this area of the law, I do feel that this bill is defensible and stands a reasonable chance of being upheld if challenged in the courts.

With respect to technical changes that might improve the bill, I would offer two suggestions:

1. Under the bill as currently drafted, the preferences created by proposed AS 36.10.150-170 are effective "during the two fiscal years following a determination by the commissioner of labor...". A literal reading of this language leads to the result that a preference will only take effect on July 1 of a particular year (the beginning of the first fiscal year following the commissioner's determination), even if the commissioner made his or her determination months earlier. Unless this result is intended, the language of secs. 150(a), 160(a), and 170(a) should be revised to make it clear that the preference takes effect immediately following a determination by the commissioner and remains in effect until the end of the second full fiscal year after that determination.

2. The language of sec. 10 (p. 7, l.29), dealing with the contracts to which the bill would apply, should be revised in light of Governor Sheffield's Administrative Order 88. I would suggest adding language along the following line to the end of the sentence: "and to contracts entered into before the effective date of this Act if the contract includes a provision requiring compliance with laws regarding the hiring of Alaska residents that might take effect during the term of the contract."

I will plan to attend your committee's scheduled hearing on SSHB 466, Wednesday afternoon, February 26, in order

to be available should you or any committee member have any further questions.

Sincerely,

HAROLD M. BROWN
ATTORNEY GENERAL

By: Ronald W. Lorensen
Deputy Attorney General

RWL/me

cc: The Honorable Red Boucher
Alaska State Legislature

The Honorable Jim Robison
Commissioner
Department of Labor

Arthur H. Peterson
Assistant Attorney General
Legislation/Regulations Section

Terry Cramer
Legislative Legal Counsel
Legislative Affairs Agency

Bill No. Sponsor Substitute for House Bill No. 466

Title "An Act relating to Alaskan resident employment preference; and providing for an effective date."

Date February 24, 1986

Contact: Bob Landau
465-2700
Chuck Caldwell
465-4500

The Sponsor Substitute for House Bill 466 would establish three new types of resident employment preferences on public construction projects to replace the current resident employment preference in AS 36.10.010 which has been found to be unconstitutional by the Alaska Supreme Court.

As the State agency charged with the administration and enforcement of resident hire preferences, the Department of Labor strongly supports the creation of these new employment preferences. The Department believes that because the new preference categories are much more narrowly focused than existing law, they stand a much better chance of being factually and legally supported in the event of a challenge. The preferences are specifically tailored to benefit only those unemployed and disadvantaged Alaskans who are most in need of employment.

Under this bill, the Department of Labor will have substantial research and enforcement responsibilities. In order to provide the necessary factual foundation to support each of the new employment preferences, the Department will have a continuing obligation to research and compile economic and statistical data on various aspects of employment and unemployment in Alaska. Because many of the criteria which would trigger application of the preferences cannot be substantiated with currently available information, the department's research staff will be required to go well beyond the bounds of its recent study on nonresidents working in Alaska.

Virtually all of the concerns noted by the Department in its earlier position paper on this bill have been addressed in the sponsor substitute. The only significant additional concern the department would raise at this time is the need to provide a clear and consistent definition of "resident" as used in the bill. The Department recommends that the basic definition of "residency" in AS 01.10.055 be used for the purposes of resident employment preferences. This definition could be easily referenced in AS 36.10.990, the definition section of the sponsor substitute; in addition, the present definition of "resident" in AS 36.95.010(5) could be repealed in section 11 of the bill.

The Department would also offer the following minor grammatical corrections and revisions to clarify certain sections of the bill:

AS 36.10.005(c) should be amended to read: "The legislature further finds that the ratio of employees on a certified payroll who did not apply for or were refused a permanent fund dividend under AS 43.23 to employees who were found eligible to receive a dividend is a reasonable but not exclusive indicator of the ratio of nonresident to resident employees on a public works project."

POSITION PAPER/Department of Labor

AS 36.10.005(d) should be amended to read: "When determining the ratio of nonresident to resident employees working on a public works project, the commissioner may consider information gathered from on-site surveys of public works projects, including individual interviews, questionnaires, examination of the state of registration of vehicles owned or operated by employees, and other information acquired from inspection of certified payrolls."

AS 36.10.005(e) should be amended to read: "The legislature finds that the following factors are reasonable but not exclusive indicators of the ratio of nonresident to resident employees in the state:

1) The ratio of applicants for unemployment insurance who list an out-of-state residence to applicants who list residences in the state;

2) The ratio of employees who are subject to unemployment insurance coverage and who did not apply for or were denied a permanent fund dividend to employees who were found eligible for a dividend."

Two fiscal notes are attached; one from the Administrative Services Division and one from the Labor Standards and Safety Division.

APPROVED:

Jim Robison

Jim Robison, Commissioner
Department of Labor

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : 2/10/86

REQUEST

Bill/Resolution No. : SS HB 466
Title : "An Act relating to Alaska resident employment preference..."

Sponsor : Boucher, Szymanski, ET al
Requestor : Labor & Commerce
Date of Request : 02/05/86

FISCAL DETAIL

Agency Affected : Labor
BRU : Administrative Services

Components : Special Services

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES		108.5	108.5	108.5	108.5	108.5
TRAVEL						
CONTRACTUAL		218.2	223.5	246.2	240.4	251.2
SUPPLIES		1.2	1.2	1.3	1.3	1.4
EQUIPMENT		4.0	.8	.9	.9	1.0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	331.9	334.0	356.9	351.1	362.1

CAPITAL						

REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		331.9	334.0	356.9	351.1	362.1
FEDERAL FUNDS						
OTHER						
TOTAL	0	331.9	334.0	356.9	351.1	362.1

POSITIONS :

FULL-TIME	0	3.0	3.0	3.0	3.0	3.0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Judy G. Knight

Prepared by : Judy G. Knight, Director
Division : Administrative Services
Phone : 465-2720
Date : 2/10/86

Approved by Commissioner : Jim Robison
Agency : Labor
Date : 2/10/86

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS HB 466

This legislation requires a resident hire report and other economic information for this department to make the determinations required by various sections of this bill. The assumptions are as follows:

1. A resident hire report would be completed biennially. The first report will be issued January 31, 1987.

2. On-going collection of occupational titles from employers, and subsequent computer matching to determine residency status.

3. Occupational information would be a primary feature of the annual report beginning in 1988, permitting more specific identification of the effect of nonresident employment on resident unemployment in Alaska. The provision of occupational titles assumes the department will continue to receive funding at the FY 86 level to provide core occupational information programs.

4. The collection of occupational titles from firms will be phased in over a three year period. Industries identified as having the highest dollar payments to nonresidents in 1984 would be targeted first:

   First Year - construction, oil and gas mining, and food processing;

   Second Year - all first year industries plus business services, local government, miscellaneous services, eating and drinking places, air transportation, and state government; and

   Third Year - all industries.

5. In addition to the occupational information, reporting of the residency status by industry and area would be necessary.

6. Section 36.10.170 (b)(3) would require special extraction of ZIP codes for all applicants of the Permanent Fund Dividend. We assume that the Department of Labor will be able to obtain that information from the Department of Revenue for further computer matching and conversion to census areas.

7. The department will be unable to obtain access to voter registration files.

8. No survey will be conducted to obtain information on a broader definition of unemployment by census area because the costs would be extremely high. This would mean no substantiation of 36.10.005 (f).

9. Substate average family income (A.S. 36.10.160 (b)(1)) is not available except from each decennial census. No attempt to prepare these estimates has been included into this fiscal note.

10. All minority demographic and economic information, except that required from contractors on state funded construction projects, will be derived from the decennial census. No costs are included for this in the fiscal note.

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS.HB 466

The contractual services costs are detailed as follows:

Description	FY 87	FY 88	FY 89	FY 90	FY 91
Key entry	$ 40.0	$ 60.0	$ 62.0	$ 64.0	$ 66.0
DP operations	120.0	135.0	150.0	153.0	156.0
DP applications	30.0	4.5	4.7	4.9	5.1
Printing	4.5	0	4.5	0	5.0
Phone (Toll service)	12.0	12.5	13.0	6.0	6.2
Equipment lease	8.0	8.3	8.7	9.0	9.4
Equipment maintenance	.8	.8	.9	.9	.9
Training, shipping, & misc.	2.9	2.4	2.4	2.6	2.6
	$218.2	$223.5	$246.2	$240.4	$251.2

Most ongoing costs are increased each year @4% inflation. Printing is budgeted biennially.

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : 2/11/86

REQUEST

Bill/Resolution No. : SS HB 466
Title : "An Act relating to Alaskan resident employment preference..."

Sponsor : Boucher, Szymanski, et al
Requestor : Labor and Commerce
Date of Request : 02/05/86

FISCAL DETAIL

Agency Affected : Labor
BRU : Labor Standards and Safety

Components : Wage and Hour

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL		114.8	101.7	105.8	110.0	114.4
SUPPLIES						
EQUIPMENT		46.5	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	161.3	101.7	105.8	110.0	114.4
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND	0	161.3	101.7	105.8	110.0	114.4
FEDERAL FUNDS						
OTHER						
TOTAL	0	161.3	101.7	105.8	110.0	114.4

POSITIONS :

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

See attached

Prepared by : Bob Baccias, Director
Division : Labor Standards and Safety
Phone : 465-4870
Date : 2/11/86

Approved by Commissioner : Jim Robison
Date : 2/11/86
Agency : Labor

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS HB 466

Currently the Division of Labor Standards and Safety (LS&S) receives weekly certified payroll documents for all public construction projects as required in AS 36. Under this bill the department will use the public construction certified payroll forms as source documents to determine the legal domicile of persons employed on public construction projects. In certain cases the department will also be scrutinizing the ethnic makeup of the employees to determine the utilization of minorities.

These certified payroll documents are now collected and summarized manually by the Division of Labor Standards and Safety. This fiscal note will fund the automation of the certified payroll documents. This will allow a more timely determination of residency status of persons employed on public construction projects. This automation will also assist in providing a list of employees with incomplete or questionable data. The existing investigative staff will then resolve the questionable items throughly personal contact with employees and employers.

Reports will be developed for the Research and Analysis Division to allow them to do crossmatch reviews with other data sources (e.g. Permanent Fund Dividend).

Specific costs are as follows:

Contractual Services

Professional fees for data entry	80.0
DP Applications/programming development (one time only $17.0)	20.0
DP Support (misc. chargeback)	3.0
DP Telecommunications	.8
Communications (phone and postage)	5.0
Equipment repair and maintenance	5.0
Other miscellaneous	1.0
	114.8

Equipment (one time only)

4 workstations	21.6
3 printers	5.4
3 modems	15.0
75 Mega byte disk pack	1.5
Telecommunication software	3.0
	46.5
Total	161.3

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. SS HB 466

A contract for data entry services will be required for entry of all payroll records into the new automated system.

Equipment upgrades and improved telecommunication links between Juneau, Fairbanks and Anchorage will allow online review and audit of certified payroll data in each location. The equipment will be a one time purchase. Other costs are projected to future years at 4% inflation.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y | STATE CAPITOL
JUNEAU ALASKA 99811
907-465-3800

M E M O R A N D U M February 18, 1986

SUBJECT: Sectional analysis of SSHB 466

TO: Representative Red Boucher

FROM: Teresa B. Cramer TBC
Legislative Counsel

You have requested a sectional analysis of SSHB 466, relating to Alaskan resident employment preferences.

Section 1 sets out the legislature's purpose for the bill.

Section 2 adds several subsections to the findings of fact that already exist in statute concerning the need for resident preference in employment. Subsection (c) addresses how to determine the ratio between residents and nonresidents on a project. Subsection (d) permits the commissioner to consider information gathered from the job site. Subsection (e) addresses how to determine the ratio between residents and nonresidents working in the state as a whole. Subsection (f) addresses the unreliability of unemployment statistics as a measure of Alaskans who are unable to find work.

Section 3 requires the Department of Labor to assist employers to locate qualified, eligible, employees and permits the department to approve the hiring of residents who are not eligible for a preference and nonresidents if there are insufficient qualified, eligible, available residents.

Section 4 requires the commissioner of labor to adopt regulations encouraging and requiring local hire to the maximum extent permitted by law.

Section 5 adds new sections to the chapter on employment preferences.

Sec. 36.10.130 requires the attorney general and the commissioner of labor to report biennially on employment in the state and to recommend methods to increase resident hire.

Sec. 36.10.140 requires registration before a person is eligible for a resident hiring preference and limits the preference to residents who are unemployed, underemployed or marginally employed, or graduates of job training programs who have not found appropriate work.

Secs. 36.10.150 - 36.10.170 establish various preferences for residents eligible under sec. 36.10.140. In all three, the preferences last for two years and apply to worker hours on a craft-by-craft basis on projects included in AS 36.10.180. In each case, before imposing the preference on a project in the area, the commissioner must find that workers who are not residents of the area are a peculiar source of the unemployment of area residents.

Sec. 36.10.150 establishes a resident hiring preference for underemployed areas of the state. The preference requires that work on a public works project wholly or partially sited within the area be performed by residents of the area. Subsection (b) sets the criteria that an economic region must meet to be considered an underemployed area. The commissioner may find that the state as a whole is an underemployed area.

Sec. 36.10.160 establishes a hiring preference for economically distressed areas of the state. The preference requires that 50 percent of the employment on a project wholly or partially sited within the area be performed by residents of the area. Subsection (b) sets the criteria that an area must meet to be considered an economically distressed area.

Sec. 36.10.170 establishes a preference for economically disadvantaged minority residents. The preference requires that 25 percent of the employment on a project wholly or partially sited within the area be performed by minority residents of the area. Subsection (b) sets the criteria for the preference. It applies to census areas where the civilian minority population exceeds the average civilian minority population for the state, civilian minority resident unemployment is twice as high as nonminority unemployment in the census area or the civilian minority population has suffered past economic discrimination, and

the economic disadvantage of minority residents has contributed to social or economic problems. Subsection (c) defines who is considered a member of a minority.

Sec. 36.10.180 defines the scope of projects to which the preferences under AS 36.10.150 - 36.10.170 apply. Subsection (a) applies the preference to the same kinds of projects covered by AS 36.10.010 and to grants to a municipality, a named recipient, and to an unincorporated community. Subsection (b) establishes that the preferences under AS 44.33.285 for residents of an area impacted by an economic disaster supercede the preferences under secs. 36.10.150 and 36.10.160. Subsection (c) directs the commissioner of labor to define the boundaries of regions and areas.

Sec. 36.10.900 is consistent with general state severability clause at AS 01.10.030 and requires that if a portion of the chapter is held invalid, then the rest of the chapter remains in force.

Sec. 39.10.990 defines "qualified."

Section 6 adds a definition of "craft" to the public construction title.

Sections 7 - 9 permit the Department of Labor to require grant recipients to comply with these resident hire requirements for employment generated by the grant.

Section 10 applies the Act to contracts entered on or after the effective date of the Act.

Section 11 repeals an obsolete definition of "qualified."

Section 12 repeals the current resident preference law.

Section 13 makes section 12 effective on the date that litigation on the current resident preference law is resolved.

Section 14 is an immediate effective date for the rest of the Act.

If I may be of further assistance, please advise.

TC:mkr
M3:043

Alaska State Legislature
House

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

January 31, 1986

Representative Red Bouch
P.O. Box V
Juneau, Alaska 99811

Dear Red,

As you know, I have in the past and continue to favor one comprehensive local hire bill over several piecemeal bills. With this in mind, I am going to attempt to amend the best piece of legislation offered to date. I will ask Labor & Commerce to amend HB466 in accordance with the attached.

I'd appreciate your support.

Yours truly,

Marco

Marco A. Pignalberi
MAP: drb

cc: Mike Navarre

Cramer

A M E N D M E N T

Offered in the HOUSE

By Pignalberi

TO: HB 466

Page 3, lines 17 - 18, delete "public works"

Page 5, line 18, delete "and"

Page 5, line 26, delete "." and insert "; and"

Page 5, after line 26, insert a new paragraph to read:

"(3) an oil or gas lease, a unitization agreement, or any renegotiation of a lease or agreement if the state is a party to the lease or agreement and the project is performed in whole or in part on state land."

Alaska State Legislature

POUCH V
JUNEAU, ALASKA 99811
(907) 465-4931

DISTRICT 10
BOX 111003
ANCHORAGE, ALASKA 99511
(907) 349-2192

CHAIRMAN
Special Committee on
Telecommunications

MEMBER
Labor and Commerce
State Affairs
Finance—Subcommittee Administration

Representative H. A. "Red" Boucher

M E M O R A N D U M

DATE: January 27, 1986

TO: Representative H.A. "Red" Boucher

FROM: Dave Donley, Attorney at Law

SUBJECT: HB 466 (a bill creating an Alaskan worker employment preference) and the effect of the recent Alaska Supreme Court decision on Alaska Hire (Francis v. Robinson)

GENERAL COMMENTS

Alaskans have been forced to wait almost two years for our Supreme Court to decide the constitutionality of AS 36.10.010 which provided a preference to Alaska residents on 95% of the jobs on public works projects.

Unfortunately, the Supreme Court's decision in Francis v. Robison finding AS 36.10.010 unconstitutional provided almost nothing new in the form of guidance to lawmakers. The court ignored both legislators' request for advice and last year's legislative action (HB 294) without explanation.

SSHB 466 addresses virtually every concern identified by the court's majority decision in Francis.

Nothing in this area of constitutional law is an absolute but these proposals are the best yet and are clearly legally superior to any resident hire law that has ever been tested or for that matter, even adopted, in the nation.

ANALYSIS OF THE IMPACT OF FRANCIS v. ROBISON ON HB 466

I. The Supreme Court accepted without comment the Superior Court's findings of fact.

A. Testimony on HB 294 (1985) and HCR 20 (1985) clearly contridicts these 1984 findings by the Superior Court.

B. The decision ingores existence of HB 294 -- makes no comment at all on its significance and effect or lack of it.

C. HB 294's backup and the recent DOL study appear to provide part of the factual basis the court says is necessary in the Francis decision. Additional findings based on evidence of social ills caused by resident unemployment need to be included in HB 466.

D. Additionally HB 466 adds new findings (page 1, sec. 2) which are designed to assist and guide the Commissioner of Labor and reviewing courts in making future fact findings.

E. Sec. 2 of HB 466 also helps identify the special employment problems of rural Alaska.

II. Resident preference law must have a substantial reason which justifies it.

A. Reason for any state mandated employment preference for residents can not be only to provide an economic advantage for residents over non-residents. Reason must be to correct a social ill or ills that result from resident unemployment.

B. The Francis decision requires "some showing that nonresidents are 'a peculiar source of evil' which state action is meant to remedy," and the Supreme Court finds this evidence lacking in the Superior Court's findings of fact.

C. The Supreme Court used the "clearly erroneous" standard for review of facts established by Superior Court. This very high standard of review prevented modification of these fact findings which, given newly available data, appear very erroneous.

D. HB 466 incorporates the "peculiar source of evil" standard as a threshold finding that must be made by Commissioner of Labor before any preference for residents goes into effect.

E. The new DOL study, HB 294 (1985), new findings of fact in HB 466 (sec.2), together with evidence of resulting social ills from resident unemployment, will create a new constitutional fact basis for the resident employment preference in HB 466.

F. Legislative public hearings are needed to carefully document evidence by testimony of specific examples of non-residents displacing residents and resulting social ills.

III. The means employed by the challenged statute must be closely related to the interests served by the statute.

A. In deciding whether discrimination bears a close or substantial relationship to the state's objective . . . the availability of less restrictive means is relevant.

B. This means the justification for legislation must not be just to give Alaskans jobs before outsiders. The reason for legislation

must be something else other than to benefit residents economically.

C. The U.S. Supreme Court, in it's Camden decision recognized one possible justification for resident employment preference is to stave off grave economic and social ills.

D. High unemployment alone is not enough: HB 466 answers this issue through findings of fact (sec. 2) but possibly needs strenthening to address the strong emphasis on this concern by the court by making clear that the purpose of the legislation is to address articulated economic or social ill(s).

E. "Closely related" means the State needs to limit preference to those Alaskans who really need it.

F. HB 466 limits the preferences by requiring those Alaskans who desire a preference to register as unemployed, underemployed or as recently completing job training. HB 466 also adopts a method to target unemployment preference to those geographical areas and social groups who need it the most: preference for residents of economically distressed areas; and preference for economically disadvantaged minority residents.

IV. Market Regulator vs. Market Participant Distinction

A. More leeway is granted states in their perception of "local evils and in prescribing appropriate cures" when they are acting in a proprietary capacity, where they are merely setting conditions on the expenditures of funds they control.

B. The Alaska Supreme Court in Francis adopts a sliding scale as to amount of deference appropriate to the state as a market participant. Little deference is appropriate when state action (discrimination against non-residents) is far reaching and greater deference is appropriate when state action is narrow in focus.

C. This implies that percentages or the scope of preferences may be important. HB 466 handles this by incorporating Rep. Gruenberg's proposal for a "judical decisions effect" savings clause.

D. This distinction also implies that it is important to separate contracts where the state is a signatory vs. others. HB 466 does this by including separate severable sections to cover expenditures by grantees and subcontractors.

V. Level of Scrutiny: "Low, intermediate and high"

An "intermediate level" of scrutiny is adopted under the facts found by the Superior Court in Francis. At this intermediate level of scrutiny classification/discrimination in favor of residents may be made only for "important" purposes and the

means used to accomplish them must be "fairly and substantially related" to achievement of those purposes.

VI. Miscellaneous

A. Distinguishes the U.S. Supreme Court's Camden decision -- Alaska economy growing while New Jersey's was not.

B. Disagrees with Wyoming's Supreme Court's Antonich decision reasoning which upheld Wyoming's resident preference law.

C. The Court says Alaskan unemployment is a rural and not an urban problem (HB 466 takes this into account in economic distressed area preference and disadvantaged minority preference.)

VII. The Concurring Opinion by Justice Burke

A. Justice Burke's solo concurring opinion cites the Alaska Constitution, Art. I, Sec. 1: "that all persons are equal and entitled to equal rights, opportunities, and protection under the law" as prohibiting a resident employment preference.

B. If necessary an amendment to the Alaskan Constitution can be designed to answer this concern.

CONCLUSIONS

1) The Francis case decision offers some guidance to preparation of a new Alaska Hire law but not directly -- it must be carefully extracted from implication, logic and reasoning.

2) HB 466 already directly addresses almost every fault the court found with the old law. With some careful fine tuning, HB 466 can cover every concern of the court except that raised by the concurring opinion regarding the Alaska Constitution.

3) A careful legislative process is needed to do this form of legislation correctly. Findings of fact must be substantiated on the record by testimony and/or evidence.

4) Additional severable sections may be added to HB 466 to cover jobs on state-owned lands based on the courts reasoning.

BILL SHEFFIELD
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

ADMINISTRATIVE ORDER NO. 88

Pursuant to my authority as Governor under article III of the Alaska Constitution, I find and direct as follows:

1. The historical and continuing high rate of unemployment among Alaska residents poses serious social and economic consequences that are chronic in nature. These consequences include, but are certainly not limited to, high rates of alcoholism, poverty, broken families, violent crimes, and personal and commercial insolvencies and bankruptcies.

2. A significant and contributing factor to this high rate of unemployment, particularly in certain industries such as construction, is the hiring by employers of non-resident workers, even though resident workers are available and qualified to perform the work.

3. The Alaska Supreme Court's recent decision in Francis v. Robison, No. 3011, January 17, 1986, held the state's present resident hire law (AS 36.10) to be unconstitutional and placed significant limitations on the state's ability to provide for resident hiring preferences.

4. The Alaska Legislature is presently considering a number of bills that would provide for certain hiring preferences for Alaska residents or targeted groups of Alaska residents. However, these measures might not be enacted and take effect until late in the Spring of 1986.

5. A number of state-funded public works projects will be put out to bid and may be awarded before the effective date of any new legislation that might be enacted to provide for certain hiring preferences for Alaska residents.

6. In order to maximize the coverage and benefits of any new resident hire legislation that might be adopted, it is in the public interest to ensure that all state-funded public works construction projects awarded and after the date of this administrative order and before the effective date of any resident hire legislation that might be enacted incorporate a provision securing the contractors' agreement and commitment to comply with any applicable resident hire

legislation that might subsequently take effect during the term of the contract.

7. Consequently, I direct that language that provides substantially as follows be included in any public works bid document issued or public works contract awarded by any state agency in the executive branch after the date of this order and before the effective date of any applicable resident hire legislation that might be enacted:

> Contractor shall comply with all applicable and valid laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this contract. In order to ensure that contractor's subcontractors will comply with all applicable laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect, contractor shall include in its contracts with subcontractors under this contract language that is substantially the same as the first sentence of this provision.

8. I also direct that language that provides substantially as follows be included in any grant to a municipality under AS 37.05.315 for public works, any grant to a named recipient under AS 37.05.316 for public works, and any grant to an unincorporated municipality under AS 37.05.317 for public works that is made after the date of this order and before the effective date of any applicable resident hire legislation that might be enacted:

> In carrying out the provisions of this grant, grantee shall comply with all applicable and valid laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this grant. Grantee shall require its contractors for the public works carried out under this grant to comply with all applicable laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this grant. Grantee shall also

require its contractors for the public works carried out under this grant to require their subcontractors to comply with all applicable laws and regulations regarding the hiring of Alaska residents now in effect or that might subsequently take effect during the term of this grant.

This Order takes effect immediately.

DATED at Juneau, Alaska this 17th day of February, 1986.

Bill Sheffield
Governor

Isenson
Associates

Research Report

PREFERENTIAL HIRE LAWS:

PRECEDENTS and IMPACTS

Prepared for

Representative Al Adams
Chairman

House Finance Committee
Alaska State Legislature

By Isenson Associates

Researched and Written by

Dave Donley

Attorney at Law

December 27, 1985

700 H Street, #1 • Anchorage, Alaska 99501 • (907) 276-4600

TABLE OF CONTENTS

U.S. Constitution 1

Alaska Law

1960 Alaska Hire Law AS 36.10.010-.090, Employment Preference 2

Alaska's 1972 "Local Hire Under State Leases" Law Amended in 1976 AS 38.40.010 - .090 2

Alaska's 1983 "Alaska Hire Law" Under State Leases," (SB 174), AS 36.10.010 Employment Preference 2

1985 Alaska Hire Law (HB 294), Sec. 1 Ch. 69, SLA 1985 Amendment of AS 36.10 3

Drafting History of HB 294 (1985) 3

U.S. Supreme Court Decisions 5

Hicklin v. Orbeck 437 U.S. 518 (1978) 5

The Camden Case: United Building & Construction Trades Council of Camden County and Vicinity v. Mayor and Council of City of Camden, et al. 104 Court 1020, 79 L. Ed. 2d 249 (1984) 6

Toomer v. Witsell 334 U.S. 385 (1948) 6

The White Case: White v. Massachusetts Council of Construction Employees. 460 U.S. 204 75 L. Ed. 2d 1 (1983) 7

Hughes v. Alexandria Scrap Corporation 426 U.S. 794 (1976) 8

Reeves Inc. v. Stake 447 U.S. 429 (1980) 8

Baldwin v. Fish and Game Commission of Montana, 436 U.S. 371 c(1978) 8

Federal Appeals Courts Decisions

W.C.M. Window Co. v. Bernardi 730 F. 2d 486 (1984) 10

Alaska Case Law

Francis v. Robinson
3AN 83-9969 11

Other States' Case Law

Wyoming v. Antonich
694 P. 2d. 60 (1985), January 10, 1985 12

Laborers Local Union No. 374 v. Felton
Construction, 654 P2d 67 (Washington 1982) 15

Legal Research

Constitutionality of Public Works Resident
Preference, Alaska Attorney General Opinion
June 17, 1982, File NO. J66-282-82. 16

Application of Local Hire Law to Susitna
Project Design Contract; State of Alaska,
Attorney General Opinion, NFile No. 366-481-83,
September 12, 1983 16

Landmark Reversals and Durational Residency
Cases of the U.S. Supreme Court; Alaska State
Legislature, House Research Agency Report,
April 15, 1983 16

Local Hire Laws In Other States; Alaska State
Legislature, House Research Agency Report,
March 15, 1985 17

Legislative Remedies for Rural Unemployment --
A Legal Analysis; A report to the Alaska State
Department of Labor by Goldberg and Associates,
September 7, 1984 17

Economic Research

Alaska State Department of Labor;
Weekly Updates on Alaska Hire 18

Minutes of the House Labor & Commerce
Committee on HB 294 and HB 295 Regarding
Alaska Hire, March 27, 1985 18

Minutes of the House Labor & Commerce
Committee on HB 294, HB 295 and HCR 20
Regarding Alaska Hire, April 1, 1985 18

Alaska Department of Labor Testimony Confirming Findings of Fact Contained in HB 294 (1985), Submitted to House Labor & Commerce Committee, April 1, 1985 19

Assessing The Economic Impacts of Capital Expenditures -- A Working Paper By Scott Goldsmith and Phillip Rowe, Institute of Social and Economic Research, University of Alaska for the Alaska Division of Policy Development and Planning, September 1982 19

Public Capital Formation In Alaska: Current Levels, Fiscal Effects, and Future Prospects By Scott Goldsmith, Dona Lehr and Phillip Rowe Institute of Social and Economic Research, University of Alaska, Anchorage for the Alaska Office of Management and Budget, August 1984 19

The Sustainable Level of Economic Activity in Alaska By Scott Goldsmith, associate professor of economics, Institute of Social and Economic Research, University of Alaska, Anchorage; Presented at the Western Regional Science Association Annual Meeting in San Diego, California February 28, 1985 20

Alaska's Economy Since Statehood: The Institute of Social and Economic Research MAP Economic Data Base, Alaska Review of Social and Economic Conditions, The Institute of Social and Economic Research, University of Alaska, February 1984 20

Economic Impacts of Capital Spending in Alaska Research Summary Institute of Social and Economic Research, University of Alaska. September 1984 20

Significance of State-Funded Public Works Projects in Alaska -- A letter from Oliver Scott Goldsmith, associate professor of economics, Institute of Social and Economic Research, University of Alaska, to Rep. Red Boucher, April 23, 1985 21

Resident and Nonresident Employment in Alaska By John Boucher, *Alaska Economic Trends*, Alaska Dept. of Labor, August 1985 21

News Articles and News Releases

Alaska Resident Hire: Lawmakers Seek to Strengthen Laws; Article in *The Capital Reporter*, March 29, 1985 22

News release by Rep. Red Boucher, Undated (March 15, 1985) 22

News release by Rep. Red Boucher, Undated (April 1985) 22

News release by Gov. William J. Sheffield, "Governor Sheffield announces adjournment plans", May 7, 1985 22

Proposed Legislation

CSHB 58 (Fisheries) (1985), A Bill by Rep. Adelheid Herman creating an investment tax credit for fish processors 23

SB 271 (1985), An Act requiring resident hire on certain natural resourceprojects on state land 23

Constitutional Aspects of SB 271 (1985), Resident Hire Under Oil and Gas Leases Letter by Deputy Attorney General Ron Lorenson, April 16, 1985 23

HCR 20 (1985) A resolution requesting the Attorney General and Commissioner of Labor report on ways to maximize local hire 24

Testimony of Rep. Marco Pignalberi re:HCR 20 Relating to Local Hire, House Labor and Commerce Committee, April 1, 1985 Juneau, Alaska 24

HB 295 (1985) 24

SB 235 (1985) 24

Appendix (the order of appended materials corresponds to the order of the summary)

U.S CONSTITUTION

1. **Privileges and Immunities Clause, Article IV, Sec. 2:**

   "The citizens of each state shall be entitled to all the privileges and immunities of citizens in the several States."

2. **Equal Protection Clause, 14th Amendment:**

   "No state shall ...deny any person within its jurisdiction the equal protection of the laws."

3. **Commerce Clause, Article I, Sec. 8, Clause 3:**

   "The Congress shall have power... to regulate commerce with foreign nations, and among the several states, and with Indian tribes."

ALASKA LAW

1960 Alaska Hire Law
AS 36.10.010-.090, Employment Preference

First Alaska Hire Law, which in AS 36.10.010 required 95 per cent resident hire for "performance of contracts let by the State." AS 36.10.020-.090 included guidelines for application and enforcement of the law and a monetary penalty for noncompliance.

AS 36.10.010 was apparently enforced with varying degrees of enthusiasm over the years. Both parties in the Hicklin case went to great lengths to circumvent any discussion of AS 36.10.010 and it was never challenged. Immediately following the Hicklin decision it seems AS 36.10.010 was not enforced. Former Attorney General Wilson Condon in a June 17, 1982 opinion, File No. J66-282-82, recommended that the statute be enforced and that such enforcement decisions be made subject to "independent budgetary restraints and not doubts as to the constitutionality of the law." But the opinion opened by saying: "The Hicklin decision has caused substantial uncertainty regarding the continued validity of AS 36.10."

In 1983 SB 174 amended AS 36.10.010.

Alaska's 1972 "Local Hire Under State Leases" Law
Amended in 1976
AS 38.40.010 - .090

The U.S. Supreme Court in Hicklin v. Orbeck 437 U.S. 518 (1978) reversed the Alaska Supreme Court and ruled the Act [specifically AS 38.40.030 (a)] as a violation of the Privileges and Immunities Clause of the U.S. Constitution.

The Act was subsequently removed from Alaska law.

Alaska's 1983 "Alaska Hire Law" (SB 174)
AS 36.10.010 Employment Preference

During the 1983 legislative session in response to the White v. Mass. Council of Construction Employers case (White), 460 U.S. 204 (1983), Sen. Joe Josephson introduced SB 174 amending AS 36.10.010 (the 1960 Alaska Hire Law).

The purpose of SB 174 was to strengthen AS 36.10.010 by using the guidelines provided by the U.S. Supreme Court in the White case. The first version of SB 174, like the ordinance in the White case, required 50 per cent resident hire. A sponsor substitute, SSSB 174 raised the percentage requirement to that of the 1960 law, 95 per cent.

SSSB 174 passed the legislature with a fiscal vote providing Alaska Hire enforcement officers to the Department of Labor's budget for the first time since 1978.

1985 Alaska Hire Law (HB 294)

Sec. 1 Ch. 69, SLA 1985
Amendment of AS 36.10

Sponsored by Rep. Red Boucher, this legislation added legislative findings of fact, a statement of purpose and a statement of State policy regarding Alaska Hire to the existing 1983 law.

HB 294 incorporated case law on the subject of local hire which had occurred since passage of the 1983 law (including Wyoming v. Antonich and Camden).

HB 294 contained a clause making its effect retroactive to the date of passage of the 1983 law.

Based on HB 294's improvements to the 1983 law, the Attorney General's office entered into a settlement agreement in the Francis case which would have allowed the state to continue to enforce AS 36.10.010 requiring Alaska Hire. The Alaska Supreme Court refused to allow this settlement agreement.

Drafting History of HB 294 (1985)

Memo from Dave Donley to Rep. Max Gruenberg suggesting HB 294 and HB 295, February 24, 1985.

Letter from Deputy Commissioner of Labor Bob Landau to Rep. Red Boucher re: HB 294 suggesting terminology change from "in-migration" to "influx," May 3, 1985.

Memo from Dave Donley to Rep. Red Boucher suggesting minor changes in HB 294, May 1, 1985.

Memo from Billy Berrier, director of the division of legal services, Legislative Affairs Agency, to Rep. Red Boucher suggesting terminology change from "royalty" to "natural resources income," April 22, 1985.

Memo from Legislative Counsel Teresa Cramer to Rep. Max Gruenberg re: retroactive clause in HB 294, March 26, 1985.

Proposed letter of intent by House Judiciary Committee re: HB 294 and Committee agenda indicating letter of intent unnecessary,
April 12, 1985. Comment: Clearly indicates Legislature was aware HB 294 Findings of Fact conflicted with the Francis case.

U.S. SUPREME COURT DECISIONS

Hicklin v. Orbeck
437 U.S. 518 (1978)

Lawsuit brought by Alaska nonresidents challenging the constitutionality of Alaska's 1972 "Local Hire Under State Leases" Act (AS 38.40.010-.090).

That Act, enacted in 1972, professedly for the purpose of reducing unemployment within the state, required that all Alaskan oil and gas leases, easements or right-of-way permits for oil and gas pipelines and utilization agreements contain a requirement that qualified Alaska residents be hired in preference to nonresidents.

The Alaska Superior Court in Hicklin v. Orbeck upheld the statute. The Alaska Supreme Court affirmed except for that part of the Act that contained a one year residency requirement, which it held invalid.

The U.S. Supreme Court reversed the Alaska Supreme Court and ruled the Act a violation of the Privileges and Immunities Clause of the U.S. Constutition. That clause places the citizens of each state upon the same footing with the citizens of other states so far as the advantages resulting from citizenship are concerned. Though the clause does not always preclude disparity of treatment when valid independent reasons exist for it, it does bar discrimination for no reason other than a person is a citizen of another state. See Toomer v. Witsell 334 U.S. 385, 396 and Mullaney v. Anderson. [342 U.S. 415 Pp. 525-526]

The Court found:

> No showing was made that nonresidents were a "peculiar source of the evil" (unemployment)
>
> The Act made no distinction between employed and unemployed Alaskans.
>
> The Act's effects were overbroad including workers who had no connection with the State's oil and gas or the States's land.
>
> Because oil and gas are bound for out-of-state consumption, the Commerce Clause limits such discrimination.

Comment: This decision contains many arguably racist statements commenting on the employability of Alaska's Native popuiation.

The Camden Case

United Building & Construction Trades Council of Camden County and Vicinity v. Mayor and Council of City of Camden, et al

104 Court 1020, 79 L. Ed. 2d 249 (1984)

In 1984, in the case of United Building & Construction Trades Council of Camden County and Vicinity v. Mayor and Council of City of Camden et al, USSC 81-2110, February 21, 1984, the United States Supreme Court reversed a New Jersey Supreme Court decision. The U.S. Supreme Court held that the Privileges and Immunities Clause of Article IV of the Federal Constitution did not apply to municipal ordinances creating preferential hire for local residents.

By municipal ordinance, the City of Camden, New Jersey requires subcontractors working on city construction projects be Camden residents. The Court held that such ordinances are properly subject to the strictures of the Privileges and Immunities Clause.

The Court ordered that on remand, the determination of whether the Camden ordinance violates the Privileges and Immunities Clause should be made under the appropriate constitutional standard which requires determination of whether the ordinance burdens one of those privileges and immunities protected by the clause and if so, whether there is substantial reason for the discrimination against citizens of other States. However, the U.S. Supreme Court found it impossible from the record, as it was presented to the Court, to evaluate Camden's contention that it's ordinance was carefully tailored to counteract specified economic and social ills: the unemployment of State residents and a sharp decline in the city's population. On remand, the U.S. Supreme Court recognized that the New Jersey Supreme Court may decide, consistent with State procedures, on the best method for making the necessary Findings of Fact.

The fact that a state or municipality is expending its own funds or funds it administers in accordance with the terms of a grant was stated by the Court to be a factor, perhaps a crucial factor to be considered in evaluating whether the ordinance or statute's discrimination violates the Privileges and Immunities Clause.

Comment: The 1983 Alaska Hire Act was drafted before the Camden decision and so did not benefit from the Court's guidance in the drafting process.

Toomer v. Witsell

334 U.S. 385 (1948)

U.S. Supreme Court held that a South Carolina law requiring nonresidents to pay $2,500 for a fishing permit that cost residents $25 was a violation of the

Privileges and Immunities Clause of Article IV, Sec. 2. Cited by the U.S. Supreme Court in Hicklin as "the leading modern exposition of the limitations the (Privileges and Immunities) Clause places on a state's power to bias employment opportunities in favor of its own residents..." [437 U.S. at 525]

Cited by Alaska Superior Court in Hicklin as recognizing a "national resources exception" to the Privileges and Immunities Clause which it defined as "the principle that a State may prefer its residents in dealing with natural resources it owns." [565 P.2d at 169]

The White Case

White v. Massachusetts Council of Construction Employees

460 U.S. 204 75 L. Ed. 2d 1 (1983)

Basis for 1983 Alaska Hire Law (SB174), which amended AS 36.10.010. U.S. Supreme Court held that an executive order by the Mayor of Boston requiring 50 per cent local resident hire on all construction projects funded by city or city administered funds did not violate the Commerce Clause.

In this case the U.S. Supreme Court held that the City of Boston's resident work force preference (requiring employment of at least 50 per cent bona fide residents of Boston on construction projects funded in whole or in part by the city) did not violate the Commerce Clause of the U.S. Constitution. The Court reasoned that Boston was a market participant rather than a market regulator, entitled to favor its own citizens over others while acting in a proprietary manner. The Court noted that the record did not support a finding that the preference would have a "significant impact" on firms employing out-of-state residents.

The Court recognized the "market participant" exception to the Commerce Clause citing the Hughes and Reeves cases. The Court stated the rule as:

[W]hen a State or local government enters the market as a participant it is not subject to the restraints of the Commerce Clause. As we said in Reeves, in this kind of case there is a "single inquiry: whether the challenged 'program constituted direct State participation in the market.'"

Under White Alaska can favor its own citizens while acting as a market participant without violating the Commerce Clause. Measures that required others to favor Alaskans over out-of-state residents would be subject to Commerce Clause and Privileges and Immunities prohibitions. White and Hicklin v. Orbeck, [437 U.S. 518 (1978)]

Hughes v. Alexandria Scrap Corporation
426 U.S. 794 (1976)

Along with Reeves Inc. v. Stake 447 U.S. 429 (1980), recognizes the "market participant" exception to the Commerce Clause. The U. S. Supreme Court held that a Maryland law requiring extra paperwork by out-of-state scrap disposers, to collect a State "bounty" for its destruction of junk cars was not a violation of the Commerce Clause. The Court stated that "[n]othing in the purposes animating the Commerce Clause prohibits a state, in the absence of congressional action, from participating in the market and exercising the right to favor its own citizens over others." [426 U.S. at 810, quoted in 75 L. Ed. 2d at 5] The Court stated the rule as follows:

[W]hen a State or local government enters the market as a participant it is not subject to the restraints of the Commerce Clause. As we said in Reeves, in this kind of casethere is a "single inquiry: whether the challenged 'program constituted direct State participation in the market.'"

Reeves Inc. v. Stake
447 U.S. 429 (1980)

Along with Hughes v. Alexandria Scrap Corp. 426 U.S. 794 (1976) recognizes the "market participant" exception to the Commerce Clause. The U.S. Supreme Court held that South Dakota's policy, during periods of cement shortage, of confining sales of state-produced cement to South Dakota residents did not violate the Commerce Clause.

Baldwin v. Fish and Game Commission of Montana
436 U.S. 371 c(1978)

The U.S. Supreme Court ruled that a Montana statutory elk hunting license scheme which requires nonresidents to pay over seven times as much as residents, was not a violation of the Privileges and Immunities Clause of Article IV Sec. 2 or the Equal Protection Clause of the 14th Amendment.

The Court held that:

> Access by nonresidents to recreational big-game hunting in Montana does not fall within the category of rights protected by the Privileges and Immunities Clause. Only with respect to those "privileges" and "immunities" bearing upon the vitality of the

Nation as a single entity must a State treat all citizens, resident and nonresident, equally, and here equality in access to Montana elk is not basic to the maintenance or well being of the Union. [Pp. 378-388]

The statutory scheme is an economic means not unreasonably related to the preservation of a finite resource; elk, and a substantial regulatory interest of that State, and hence does not violate the Equal Protection Clause. In view of the fact that residents contribute to the costs of maintaining the elk hunting program, the great increase in nonresident hunters in recent years, the limit in the elk supply, and the diffuculties in supervising hunting practices, it cannot be said that either the license fee differentials or the required combination license for nonresidents is irrational. [Pp. 388-391]

FEDERAL APPEALS COURTS DECISIONS

W.C.M. Window Co. v. Bernardi

730 F. 2d 486 (1984)

Recent Seventh Circuit Court of Appeals case which overturns an Illinois preference law as violating the Privileges and Immunities Clause. The Court considered the White, Camden and Hicklin cases in its decision.

The Court noted that *Illinois had offered no evidence* of the benefits of a residents' preference law in dealing with a problem created by nonresidents and suggested the kind of evidence needed to meet a challenge under the Privileges and Immunities clause.

The Court explained:

> We are not told the unemployment rate in Illinois' construction industry, what such unemployment costs the State, whether it would be significantly increased by throwing open public construction projects to nonresidents (which might just cause a reshuffling of jobs between public and private projects, and whether the costs -- if any -- to Illinois of allowing nonresident labor on such projects, costs in higher unemployment or welfare benefits paid unemployed construction workers or their families, are likely to exceed any cost savings in public construction from hiring nonresident workers.

ALASKA CASE LAW

Francis v. Robinson

3AN 83-9969

Beginning in 1983 the Alaska Department of Labor enforced the newly revised AS 36.10.010. In early 1984 this civil lawsuit against the State of Alaska was brought by nonresident ironworker, Francis, challenging the constitutionality of AS 36.10.010. On May 23, 1984 the Superior Court ruled in favor of Francis based on the Privileges and Immunities Clause of the U.S. Constitution and its Findings of Fact.

Two months later the Alaska Supreme Court at the request of the State, stayed the effect of the Superior Court's decision pending appeal by the State. This allowed the State to continue enforcing AS 36.10.010 until July 10, 1985 when the Court lifted the stay. The Court made no statement in lifting the stay.a

During the 1985 session the legislature passed HB 294 which added Findings of Fact, Policy and Purpose clauses to AS 36.10.010 in an attempt to improve the law's chances in a Court challenge.

The Attorney General then reviewed the Legislature's action and advised the Governor: "By identifying the purpose of resident hiring preference and by supporting the purpose with factual findings, this bill may provide the justification for the state statute found lacking by the Superior Court."

The State asked that the Supreme Court send the case back to the Superior Court, where the revised statute could be considered. That motion was denied.

A Supreme Court decision is expected in late 1985 or early 1986.

OTHER STATES' CASE LAW

Wyoming v. Antonich

694 P. 2d. 60 (1985), January 10, 1985

During the last half of 1984 the Wyoming Supreme Court considered a constitutional challenge to Wyoming's Preference Act. That act is very similar to AS 16.10.010, except that it requires 100 per cent Wyoming resident hire on public works projects, whereas AS 16.10.010 only requires 95 per cent Alaska resident hire.

The Wyoming Preference Act says in part:

> Every person who is charged with the duty of construction, reconstructing, improving, enlarging, altering or repairing any public works project or improvement for the State or any political subdivision, municipal corporation, or other governmental unit, shall employ only Wyoming laborers on the project or improvement. Every contract let by any person shall contain a provision requiring that Wyoming labor be used except other laborers may be used when Wyoming laborers are not available for the employment from within the State or are not qualified to perform the work involved. The state employment office nearest the proposed contract or construction site shall maintain a list of laborers, classified by skills, who are residents and are available for employment. When the nearest state employment office is unable to provide the requested number of laborers from its own list, it shall immediately contact other state employment offices and request the names of other available laborers. Every person required to employ Wyoming laborers shall inform the nearest state employment office of his employment needs. If the state employment office certifies that the person's need for laborers cannot be filled from those listed as of the date the information is filed, then the person may employ other than Wyoming laborers."

As with the Alaska law, the Wyoming Preference Act had been found an unconstitutional violation of the Privileges and Immunities Clause of the U.S. Constitution by a lower State Court.

The Wyoming Supreme Court, looking toward the U.S. Supreme Court's decision in Camden, reversed its lower Court and found the Wyoming Preference Act constitutional. The State conceded that the discrimination against nonresidents under the Wyoming Preference Act burdened a fundamental right protected by the Privileges and Immunities Clause, as it protects the right of a citizen of one State to travel to another State for purposes of employment. But despite the Act's infringement upon a recognized fundamental right, the Wyoming Supreme

Court found it does not violate the U.S. Constitution *because of its narrow focus.* The Court held that the Act merely requires that state funds allocated for public works projects be used to hire qualified, available residents in preference to nonresidents, and *"Since the degree of discrimination bears a close relation to the State's valid reasons for discriminatory treatment, we affirm the Act's validity..."*

Chief Justice Thomas, concurring, stated:

> "I am satisfied that on the basis of existing precedent, the role of the State in connection with constructing, reconstructing, improving, enlarging, altering or repairing any public works project or improvement for the State or any political subdivision, municipal corporation or other governmental unit is that of a market participant pursuing essentially a *proprietary function.* It is inappropriate to invoke the Privileges and Immunities Clause to inhibit the State in that regard. Both Hicklin v. Orbeck, 437 U.S. 518 ... and United Building and Construction Trades Council of Camden County and Vicinity v. Mayor and Council of the City of Camden ... recognize that while the proprietary interest of the State in the property with which the statute deals is often a crucial factor in determining whether a discriminatory statute against noncitizens violates the Privileges and Immunities Clause, I perceive that, without articulating such a concept, the Supreme Court of the United States has preserved a delicate balance between the Reservation of Powers Clause found in Amendment X to the Constitution of the United States of America and the Privileges and Immunities Clause. The line that is drawn is that between the right of the State to participate in the marketplace, satisfy its proprietory functions, and contract freely with those with whom it chooses to contract."

Loyalty to State Citizens

Continuing, Chief Justice Thomas says:

> It cannot be held objectionable for a sovereign State to adopt legislation which provides in essence that to the extent possible public works contracts benefit the citizens of the State whose contributions to the public treasury fund those projects. A State should not be foreclosed by the invocation of the Constitution of the United States of America from loyalty to the interests of its own citizens. So long as a statute is narrowly drawn to protect only the right of the State to contract as it sees fit with respect to expenditures for public works projects which it owns and which it funds, I am satisfied that as a matter of law such a statute does not offend the Privileges and Immunities Clause...

The Caveat in Antonich: Beware the Lack of Nexus

The Wyoming Supreme Court, unlike the drafters of Alaska's 1983 SSSB 174, had the Camden decision from which to base a prediction of the response of the U.S. Supreme Court to such State preferential hire laws. The majority of the Wyoming Supreme Court seemed contented that a sufficient nexus existed between the presence of nonresident workers on Wyoming public works projects and unemployment of Wyoming residents from the bare fact that unemployment existed in Wyoming.

The Court reviewed no evidence that out of state workers were the cause of Wyoming's unemployment problems or even that Wyoming had an unusually high rate of unemployment. Rather, the Court identified the goal of the Wyoming law as not the eradication of general unemployment, but rather:

> ...to prevent a qualified Wyoming worker's remaining unemployed while a nonresident goes to work on a government funded construction project. [Antonich, p. 5]

To satisfy the requirement pronounced in Camden of narrowly and specifically addressing the pronounced problem, the Wyoming Court relied on the statutory language requiring that only *qualified* Wyoming residents need be hired. If no qualified residents are available, nonresidents can be hired so as to minimize the law's discriminatory aspects.

The weaknesses in these arguments are apparent and Wyoming Chief Justice in a specially concurring decision recognizes the key deficiency -- *the lack of nexus between out-of-state workers and Wyomings's unemploymer problem.*

> I am in complete accord with the result reached by the majority in this case, but I have a concern about the adequacy of the record to support the nexus between the evil of a qualified Wyoming worker's remaining unemployed while a nonresident goes to work on a government funded construction project' and the statute in question. I agree that is a possibility, but the record does not demonstrate it. [Antonich, p. 1 of the concurring opinion]

Chief Justice Thomas goes on to comment:

> The statutory language simply makes the state employment offices a repository of information, and does not limit the "list of laborers, classified by skills. who are residents" to the unemployed. It simply requires that they be "available for employment." [Antonich, supra]

Only after noting these reservations did Chief Justice Thomas go on to make some of the most convincing arguments for the constitutionality of such resident preference laws: the right of States to freely perform proprietary functions and their duty of loyalty to their own residents. It might appear that

Chief Justice Thomas was pointing out his serious misgivings with lack of nexus to make his best arguments appear to directly respond to and negate this possibly fatal weakness.

Laborers Local Union No. 374 v. Felton Construction

654 P2d 67 (Washington 1982)

Washington Supreme Court ruled Washington statute requiring 90 to 95 per cent resident hire on public works projects violated the Privileges and Immunities Clause.

Court found the *State made no showing* of existence of valid independent reason for discriminating against nonresidents, that nonresidents were a particular source of evil or that there was a reasonable relationship between danger represented by nonresidents as a class and the discrimination practiced against them.

LEGAL RESEARCH

Constitutionality of Public Works Resident Preference

Alaska Attorney General Opinion
June 17, 1982 File NO. J66-282-82.

In response to a request from Commissioner of Labor Ed Orbeck, the Attorney General issued this official opinion calling for the enforcement of AS 36.10.010:

It examines the relation between the Hicklin case and AS36.10.010 and the Privileges and Immunities Clause and concludes that while "the Hicklin decision has caused substantial uncertainty regarding the continued validity of AS 36.10.010" *the statute should be enforced* subject to "independent budgetary restraints and not doubts as to the constitutionality of the law."

Application of Local Hire Law to Susitna Project Design Contract

State of Alaska Attorney General Opinion
File No. 366-481-83, September 12, 1983

Examines AS 36.10.010 as amended in 1983, provides overview of employment preference case law, comments on Alaska's bidder preference law AS 37.05.230 and concludes AS 36.10.010 requires Alaska hire for design of Susitna project.

Landmark Reversals and Durational Residency Cases of the U.S. Supreme Court

Alaska State Legislature, House Research Agency Report
April 15, 1983

Provides summaries of the following U.S. Supreme Court decisions:

> opinions which have reversed the Court's own stance on an issue.
>
> opinions regarding the constitutionality of durational residency requirements.

Comment: Provides important insight into how and why the U.S. Supreme Court changes its stand on an issue and sets out how the Court has considered when residency requirements "rationally further a legitimate State purpose."

Local Hire Laws In Other States

Alaska State Legislature, House Research Agency Report
March 15, 1985

Copies of local hire laws of 19 States (including Alaska) and a short analysis.

Comment: Alaska's preferential hire laws appear much more sophisticated and legally defensible than the majority of such laws in other States.

Legislative Remedies for Rural Unemployment
A Legal Analysis

A report to the Alaska State Department of Labor by Goldberg and Associates, September 7, 1984

Report Commissioned by the Alaska State Department of Labor to study legislative options for dealing with the unemployment problem in rural areas.

Contains a review of preferential hire laws and legal authority, Federal programs, minority preference and programs in other jurisdictions.

Because of the contemporaneous Francis v. Robison case this report intentionally avoids direct considera on of options involving AS 36.10.010 and Alaska Hire in general.

Alaska State Department of Labor
Weekly Updates on Alaska Hire

In response to the interest in Alaska Hire shown by the 1985 Legislature, the Department of Labor now provides the Governor's office and interested parties a weekly progress report on the status of enforcement (whether mandatory or voluntary) of Alaska Hire (AS 36.10.010) and research in process.

Minutes of the House Labor & Commerce Committee on HB 294 and HB 295 Regarding Alaska Hire
March 27, 1985

Contains testimony of Lt. Gov. Steve McAlpine, Sen. Joe Josephson, Deputy Attorney General Ron Lorenson, Deputy Commissioner of Labor Robert Landau and Dave Donley, attorney, in support of HB 294 and HB 295.

Minutes of the House Labor & Commerce Committee on HB 294, HB 295 and HCR 20 Regarding Alaska Hire
April 1, 1985

Contains testimony of Chuck Caldwell, Research Chief of Alaska Department of Labor; Dave Donley, attorney; Deputy Commissioner of Labor Robert Landau; Rep. Marco Pignalberi; John Abshire, Iron Workers Union; Mano Frey, president, Alaska State AFL-CIO; and Barry Haight, president, Fairbanks Central Labor Council.

Comment: Caldwell testimony regarding verification of Finding of Fact in HB 294 is very important as it directly contradicts some of the Superior Court's Findings of Fact in the Francis case.

Alaska Department of Labor Testimony Confirming Findings of Fact Contained in HB 294 (1985)

Submitted to House Labor & Commerce Committee, April 1, 1985

Testimony generally confirms the 18 Findings of Fact contained in HB 294 (1985).

Comment: This is very important evidence in support of the economic basis to constitutionally justify resident preference in AS 36.10.010 or future such laws. Directly contradicts some of the Superior Courts Findings of Fact in the Francis case.

Assessing The Economic Impacts of Capital Expenditures -- A Working Paper

By Scott Goldsmith and Phillip Rowe
Institute of Social and Economic Research, University of Alaska
for the Alaska Division of Policy Development and Planning
September 1982

Reports on work by the Institute on developing methods for determining the impact of State capital spending on the Alaskan economy and public sector finances. While the economic impact of capital spending varies with the type of project, the report concludes that a multiplier effect of about 1.458 exists or that for each $1 million in capital spending, $1.458 million of economic activity is generated.

Comment: Provides a basis of economic and political arguments in favor of Alaska Hire. Not particularly useful in legal analysis. [Copies available from the University of Alaska, Institute of Social and Economic Research, Anchorage]

Public Capital Formation In Alaska: Current Levels, Fiscal Effects, and Future Prospects

By Scott Goldsmith, Dona Lehr and Phillip Rowe
Institute of Social and Economic Research,
University of Alaska, Anchorage
For the Alaska Office of Management and Budget
August 1984

This report deals with the fiscal effects of capital spending, examining the relationships between particular types of capital projects and the demands which those projects place on the budget of the State in subsequent years.

[Copies available from the University of Alaska, Institute of Social and Economic Research, Anchorage]

Comment: Provides a basis of economic and political arguements in favor of Alaska Hire. Not particularly useful in legal analysis.

The Sustainable Level of Economic Activity in Alaska

By Scott Goldsmith, associate professor of economics
Institute of Social and Economic Research, University of Alaska, Anchorage
Presented at the Western Regional Science Association
Annual Meeting in San Diego, California
February 28, 1985

The paper explores the relation between state spending and economic growth, how the economy might respond to budget reductions, and factors which may help to sustain the economy after Prudhoe Bay production declines.

Alaska's Economy Since Statehood: The Institute of Social and Economic Research MAP Economic Data Base

Alaska Review of Social and Economic Conditions, February 1984
The Institute of Social and Economic Research, University of Alaska

Most comprehensive collection of economic data then available on Alaska's economy. Record of Alaska's economic activity since statehood.

Comment: General economic backup of economic evidence supporting Alaska Hire legislation.

Economic Impacts of Capital Spending in Alaska

Research Summary
Institute of Social and Economic, September 1984

Summarizes research on the direct, indirect and induced effects of particular construction efforts on Alaska's economy measured in terms of employment, wages, personal income, value added and output.

Concludes that general government expenditures have significantly greater economic impacts than do capital expenditures.

Significance of State-Funded Public Works Projects in Alaska

A letter from Oliver Scott Goldsmith, associate professor of economics, Institute of Social and Economic Research, University of Alaska; to Rep. Red Boucher, April 23, 1985.

Written testimony submitted regarding HB 294 (1985). Explains the proportion of construction activity in Alaska that is attributable to state expenditures. Concludes that for 1984 35-40% of all construction activity in Alaska is attributable to state expenditures.

Resident and Nonresident Employment in Alaska

By John Boucher

Alaska Economic Trends, Alaska Dept. of Labor, August 1985

The article highlights some of the roots of the resident hire issue and recent developments. It contains a brief explanation of some of the preliminary work done by the Department of Labor's Research and Analysis Division in 1985 that pertains to resident hire.

NEWS ARTICLES AND NEWS RELEASES

Alaska Resident Hire: Lawmakers Seek to Strengthen Laws

Article — The Capital Reporter, March 29, 1985

Good, short overview of the history of Alaska Hire laws, the 1985 legislation regarding AS 36.10.010 (HB 294 and HB 295) and the constitutional problems with resident preference laws.

News release by Rep. Red Boucher

March 15, 1985

This release deals with Alaska hire legislation, specifically HB 294 and HB 295 in the 1985 session.

News release by Rep. Red Boucher

Undated (April 1985)

This release deals with passage by the House of HB 294 and HB 295.

News release by Gov. William J. Sheffield

"Governor Sheffield announces adjournment plans"
May 7, 1985

In this news release, the administration lists HB 294 and HB 295 as among its priority legislation.

PROPOSED LEGISLATION

CSHB 58 (Fisheries) (1985)

A Bill by Rep. Adelheid Herman creating an investment tax credit for fish processors

Consideration was given to including an Alaska Hire requirement as a condition to the availability of a proposed tax credit.

SB 271 (1985)

An Act requiring resident hire on certain natural resource projects on state land

Sponsored by Senator Joe Josephson, this legislation would require employers to give a preference to qualified Alaskans for jobs on state land.

It provides that Commissioner of Labor set these requirements, and that they be included in natural resource leases.

It passed Senate Labor and Commerce Committee. At the close of 1985 session the bill was in Senate Resources Committee.

Constitutional Aspects of SB 271 (1985) Resident Hire Under Oil and Gas Leases

Letter by Deputy Attorney General Ron Lorenson, April 16, 1985

In this letter Dep. Attorney General Lorenson (counsel for the State in Hicklin v. Orbeck) provides a short overview of the Hicklin case and expresses doubts about the constitutionality of SB 271 (1985).

HCR 20 (1985)

A resolution requesting the Attorney General and Commissioner of Labor report on ways to maximize local hire

Passed the House in 1985. It was in the Senate Finance Committee at the opening of the 1986 legislative session.

Testimony of Rep. Marco Pignalberi re: HCR 20 Relating to Local Hire

House Labor and Commerce Committee, April 1, 1985 Juneau, Alaska

HCR 20 (1985) called for the Attorney General and Department of Labor to submit a report to the Legislature on ways to maximize local hire.

Rep. Pignalberi's testimony contains much useful information in the form of an economic overview of the impact of nonresident workers on Alaska's economy.

HB 295 (1985)

This bill provides for a special appropriation to the Department of Labor to study hiring practices as they affect Alaska residents.

SB 235 (1985)

This bill is the Senate version of HB 294 dealing with the preferential hire of resident Alaskans.

# # #

HB

466

FILE #2

Alaska State Legislature

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CHAIRMAN
Special Committee on
Telecommunications

MEMBER
Labor and Commerce
State Affairs
Finance—Subcommittee Administration

Representative H. A. "Red" Boucher

M E M O R A N D U M

To: Rep. Mike M. Miller, Chair
House Judiciary Committee

From: Rep. H.A. "Red" Boucher, Sponsor
HB 466 Alaska Resident Hire

Date: March 5, 1986

Subject: Additional supportive materials for the record, HB 466

I would like to request that the following materials be adopted into the formal record of the proceedings and hearings on HB 466, as they all help to throw light on the issue linking unemployment to various social ills:

1) " Lower Yukon-Kuskowim Region Labor Market Analysis," Alaska Department of Labor, Administrative Services Division, Research and Analysis Section, July 1, 1981 special publication, 57 pages.

2) "Potential Socio-Economic Impacts of the Polaris Mine Project," by Outcrop Ltd. Yellowknife NWT, Canada, for Cominco American Incorporated, June, 1980, 163 pages, plus executive summary, pp. i-xii. with cover letter from Cominco Alaska dated February 11, 1986.

3) "Hardship and Depression," Journal of Health and Social Behavior, Vol 26 (December): pp. 312-327, by Catherine Ross and Joan Huber.

4) "Rural Health Issues and Suicide Evaluation Project: A Resource Document," by Alaska Native Health Board, Inc., November 1985, 147 pp. with cover letters dated February 20 and 21, 1986

5) "Executive Summary: Rural Health Issued and Suicide Evaluation Project: A Resource Document," by Alaska Native Health Board, Inc., November 1985, 147 pp.

6) "Rural Resource Center," An overview document prepared

by the Alaska Native Health Board, Inc., 22 pages--with addendum of 7 pages. 1985.

7) "Estimating the Effects of Economic Change on National Health and Social Well-Being: A Study prepared for the use of the Subcommittee on Economic Goals and Intergovernmental Policy of the Join Economic Committee, Congress of the United States," US. Gov. Printing Office, June 15, 1984, Washington , estimated 100 pages.

98th Congress
2d Session

JOINT COMMITTEE PRINT

S. PRT.
98-198

ESTIMATING THE EFFECTS OF ECONOMIC CHANGE ON NATIONAL HEALTH AND SOCIAL WELL-BEING

A STUDY

PREPARED FOR THE USE OF THE

SUBCOMMITTEE ON ECONOMIC GOALS AND INTERGOVERNMENTAL POLICY

OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

JUNE 15, 1984

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1984

29-726 O

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

J 842-38

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LETTERS OF TRANSMITTAL

JUNE 11, 1984.

Hon. ROGER W. JEPSEN,
Chairman, Joint Economic Committee,
Congress of the United States, Washington, D.C.

DEAR MR. CHAIRMAN: Transmitted herewith for the use of the Joint Economic Committee and other Members of Congress is a study entitled "Estimating the Effects of Economic Change on National Health and Social Well-Being" by Dr. M. Harvey Brenner of the Johns Hopkins University.

This study examines long-term relationships between aggregate measures of economic conditions and social pathology, including mortality rates, physical and mental illness, and criminal aggression. It updates and refines the analysis of a study prepared for the Committee by the author in 1976. Like the earlier study, this work provides policymakers with a basis for assessing the human consequences—and costs to society as a whole—of a particular pattern of economic activity.

Since 1980, the United States has endured back-to-back recessions and the worst levels of unemployment since the 1930s. Currently 8.5 million Americans are jobless. The national unemployment rate exceeded 10 percent for 10 months. At the worst point of the recession nearly 12 million people, or 10.7 percent of the workforce, were unemployed. In two years, unemployment has risen by more than 40 percent and directly touched at least one-fourth of all persons in the work force. Among families with one or more members in the labor force, 29 percent had at least one person unemployed in 1981 and 33 percent had someone unemployed in 1982.

Economists have taken stock of some of the economic costs of recession. Because of idle labor and plant capacity, output of goods and services has run between $250 billion and $300 billion a year below the economy's potential in recent years.

Moreover, recessions can have harmful effects on productivity long after they have technically ended. Investments in both physical and human resources which could add to our productivity in the future are undertaken less frequently in periods of excess capacity. Other productivity losses occur as the skills of idled workers obsolesce.

There may also be long-term damage to the labor market prospects of those out of work—especially persons unemployed for six months or more. Besides experiencing greater trouble finding new jobs, such workers are most likely to take jobs with lower wages and benefits than they had previously. Studies of past recessions suggest that young people in the process of establishing their careers are most seriously impeded by lengthy spells of unemploy-

ment. Some of them never catch up. In this recession, the number of long-term unemployed reached nearly 3 million, an all-time high. Over 1 out of 5 of these unemployed persons are teenagers or young adults.

Much of the burden of unemployment is sustained by the jobless themselves. Typically, workers' losses of income are only partially replaced by unemployment compensation and other transfer payments. The financial hardship is frequently compounded by the loss of critical benefits, like health insurance, which were tied to the job.

Joblessness may also subject family relationships to considerable strain. The psychological pressures on individuals are intensified by feelings of failure, guilt over the inability to support their families, and loss of self-esteem. Greater stress may affect the entire household, not just those out of work. The longer this situation endures, the more likely it becomes that frustrations will be vented on the family—or on the rest of society.

Although many transfer programs and social services for the unemployed have been reduced in scope in this recession, the steep increases in joblessness continued to push public expenditures up. At the same time, high unemployment has reduced tax revenues available to all levels of government. At the Federal level, the combined effect on the deficit from those so-called "automatic" tax and spending changes is in the range of $30 billion to $35 billion for each one percentage point rise in the national unemployment rate.

Other costs to society as a whole are harder to quantify. This study, in looking at how particular social indicators vary in accordance with changes in aggregate economic performance, makes a valuable contribution to this process of estimation.

Using data from 1950 through 1980, the study examined the relationship between economic change and nine indicators of social stress. These indicators include: total mortality rates; cardiovascular-renal disease mortality; cirrhosis of the liver mortality; mental hospital admissions; suicide rates; homicide rates; state prison admissions; total arrest rates; and the incidence of major crimes reported to the police. The principal economic measures are: per capita income (adjusted for inflation); unemployment rates; labor force participation rates; and business failure rates.

Relationships are analyzed for the total population as well as different age, sex, and race subgroups. In tracking these relationships over time, the study takes into account several external factors—such as alcohol, cigarette, and fat consumption—which pose risks to health. As compared with the previous study, the ability to "control" for the influence of these external factors strengthens the interpretation of the statistical findings.

The study found important relationships, comparable in magnitude to those of the earlier research, between economic changes and most of the principal measures of social pathology. As summarized in Table A, for example, the 14 percent increase in unemployment prior to the 1974-75 recession was linked to the following social changes: a 2.3 percent increase in the overall mortality rate; a 2.8 percent increase in the cardiovascular mortality rate; a 1.4 percent increase in the cirrhosis of the liver mortality rate; a 6 percent increase in admissions to state mental hospitals; a 1 percent

increase in the suicide rate; a 6 percent increase in total arrests; and a 1.1 percent increase in assaults. Additional increases in social pathology were associated with the 3 percent drop in real per capita income and the sharp rise in business failures which occurred during this period.

TABLE A.—IMPACT OF A 14.3 PERCENT RISE IN UNEMPLOYMENT DURING 1973–74

Pathological indicator	Change related to 14.3 percent rise in unemployment (percent)	Increase in incidence of pathology
Total mortality	2.3	45,936
Cardiovascular mortality	2.8	28,510
Cirrhosis mortality	1.4	430
Suicide	1.0	270
Population in mental hospitals	6.0	8,416
Total arrests	6.0	577,477
Arrests for fraud and embezzlement	4.8	11,552
Assaults reported to police	1.1	7,035
Homicide	[1] 1.7	403

[1] Increases in the homicide rate were found to be related to rising unemployment among males age 16–24, expressed as a proportion of the total unemployment rate.

With three exceptions, these figures reflect the cumulative changes in pathology rates over a six year period. Because chronic diseases take longer to develop and detect, the changes in cardiovascular mortality, cirrhosis mortality, and total mortality were estimated to occur within 16 years. They should be viewed as minimum estimates, since only a subset of possible problems are examined. Moreover, the measures of pathology do not capture some of the less extreme consequences—like nonfatal illness and crimes that do not result in incarceration—that may have been influenced by economic factors.

Naturally, since a myriad of other factors contribute to social pathology, the rates of change associated with the economic measures appear small. But the costs, in human and dollar terms, are substantial. Calculations in this study show that over 45,000 deaths can be attributed to the rise in unemployment that occurred at the onset of the 1974–75 recession and that the drop in real per capita income at that time brought about 60,000 deaths. The increased unemployment in this example was also linked with 270 additional suicides, 8,416 additional admissions to mental hospitals, and 577,477 additional arrests.

In interpreting such findings, it must be emphasized that the study deals only with aggregate relationships. Thus it does not support conclusions about the behavior of individuals: some one who loses a job does not, necessarily, have a greater likelihood of committing a crime or dying from a stress-related illness. However, the findings for the population as a whole suggest that stress induced by economic conditions can lead to shorter life, more illness, and increased aggression for the employed as well as the jobless.

Besides clarifying the human consequences of adverse economic performance, the results of this study can be used to gauge the dollar costs of increased pathology to society as a whole. While the calculations involved are necessarily rough, they point to a wide

range of direct and indirect costs associated with unemployment. The magnitudes should underscore to policymakers the importance of keeping unemployment at a minimum.

In 1977, according to a recent study by the Research Triangle Institute in North Carolina, the cost to society of problems related to alcohol, drug abuse, and mental illness amounted to $106 billion. This figure includes both direct expenditures on health care (in hospitals, clinics, nursing homes, as well as physicians' services and drugs) and an estimate of indirect costs—principally the lost or reduced productivity of those who become ill. The latter measure attempts to value the goods and services (including unpaid household services) of which society has been deprived due to illness, disability, or death. While over $88 billion of the total is accounted for by the costs of medical care and forgone income, a variety of other factors—particularly in the case of drug abuse—are economically important: for example, the costs of crimes committed by drug addicts and corresponding outlays of the criminal justice system.

For each of the pathologies considered in this study, similar cost estimates can be obtained. For example, heart attacks and strokes cost the Nation $109 billion in 1975 in medical services and forgone earnings of those afflicted; one year's homicide victims, according to a 1976 estimate by this Committee, would have earned $3.6 billion over the course of normal lifetimes. Of course, only a fraction of the cost in any of these cases can be attributable to economic factors. But based on the increases of additional pathology found by the study to be related to economic changes, an appropriate portion of the cost can be calculated.

Based on changes in unemployment, income, and other conditions in the mid-1970s, Dr. Brenner estimates dollar losses due to recession-related increases in mortality at $26 billion. As shown in Table B. These are resources taken from productive use, which reduce the real wealth of our society. Undoubtedly, the sharper rises in joblessness during the current recession would mean even greater losses now.

TABLE B.—ECONOMIC LOSS IN MILLIONS OF 1980 DOLLARS DUE TO CHANGES IN UNEMPLOYMENT, PER CAPITA INCOME, AND THE BUSINESS FAILURE RATE DURING 1973 AND 1974*

Social stress indicator	Representing economic cost of	Economic loss
Total mortality	Total illness	26,222
Cardiovascular mortality	Diseases of the circulatory system	15,950
Population in mental hospitals	Hospitalization in State and county mental institutions	495
Suicide	Suicide	31
Total arrests	Criminal justice system	1,970
Arrests for fraud and embezzlement	White collar crime	3,061
Homicide	Homicide	137

*Estimates are based on a 14.3 percent increase in the unemployment rate; a 3 percent decline in trend per capita income, and a 200 percent increase in annual change in the business failure rate.

The study thus leaves us with two messages: That changes in unemployment, real per capital income, and other measures of economic performance are correlated with crime, mortality, and a number of physical and mental illnesses. And that a major deterioration of economic conditions will have a pathological impact on

hundreds of thousands of people, with a multi-billion dollar cost to society extending far into the future. It is incumbent upon us, in formulating economic policy, to understand these links and to recognize that substantial social costs are preventable.

The study was prepared by Dr. Brenner under the guidance of Mr. William Robinson, Chief of the Education and Public Welfare Division of the Congressional Research Service, and Ken Cahill, Specialist in Social Legislation at CRS. Mary Eccles of the Joint Economic Committee staff also reviewed and coordinated arrangements for this work.

Generally, tables included in the text present research results for the population as a whole, rather than the many different subgroups studied. A representative set of tables with these detailed findings is provided in the appendix; additional tables can be obtained from the committee or the author.

The views expressed in this study are those of the author and do not necessarily reflect the views of the Joint Economic Committee or any of its Members.

Sincerely,

LEE H. HAMILTON,
Chairman, Subcommittee on Economic Goals and Intergovernmental Policy.

DECEMBER 2, 1983.

Hon. LEE H. HAMILTON,
Chairman, Subcommittee on Economic Goals and Intergovernmental Policy, Joint Economic Committee, Congress of the United States, Washington, D.C.

DEAR MR. CHAIRMAN: In response to the request of your committee, I am submitting a report entitled *"Estimating the Effects of Economic Change on National Health and Social Well-Being,"* by Dr. M. Harvey Brenner. The report was prepared by Dr. Brenner under contracts with both the Congressional Research Service and the Joint Economic Committee.

This report is an update and refinement of an earlier study done by Dr. Brenner and published by the Joint Economic Committee in 1976. Among its results, this earlier study found that increases in the unemployment rate were related to the social well-being of the population. Increases in mortality, mental ill health, and criminal behavior were found to be associated with economic instability, as measured by changes in unemployment. Due in part to the very high unemployment rates of the past several years, the committee requested that the Congressional Research Service assist in updating the 1976 study.

The present report both affirms and extends the findings of the 1976 study. Dr. Brenner once again finds that increases in long term real income have beneficial consequences for social well-being. Also confirmed are the negative associations between economic instability, particularly unemployment and the business failure rate, and certain aspects of social well-being. In addition, the present study refines the statistical model developed for the 1976 report. Dr. Brenner reports that these refinements both enhance

the confidence with which the results can be viewed and extend the research so that new findings are reported.

New results are presented in several areas. Measures of economic instability other than the unemployment rate—decline in labor force participation, decline in average weekly hours worked, and increases in the business failure rate—are reported to be strongly associated with increased mortality. The study shows associations between economic inequality and deterioration in mental health and well-being. Finally, the report presents new evidence on the relationships between pathological conditions and certain risk factors such as alcohol and cigarette consumption, illicit drug use, high divorce rates and the proportion of the population living alone.

Dr. Brenner's study breaks new ground in its development of a sophisticated statistical model of complex social and economic relationships. As with any model of this complexity, the results are profoundly affected by the theory and assumptions inherent in the research design and on which there may be disagreement among experts. We believe that this study, read together with a review of research in the field, "Economic Change, Physical Illness, Mental Illness, and Social Change," prepared by Dr. Jeanne Gordus under contract with the Congressional Research Service, makes a stimulating contribution to the national debate.

We hope this report by Dr. Brenner will serve the needs of your committee as well as those of other committees and Members of Congress.

Sincerely,

GILBERT GUDE,
Director, Congressional Research Service,
Library of Congress.

ACKNOWLEDGMENTS

I thank Carl Christ and Allyn Kimball for technical advice in econometrics and biostatistics, Robert Swank and Rajiv Vohra for computer programming, Mauri Ingram for principal responsibility in data management, and Anne Mooney for review of the manuscript. Intensive examination and recommendations for revision of the report were provided by staff of the Congressional Research Service, including William Robinson, Kenneth Cahill, Charles Ciccone, Dennis Roth, and by Mary Eccles of the Joint Economic Committee staff.

Funding for the application of the basic model to the material of this report was provided under separate contracts with the Joint Economic Committee of the United States Congress and the Congressional Research Service of the Library of Congress. Development of the basic model itself was partially funded by the National Institute of Mental Health, the National Institute on Aging and, most recently, by the Alcoholic Beverage Medical Research Foundation.

the number of additional deaths associated with rising unemployment). The 1976 study made estimates based on a sustained increase in unemployment over a 6-year period. This report estimates the social implications of economic change and other measures over periods ranging from 1 to 15 years.

The Basic Research Questions

Using new data and advanced measurement techniques, the current study addresses the following research questions:

Will the addition of new data after 1973 (when unemployment levels reached their highest since the 1930s) alter the conclusions of the previous report?

Is economic growth still associated with longer life spans despite the influence of "diseases of affluence" (chronic diseases which result from a high per capita consumption of alcohol, cigarettes and fats) and high levels of environmental toxins?

Do the new, refined methods of measuring the relations under study nullify earlier findings or strengthen them?

Will indicators of recession other than unemployment (such as declines in labor force participation and average weekly hours worked and increases in business failure rates) be associated with increased social pathology?

Will the absence of important factors used in the previous study (the effects of the Great Depression, World War II, and the first post-war recession) alter the basic findings?

After the first post-recession rise in mortality rates, will additional waves of increased mortality be observed?

Are there relationships between measures of social pathology and measures of relative deprivation, as sociological and psychological theories would suggest? Do the relative measures provide a more powerful statistical explanation than those based on economic loss alone?

Major Findings

This study both presents important new findings and reconfirms many of the findings of the 1976 study. In general, the results of the present study are consistent with research findings at the individual, state, and national levels, and with findings in the field of epidemiology, which documents the incidence and distribution of disease in a population. The following sections briefly describe the major new findings, compare them with the 1976 study, and relate them to findings of other research studies which employ different analytic techniques.

1. New Results

The study indicates that economic growth continues to be closely related to longer life spans, at all ages and for both sexes. This remains true despite the influence of health risk factors such as high consumption of alcohol, tobacco, and animal fats and those alterations in the family structure which are associated with increased national wealth.

Equally important results show that several measures of economic recession and structural economic instability are related to mortality. In addition to a high unemployment rate, three other factors—decline in labor force participation, decline in average weekly hours worked, and an increase in the rate of business failures—are strongly associated with increased mortality, and the associations are apparent during a period of 2-3 years or less. Long-term (7-15 years) relationships between economic recession and increased mortality can also be observed.

The study also finds that economic inequality is associated with deterioration in mental health and well-being, manifest in increased rates of homicide, crime, and mental hospital admissions.

Finally, the report presents new evidence on the relationships between pathological conditions and certain risk factors—per capita alcohol consumption (by beverage type); cigarette consumption; illicit drug traffic and use; divorce rates; and the proportion of the population living alone.

A detailed review of the quantitative estimates of the relationships between recession and social pathologies occurring between 1950 and 1980 is presented in Chapter V. Examples of these estimates, when applied to the 1973-1974 recession or, in one case, to 1978-79, follow:

Between 1973 and 1974, the unemployment rate rose 14.3 percent, the real per capita income declined 3.0 percent, and the annual change in business failure rate increased 200 percent.

The increased unemployment rate during 1973-74 is associated with the following: a 2.3 percent increase in the total mortality rate, or 45,936 deaths, from all causes; a mortality rate increase of 2.8 percent, or 28,510 deaths, from cardiovascular disease; a mortality rate increase of 1.4 percent, or 430 deaths, from cirrhosis; a mental hospital admission rate increase of 6.0 percent, or 8,416 persons hospitalized; an arrest rate increase of 6.0 percent, or 577,477 persons arrested; an assault rate increase of 1.1 percent, or 7,035 assaults reported to the police; and a suicide rate increase of 1.0 percent, or 270 known suicides.

The decline in the trend in real per capita income during 1973-74 is related to the following: an increase in the total mortality rate of 3.0 percent, or 59,996 deaths, from all causes; a mortality rate increase of 4.4 percent, or 45,189 deaths, from cardiovascular disease; a mortality rate increase of 2.7 percent, or 806 deaths, from cirrhosis; and a suicide rate increase of 1.11 percent, or 320 known suicides. In addition, the increase in annual changes in the business failure rate is associated with a 9 percent increase in the cardiovascular mortality rate, or 95,680 cardiovascular deaths.

Age-specific relationships are the basis of the overall aggregate estimates. It is therefore possible to cumulate numbers within each distinct category of pathology where the relationships to each of the three economic factors are similar across age groups. A basic similarity in relationships to the three economic factors, for example, exists among age groups in cardiovascular disease mortality. Thus, for cardiovascular disease, the combination of the 1973-74 increase in the unemployment rate, the decrease in the trend of real per capita income, and the increase in the annual change in the business failure rate is related to an overall increase of more than

165,000 deaths over a 10-year period (the greatest proportion of which occurs within 3 years).

Finally, the ratio of youth unemployment (unemployed persons aged 16–24) to total unemployment rates increased by 9 percent between 1978 and 1979. That increase in the youth unemployment ratio is related to an increase in the homicide rate of 1.7 percent, or 403 deaths, by violence.

The 1973–74 increase in the unemployment rate, decrease in real per capita income, and increase in the annual change in the business failure rate are related to more than $24 billion in costs. This figure, explained in the data in Table B, Chapter VI, relies on information derived outside this study. These costs include income lost because of illness and mortality and costs of supporting mental hospitals and the criminal justice system.

D. DIRECT RELATIONSHIPS

In the last phase of this study, it was found that unemployment and business failure rates are also related to such health risk factors as alcohol and cigarette consumption and to the proportion of the population living alone. These health risk factors themselves have been shown, in this study, to be related to several of the measures of pathology. The implication is that recession has indirect effects on the pathologies, as well as the direct effects reported above. Experiments indicate that these indirect effects may be substantial. For example, the indirect effects of recession on total mortality may be nearly double the direct effects associated with to the unemployment rate. These experimental results indicate that it will be important for future research to focus on the interactions between economic change, health risk factors, and social pathologies. Such research should permit more precise estimates of the overall relationship between economic change and social pathology to be made.

2. Comparison with the 1976 Report

The present work corroborates the major results of the 1976 study: (1) real per capita income growth is strongly associated with decline in mortality, and (2) recession continues to be related to increased pathology in the areas of mental and physical illness and criminal aggression.

Thus, in the current report, the basic findings on the beneficial impact of long-term economic growth are reaffirmed. The overall mortality rate for all ages, both sexes, and the two major racial groups continues to decrease in relation to long-term increases in real per capital income. Similarly, the importance of the relationship between recession and social pathology can be seen in virtually all the indices of mental and physical illness and criminal activity. The present study re-emphasizes that the unemployment rate is the most reliable indicator of recession-related injury. It is evident, however, that business failure rates and declines in labor force participation rates play substantial roles. The 1976 study found that the basic relationships between recession and pathological measures can take place within a 6-year period. The present study finds

that pathological implications of recession may produce results for at least another decade.

3. Agreement with Other Research Findings

The current report confirms results obtained by other researchers which show that individuals of lower socioeconomic status have a high incidence of illness, accidents, and mortality. Psychological disturbances and reported illegal behavior are also more prevalent in low-income than in higher socioeconomic groups.

Findings in the current report are consistent with research that has compared populations by age and major cause of death with respect to socioeconomic differences. Furthermore, the findings reported are consistent with epidemiological literature, which has shown that cigarette consumption, immoderate alcohol consumption, fat consumption, and social isolation are signficant health risks. The recent study also supports research that shows organic chemical toxins to be health risks and illegal drug activity to be a major factor in many different types of crime, especially homicide.

Usefulness for Social Policy

The purpose of this study was to conduct research on the possible pathological effects of unemployment and other forms of national economic distress and to present the findings in a form that will provide useful information for debate on national economic policy. This reporting of the basic statistical relationships between measures of economic activity and measures of social pathology is intended as an early step in the development of a social accounting system that is useful in the assessment of public policy.

This study offers statistical support for the thesis that actions influencing national economic activity have a significant, if not central, influence on physical and mental health and criminal activity. Economic policy decisions, therefore, can be argued to have a substantial effect on many aspects of societal health and well-being.

Policy implications of these analyses can be developed from understanding both the beneficial and detrimental social consequences of changes in economic conditions. Economic measures in this study were selected with specific reference to policy, including some which capture long-term growth trends and changes in the well-being of individuals, and others which portray the capacity of the economy to provide employment to those who seek it.

The pathological indices were also chosen for their significance to policymaking. They are measures of fundamental human unhappiness and non-well-being. Mortality rates are measures of the changing life span. Suicide and mental hospital admission rates are expressions of mental health disorders. Imprisonment and homicide are expressions of acute forms of human aggression. It would be imprudent to disregard social pathologies associated with factors that stem from economic policy. It is clear that the social costs associated with national economic decisions may be substantial.

29-726 O—84—2

Further Areas of Study

We have found statistically reliable relationships between economic growth and long-term improvements in the nation's health and life span. Similarly, we know that recession is related to significant deteriorations in physical health, mental health, and to criminal justice problems. The findings are consistent with comparative research based on both individuals and large populations which show increases in health and social problems and decreased life span in groups of low socioeconomic status.

The quantitative estimates derived in this study express only average population response patterns across time. It would be useful to estimate these relationships at somewhat lower level of aggregation, because conditions can vary greatly by geographic region and urban centers. Different industrial and occupational groups are very differently affected by national recessions and structural economic changes. The responses of certain populations to adverse conditions may be modified by state and local government approaches aimed at ameliorating detrimental social consequences to local groups. High priority should be given to study of those population groups which have been affected by economic change well beyond national averages, analyzing what happens to individuals if possible. Furthermore, it is important to compare relationships found in the United States to those in other industrialized countries, as a means of gathering information about those social policies that are effective in mitigating the adverse consequences of change.

At the level of individual analysis, it would be especially useful to know more about the dynamics of job-related stress experienced by workers during periods of economic crisis or uncertainty. Survey studies of populations experiencing sharp economic fluctuations could reveal important information about the effects of fluctuations on physical and mental health and potential for criminal behavior. The emphasis on large national population samples is necessary in order to examine severe but less frequent conditions and for the statistical control of traditional risk factors.

II. OVERVIEW

Setting the Problem

Severe disturbances to the economies of industrial nations during the past decade have raised the issue of the relationship of a growing and stable economy to health and social well-being. To what extent can national well-being be damaged, or at least fail to improve, in a climate of extraordinarily high rates of unemployment and inflation, structural decline in manufacturing employment, and increased regional disparities in wealth and economic development?

Epidemiologic observations have consistently demonstrated that differential mortality and morbidity rates are related to socioeconomic status at the individual level (*1*), to gross national product at the national level (*2, 3*), and to high rates of unemployment and of workers earning low income in county and metropolitan areas (*4, 5*). As national economic growth declines, mortality rates increase. Conversely, it has been documented for various periods in the United States (*6*) and other industrialized countries (*4, 7*) that the mortality rate declines following long-term economic growth.

In the fall of 1976, the Joint Economic Committee of the U.S. Congress published a study of the impact of economic change on levels of mental and physical health and criminal aggression (*8*). This study, using measures of economic growth, inflation, and unemployment, showed consistent statistical associations between increases in unemployment rates and increases in measures of social pathologies. Considerable other research has shown the association between unemployment and risks to physical and mental health (*9–13*), as well as to increased rates of imprisonment (*14*).

The objective of the current study is to indicate a potential impact of national economic policies on major social problems, including a decline in mental and physical health and an increase in illegal activity. In order to estimate the national importance of facts known only through small samples based on individuals or on specific regions, data from large national samples would be appropriate. Large samples would also assure that relatively infrequent conditions such as death and severe illness are accounted for, and that controls can be developed for those risk factors that affect societal problems independently of economic policies.

Since large national samples were not available, we used a two-step approach. In the first step, research findings and scientific formulations developed at individual and regional levels of analysis are brought together and applied to the national level. In the second step, the national-level analysis is designed so that it accounts for the short-, medium-, and long-term implications of economic changes.

The Major Hypotheses

The Economic Change Model of Pathology was designed by the author to account for the impact of changes in the economy on physical and mental health and illegal activity. The model has five basic elements: long-term economic growth, economic instability, economic inequality, factors associated with economic growth which pose risks to health, and random shocks.

1. Long-Term Economic Growth

By making available increased resources or wealth per capita, long-term growth fosters social well-being and increases in life span. Such growth spurs societal investments in new knowledge (for example, concerning medical care) and in education of the population. It also provides the basis for improved working conditions, including the development of health and safety measures, and for increases and improvements in leisure and social insurance.

2. Economic Instability

Economic instability encompasses recession and structural economic changes that are damaging to certain groups in society. In times of economic instability, loss of employment and income occur with unusual frequency. Economic instability is marked, therefore, by high rates of unemployment and business failures and by declines in labor force participation and declining returns to investment for the individuals affected.

Under these conditions, the income levels and socioeconomic status of certain individuals and groups are lowered. Downward mobility, or the threat of it, and the attempt to re-establish socioeconomic position frequently involve considerable psychological and economic harm to the people involved. Employees of firms whose existence is threatened because of significant economic losses are also adversely affected.

3. Economic Inequality

Economic inequality relates to the distribution of the product of economic development. For reasons which usually depend on structural change in the economy or on social custom, specific groups may not gain—or may actually experience loss—while the rest of the population takes part in the process of economic growth.

4. Health Risk Factors

Economic growth may alter consumption and production activity in ways that are deleterious to health. Examples are immoderate alcohol consumption, abuse of prescription or illicit drugs, cigarette smoking, regular consumption of foods that are high in fat content, environmental contamination with chemical toxins, and substantial increases in the number of motor vehicles in the population. Another problem linked to growth is social isolation: divorce or solitary living arrangements may also impair health.

5. Random Shocks

Random shocks are disturbances in the natural or social environment that have the potential to damage a population's well-being. These include disasters such as floods, tornadoes, earthquakes, epidemics, internal political or economic disturbances, and rapid demographic changes.

Derived Hypotheses

The principal hypotheses which are derived from the Economic Change Model of Pathology are as follows: (1) economic instability, economic inequality, special risk factors associated with economic growth, and random shocks are detrimental to a population's health and social well-being; (2) conversely, economic stability, some measure of increased economic equality, minimization of risks associated with economic growth, and the absence or control of random shocks coincide with trends fundamentally beneficial to a population's health and social well-being.

Specific hypotheses which can be derived from this general framework include: (1) as long-term economic growth increases, overall mortality rates decrease; (2) as the unemployment rate increases, mortality rates increase and the incidence of social pathologies is greater; (3) as labor force participation and average hours worked in manufacturing industries decrease over the short run, mortality and social pathology rates increase; (4) as the business failure rate increases, the mortality rate increases and individual health and well-being decline.

The major hypotheses are discussed in more detail in Chapter IV.

Selection of Measures

The purpose of this study is to translate research findings on beneficial and pathological effects of economic growth and recession into a form that is useful in assessing national economic policy decisions. The underlying analysis relates several measures of social pathology to major indices of economic stress.

We cannot offer overall estimates of the relationship between economic change and mental health, physical health, or aggression. To do this we would need to take into consideration the extent of total morbidity (in the cases of mental and physical health) and the total incidence of aggression in society (in the case of illegal activity). Date on the incidence of general illness which could be appropriately used for this study have never been available, nor have we had any but the barest and most questionably reliable data with which to estimate criminal behavior. We are therefore unable to measure the totality of the phenomena directly, but must instead rely on estimates from a variety of indirect sources.

1. Measures of Social Pathology

Measures of social pathology, which represent fundamental aspects of well-being, were chosen for their policy significance. Trends in the overall mortality rate are measures of the changing life span. Cirrhosis and cardiovascular-renal disease mortality rates

are negative measures of the physical health of the population. The suicide rate and mental hospital admission rate are negative mental health measures. Measures of the incidence of criminal aggression reflect disturbances in the social environment.

A. GENERAL HEALTH MEASURES

i. The total mortality rate, specified by age, sex, and race
ii. The cardiovascular-renal disease mortality rate, by age and sex
iii. The cirrhosis mortality rate, by age and sex

We face a complicated problem in measuring changes in the nation's health status. There appear to be no uniformly gathered estimates of health status over sufficiently long periods of time to permit comparisons with changes in the state of the economy. Moreover, those estimates which do exist have not kept pace with medical diagnostic criteria of ill health. We are therefore limited in our estimates to the most severe indication of ill health—mortality.

The advantages of using mortality as an index substantially outweigh the disadvantages. Those states which have registered deaths since 1900 provide reliable estimates of the rate of death over time. In fact, mortality data are the "hardest" demographic data available for use in the biological and social sciences. Furthermore, these data can be compared according to the specific components of age, sex, and race, thereby providing comparisons of the reactions of certain groups to environmental changes. Finally, the data on the causes of death are reasonably reliable for large categories such as cardiovascular-renal disease or infectious diseases. These data are available for many different countries; they are also available from each U.S. state, allowing comparison with estimates for the country as a whole.

Perhaps the major disadvantage of using mortality as a national health index is that, over the last several decades, increased life span has been associated with a greater probability of morbidity due to chronic diseases (*25*).

B. MENTAL HEALTH MEASURES

i. Rate of admission to psychiatric hospitals, by age
ii. The suicide rate, by age
iii. The cirrhosis mortality rate, by age and sex

We do not measure the national "mental health level" directly by using these three measures to reflect changes in the overall mental health of the population. Rather, we assume that, by using the combined estimates obtained, we can infer (imperfectly, we admit) changes in the overall mental health status of the population. In doing so, however, we rely on measurements of the most extreme behavior for which society keeps a continuous record.

One example of the use of data on extreme behavior is our utilization of the rate of admissions to mental hospitals over time to indicate changes in the overall mental health level of the population. Such a procedure has the disadvantage of being somewhat confounded by administrative problems related to the hospitalization of the mentally ill (for example, admissions policies in hospi-

tals with limited space and numerous applicants). It has the advantage, on the other hand, of representing a relatively severe indication of change as well as the tolerance of the population for serious mental disturbance.

Related measures such as suicide rates and cirrhosis mortality rates are used to supplement data on mental hospital admissions. (Cirrhosis is also used as an indicator of physical health.) The suicide rate is indicative of severe mental distress. Fluctuations in the incidence of cirrhosis-related deaths would indicate the extent of severe alcohol abuse. If the relationship between mental hospital admissions and changes in the economy accurately reflects the effects of the economy on societal stress, we should obtain similar findings for suicide and cirrhosis-related deaths. The mental hospital admission rate may be more generally reflective of the overall level of societal mental distress, however, because suicide and cirrhosis are infrequent compared with hospitalization for mental illness.

Among the mental health measures, therefore, we have selected those which represent intellectual and affective disturbance, inability on the part of the family and community to deal with mental disorders outside the institutional setting, and the use of psychotropic substances to alleviate mental health trauma. These measures cover, conceptually, a number of broad mental health problems and, taken together, generally reflect the overall mental health of the population.

C. MEASURES OF CRIMINAL AGGRESSION

i. The rate of imprisonment in state prisons
ii. The rate of arrests, by age
iii. The major crimes known to police, by type

Estimating changes in the incidence of criminal aggression is at least as difficult as obtaining comprehensive indices for mental and physical health.

Imprisonment is used as an index of extreme forms of societal aggression, an indication of criminal behavior serious enough to warrant incarceration by the state for the protection of the public. As an indicator of societal aggressions, imprisonment has the disadvantage also of being influenced by changing standards of criminal correction, the effects of plea bargaining, and public finance considerations. Although imprisonment is a relatively indirect measure of the extent of aggression within society, it is nevertheless fairly reliable as a measure of the presence of societal aggression.

Measures of criminal activity drawn from criminal justice sources include the rate of arrests for all offenses, ranging from relatively minor charges such as drunkenness to serious crimes of aggression and violence. Narcotics arrests are singled out for particular attention because of the overall damage to social health and well-being represented by illegal narcotic activity. Arrests for embezzlement and fraud, as a measure of overall white collar crime, have been thoroughly analyzed because of their extraordinary monetary cost to society. Moving closer to the actual incidence of criminal behavior, we examine the rate of crimes reported to police for

six of the serious offenses: assault, burglary, larceny, robbery, rape, and automobile theft.

Homicide is used as a supplementary measure of aggression. It is drawn from vital statistics rather than from criminal justice sources, and therefore does not depend on the criminal justice reporting system. In the same way that suicide and cirrhosis mortality rates lend validity to mental hospital admission estimates of mental health, homicide rates serve as a supplementary measure to rates of imprisonment as an indication of change in the extent of aggression in American society. Both homicide and imprisonment have shown patterns similar to those of mental health measures in relation to disturbances in the economic environment.

In each of the topic areas in which social measures have been selected—physical health, mental health, and illegal activity and aggression—key policy issues are involved. This study provides statistical evidence for each of these measures, of direct and indirect relationships to national economic policies, which bears attention. In many instances, national economic changes are linked to social problems that have entailed considerable expense to society.

2. Economic Measures

Economic measures were chosen for their relevance to both policy and to theories of how economic factors may influence pathological phenomena. Furthermore, economic measures distinguish between trends in long-term economic growth and short-term, or cyclical, fluctuations.

A. MEASUREMENT OF LONG-TERM GROWTH TRENDS

i. Growth of per capita income

The most significant measure of economic growth, the trend[1] in per capita income, is related directly to the material well-being of individuals. In estimating the exponential trend in "real" growth, we take into account the rate of inflation.

B. MEASUREMENT OF CYCLICAL FLUCTUATIONS

i. The unemployment rate, by age and sex
ii. Short-term declines in labor force participation and in hours worked in manufacturing industries
iii. The business failure rate

These measures were selected to portray the capacity of the economy to provide employment to those who seek it. The principal index is the unemployment rate, a key measure of cyclical changes in the economy. In both the 1976 report and the current study, this measure is interpreted as a multidimensional measure of stress, indicating loss of work, loss of income, and damage to self-esteem and social relationships. In many cases we found it useful to specify un-

[1] The "pure" trend element of long-term economic growth tends to have an exponential form. We therefore fit an exponential trend to the real per capita income, thus eliminating the cyclical component, which is measured by the variables discussed in the section on cyclical fluctuations.

employment rates by age and sex, rather than use the total unemployment rate.

The 1976 study used only the unemployment rate in estimating effects of recession, a factor which may have served to understate the overall pathological implications. In the present study, additional measures of recession are used to capture the widespread nature of the current economic stress. For example, the measurement of short-term declines in labor force participation documents the activity of persons who have dropped out of the labor force because of retirement or discouragement. The rate of business failures is another powerful indicator of recession which depicts the economic impact particularly on members of the middle class.

Although we now have several indices with which to measure the adverse impact of periods of economic instability on individual health and well-being, we still lack a totally comprehensive measure of cyclical effects.

How To View Results

The statistical analyses performed for this study identify relationships between economic and social measures. They cannot be used to demonstrate causality. The results only establish that certain factors vary in similar fashion and appear to be statistically linked.

In the present study, tests for the statistical significance of findings are routinely performed to reduce the possibility that the relationships occur by chance (Tables I-III and Appendix Tables 1-33). Also of relevance is how systematically the same results are found among sub-populations of the study sample. Consistent sets of relations by age group and sex, by cause of death, and by category of mental hospitalization and crime are reported in detail in Chapter V. These results are in agreement with those of other studies (Chapter III), and, in general, our theoretical expectations about the relationships between economic change and social pathology are borne out by the findings (Chapters III and IV).

Returning to the issue of causality, it is possible that various unidentified external phenomena are responsible for the changes being observed between the factors. In this case, economic and social factors could be jointly related to other, unobserved factors which produce the results. Our research cannot rule out this possibility.

We can, however, examine whether some external factors which are influenced by economic conditions—such as alcohol, cigarette, and fat consumption per capita, and social isolation—also influence health. If such risks to health are taken into account, are the same relations between economic conditions and health and social well-being still observed? We have found that, controlling for these factors, the relations between economic conditions and measures of health and well-being are usually strengthened rather than weakened.

We conclude, therefore, that although they do not prove the existence of causal relationships, our findings provide considerable statistical support for the hypothesis that economic recession is related to adverse change in national health and well-being.

To interpret the study's results properly it is necessary to understand that aggregate data are being used. This presents a minimal problem in the case of relations based on "simple" factors, which have one meaning for both the individual and the entire population. Such simple factors include per capita alcohol, cigarette, and animal fat consumption. Compound factors such as economic instability are multidimensional and are measured by several variables which have different implications for different individuals—income loss, employment loss, increased work stress, home foreclosure, and forced migration. During a period of national economic instability, individuals will not experience the same types or same combinations of adverse circumstances. Thus, the measures of economic instability—rates of unemployment, labor force participation, and business failures—represent more than they measure directly.

Lag Structure

We find that increases in mortality rates, mental pathology indices, and criminal justice indices can be observed within a 6-year period during and after recession. Based on previous research in the United States and other industrialized countries, we expected, and found, that there are two characteristic peaks in the relationships within that 6-year lag period. The first of these peaks occurs during the first year of the recession and presumably reflects: (1) sharp psychological reactions to substantial economic loss, such as can be seen in the suicide rate, in the mortality rates of highly vulnerable populations, and in criminal justice indices, and (2) decline in nutrition and use of medical care, which can affect infant mortality and mortality among the chronically ill.

The second peak typically occurs 2 to 3 years after a recession (as measured at the highest level of the unemployment or business failure rates). Though chronic disease (especially cardiovascular disease) mortality is especially involved, nearly all sources of illness and social pathology are implicated. The 2- to 3-year peak reflects a period of continued economic loss for the population that loses socioeconomic status as a result of recession. This sequence can be observed by examining standard economic indicators.

The 6-year interval of increased mortality associated with recession is understood to reflect, in part, increases in the incidence or severity of chronic illnesses which in some instances result in mortality. It is assumed, however, that most persons whose ill health is aggravated by recession do not die within a 6-year period of recession. Rather, the seriously ill population becomes more vulnerable to mortality over at least the subsequent decade. With total and chronic disease mortality, therefore, we find relationships between recession and mortality over a 16-year period.

Results

In this section as throughout this report, expressions such as "related to" or "associated with" are used to mean that statistically significant relations were found between measures of economic change or health-risk factors and social pathologies, without inferences to the cause and effect of the relationships.

The principal findings of this study reflect the premises of our general model. Specifically, the long-term trend of economic growth has a beneficial association with total mortality for all ages, particularly with respect to cardiovascular disease and suicide. Economic instability, as measured by the unemployment rate, has an adverse relation to total mortality at all ages, with lags under 5 years and usually over a period of 7 to 15 years. The same pattern of statistical relationships is reflected in the findings for cardiovascular diseases (especially ischemic heart and cerebrovascular disease) and cirrhosis of the liver. Suicide is related to unemployment with lags under 2 years, as is homicide for children of both sexes at ages 1 to 4 (probably reflecting child abuse) and for women over the age of 45. Imprisonment, arrest rates in all age groups, and serious crimes reported to the police are all associated with increased unemployment rates within a period of 6 years.

Business failure rates, a second measure of economic instability, are strongly related to mortality in persons over the age of 55 with lags of under 3 years. Cardiovascular mortality rates show this relationship even more clearly (especially at younger ages), and even within 1 year, similar relationships are observed for suicide rates of middle-aged groups. Decline in labor force participation, another measure of economic instability, is associated, within a year, with increased mortality of infants and of the population aged 20 to 24 and over 55. Declines in labor force participation by women are related to suicide rates of women over the age of 35.

Economic inequality, as measured by the discrepancy between unemployment of specific population groups and that of the population at large, is related to homicide, mental hospital admissions, and imprisonment. Regarding homicide, the ratio of youth unemployment to total unemployment is an especially prominent factor. The ratio of unemployed persons over age 65 to total unemployment is an important factor in psychiatric hospitalization, while the non-white unemployment ratio bears a strong relation to state prison and state mental hospital admissions.

Other variables have also been found to be related to measures of health and social well-being. Alcohol consumption per capita is related to virtually all the measures of pathology. It is necessary, however, to consider the principal beverages separately: for example, beer consumption per capita is clearly related to decreases in cardiovascular mortality, especially in ischemic heart disease mortality. On the other hand, cigarette consumption per capita is uniformly related to increased mortality in persons over the age of 35 and in infants, and for all diagnostic categories of cardiovascular disease. Social isolation, as indicated by the divorce rate and by the proportion of the population living alone, is related to increases in mortality in several age groups as well as suicide, mental hospital admissions, and officially recorded criminal activity.

The relationships between economic changes and measures of societal pathology are discussed in Chapter V and are presented in detail in Tables I–IV and the Appendix Tables. Although the analyses are based on relationships during the years 1950–1980, approximately, we can estimate their quantitative implications for specific recessions. In Table A we estimate the relations of specific econom-

ic indices to measures of social pathology for the recession beginning in 1973–1974.

TABLE A.—ESTIMATED IMPACT[1] OF A 14.3 PERCENT INCREASE IN UNEMPLOYMENT RATE, 3 PERCENT DECLINE IN TREND PER CAPITA INCOME, 5.5 PERCENT INCREASE IN BUSINESS FAILURE RATE, 200 PERCENT INCREASE IN ANNUAL CHANGE IN BUSINESS FAILURE RATE

[All actual changes between 1973 and 1974[2]]

Social stress indicator	Increase in stress incidence related to									
	Rise in unemployment rate		Fall in real income trend		Rise in business failure rate		Rise in annual change in business failure rate		Rise in ratio of unemployment rate of males in age group 16–24 to total unemployment rate	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total mortality	45,936	(2.3)	59,996	(3.0)	2,582	(0.1)				
Cardiovascular mortality	28,510	(2.8)	45,189	(4.4)			95,660	(3.0)		
Cirrhosis mortality	430	(1.4)	806	(2.7)						
Suicide	270	(0.98)	320	(1.1)						
Population in mental hospitals	8,416	(6.0)								
Total arrests	577,477	(6.0)								
Arrests for fraud and embezzlement	11,552	(4.9)								
Assaults reported to police	7,035	(1.1)								
Homicide[3]									403	(1.7)

[1] Direct effects only; estimates of indirect effects are discussed in Chapter V.
[2] Equations based on the years 1950–1980.
[3] Homicide figures refer to change of 9 percent in the youth unemployment ratio between 1978 and 1979.

Note: Figures in parenthesis indicate percent of total stress incidence.

Between 1973 and 1974, the beginning of a national recession, the unemployment rate increased by 14.3 percent, the trend in real per capita income fell by 3.0 percent, the business failure rate increased by 5.5 percent, and the annual change in the business failure rate increased by 200 percent. In Table A, the social implications of these economic changes are estimated for total mortality; mortality due to cardiovascular diseases, liver cirrhosis, suicide, and homicide; mental hospital admission rates; and criminal indices which include the total arrest rate, the rate of arrests for fraud and embezzlement (white collar crime), and the rate of assaults known to police.

In the case of total and chronic disease mortality—cardiovascular and cirrhosis mortality—the unemployment impact is estimated within a 16-year period. For all other indices of social trauma the unemployment impact is estimated within a 6-year period. The increase in social trauma associated with the decline in the real per capita income trend is estimated within 1 year; that of increased business failure rates and annual changes in business failure rates is estimated within a 3-year period. Table A shows, for example, that the increased unemployment rate is related to: an increase of 45,936 deaths (or 2.3 percent) within a 16-year period. The per capita income trend decline is related to an increase of 59,996 deaths (or 3.0 percent) within 1 year. The increase in business failures is related to an increase of 2,682 deaths (or .10 percent) within 3 years.

Table B provides dollar costs associated with the changes in unemployment rates, trend of real per capita income, and business

failure rates during 1973–74. Table B is derived from calculations in Table A of the percentage of changes in social pathologies that are linked to changes in the economic indices. The social pathologies are taken as indicators of more general societal problems. Thus, total mortality serves as an indicator of total illness; cardiovascular mortality indicates morbidity due to circulatory system disease; arrests for fraud and embezzlement indicate white collar crime, etc. The economic costs of the societal problems, indirectly measured by the social pathology indicators, have been derived from independent studies discussed in detail in Chapter VI. Those economic costs are multiplied by the percentage changes in social pathologies related to economic conditions to produce the economic losses of the 1973–74 economic changes reported in Table B.

TABLE B.—ECONOMIC LOSS IN MILLIONS OF 1980 DOLLARS ASSOCIATED WITH [1] A 14.3 PERCENT INCREASE IN UNEMPLOYMENT, 3 PERCENT DECLINE IN TREND PER CAPITA INCOME, 200 PERCENT INCREASE IN ANNUAL CHANGE IN BUSINESS FAILURE RATE [2]

(All actual changes between 1973 and 1974 [3])

Social stress indicator	Representing economic cost of	Economic loss related to				Total
		Rise in unemployment rate	Fall in per capita income trend	Rise in annual change in business failure rate	Rise in ratio of unemployment rate of males in age group 16–24 to total unemployment rate	
Total mortality [4]	Total illness	$11,371	$14,851			$26,222
Cardiovascular mortality [4]	Diseases of the circulatory system	2,685	4,256	$9,009		15,950
Population in mental hospitals	Hospitalization in State and county mental institutions.	495				495
Suicide	Suicide	14	17			31
Total arrests	Criminal justice system [5]	1,970				1,970
Arrests for fraud and embezzlement.	White collar crime	3,061				3,061
Homicide [6]	Homicide				$137	137

[1] Direct effects only; estimates of indirect effects are discussed in Chapter V.
[2] Impact on population in mental hospitals is for 1979, for suicide for 1978.
[3] Equations based on the years 1950–80.
[4] Costs of total and cardiovascular illness estimated at a 2.5 percent discount rate. For estimates at 10 percent discount rate, see chapter VI.
[5] Assuming that trends and fluctuations in total arrests reflect those in overall crime, the related overall crime cost would be $10,880 million.
[6] Homicide figures refer to change of 9 percent in the youth unemployment ratio between 1978 and 1979.

It should be pointed out that the social and dollar costs of recession are "direct" in the sense that they influence health and criminal indices when control factors such as alcohol and cigarette consumption and divorce and the population living alone are held constant. The "indirect effects," which are based on the influence of recession on these control factors, and, subsequently, on health and criminal activity, have been studied experimentally. The experimental results indicate that the indirect effects of recession are probably much greater than the direct effects of the unemployment rate (see Chapter V on Indirect Effects).

Social Costs and Social Policy

This report deals with the basic relationships between national economic conditions and measures of social pathology. If these findings are to be of use to policy makers, they need to be translated into the costs associated with changes in social pathologies.

If the intent of national policy making is to bypass concerns of slow economic growth, instability and recession in favor of long-term economic prosperity, then the following should be considered. First, whatever the success of long-term policy, if current economic growth is damaged, or recession is deepened or prolonged, one can be reasonably confident of substantial social costs. If the long-term approach turns out to be correct, then there may be net social gains over the long term, but there will also have been sacrifices borne by specific populations in the short run. On the other hand, if long-term policy is incorrect, then it is possible that the costs based on current considerations will not be offset; indeed, it is likely that they will be increased.

If policymakers consider that long-term economic policy will, in fact, override current costs and benefits, the results of the present study emphasize the need for caution, for several reasons. First, there is no consensus among the leaders of the economics profession regarding the appropriate path toward sustained prosperity. Second, the existing models of national economic behavior are rarely precise in forecasting beyond the short term—a year or two into the future. Third, because of domestic and international political considerations, it is not certain that resulting economic policy formulations will have the anticipated effects. Such uncertainties about long-term economic policy planning make it clear that overriding short-term economic considerations may incur substantial costs to society.

Beyond the promotion of real economic growth and curbing of recession, the Economic Change Model of Pathology presented in this report is applicable to other types of social policy. It is generally assumed that severe economic inequality and structural unemployment are undesirable. The data of this report substantiate those assumptions by showing that economic inequality is related to poor physical and mental health and to increased criminal activity. Structural unemployment—especially of youth—is associated with mental health and criminal justice problems.

Our information on government spending for social programs indicates that government spending on Aid to Families with Dependent Children (AFDC) is significantly related to declines in mortality of infants and 1- to 4-year-olds. It is also possible to infer some of the effects of diminished social welfare spending during recession. We observe that health problems of many different types, ranging from infant mortality to chronic diseases and mental health, substantially increase during periods of economic recession. Some would argue that a period of recession is therefore a period during which it is most urgent to debate increased supplements to income, nutrition, and health care.

Table B summarizes specific social costs in monetary terms. More specific discussions of these data can be found in Chapter VI.

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III. HISTORICAL BASIS OF THE MODEL

Introduction

Probably no subject in social epidemiology has been as long and thoroughly studied as the relationship between socioeconomic status and health (*29, 149, 150*). Until very recently, the bulk of research in this area has been concerned with establishing a strong statistically significant relationship between low socioeconomic status and mental and physical disorders. A high incidence of physical and mental pathologies has been found in groups with low socioeconomic status.

Given the consistent findings of the substantial literature at the individual level, research turned to a specific measurement of the distribution of illnesses in the population. Higher morbidity and mortality rates and higher incidence of ill health were identified in low socioeconomic groups that included nonwhites and the elderly. Mental disorders such as schizophrenia occurred with the highest frequency in the low socioeconomic groups. Furthermore, there is evidence of a relationship between socioeconomic status and reported crime, although this association is less satisfactorily worked out than others.

To understand the dynamic relationship between economic levels and health, further advances were required in research design. Specifically, it was necessary to demonstrate with a certain level of statistical probability that a change in health status would follow a change in the economic status of a person or population. To facilitate this end, researchers began to look at the variables in the context of nations or large aggregate groups in order to identify the dynamics involved and the relationships between them.

Individuals and Socioeconomic Status

a. Epidemiology of Illness

Important social epidemiological studies in the United States have long provided evidence of the relationship between low socioeconomic status and pathology. The conclusion was that socioeconomic status per se, rather than residential area or ecological niche, was the crucial variable in social deviance in general, and in physical and mental pathology specifically (*147*, pp. -29).

Further research on the subject of individual and economic change has shown consistently that groups of low socioeconomic status exhibit a high incidence of mental and physical disorders and criminal aggression. These include higher rates of morbidity and mortality due to ill health (*23–39*); a large number of mental disorders (*40–56*); and a high incidence of illegal activity (*143*).

When the welfare state was introduced in Britain after World War II, income distribution was equalized to some extent, and

social and medical services were made more available. Nevertheless, substantial differences in disease patterns continued to exist among the socioeconomic groups in that country. Indeed, overall mortality rates have continued to be high for the lower socioeconomic groups, both in Britain and the United States (*29*), since that time. In the United States, moreover, the infant mortality rate and the communicable disease death rate for white infants have declined far more sharply than have those for non-whites (*30*); the sharp declines seem to be due, in part, to difference in income and education.

In the United States, the comparatively poor disease patterns of low socioeconomic groups and non-whites have been most evident in chronic conditions as reported in the National Health Survey (*31*). Hypertension (*32*) and cancer of the lung, cervix, stomach, and esophagus (*33*) are among the principal chronic diseases related to low socioeconomic status.

The high morbidity and mortality rates of individuals of low socioeconomic status can also be observed among the elderly. The number and severity of disabilities for older persons in the lower social classes is high, and, largely for these reasons, fewer of them continue to work after the age of retirement. The lack of food and relatively poor preparation of food among the lower-class elderly have been documented, as have inadequate housing, housekeeping services, and nursing care (*38,39*).

b. Health Care Utilization

Seriously compounding the problem of higher rates of severe illness and mortality among lower socioeconomic groups is that they tend to delay more than their counterparts in higher socioeconomic groups in seeking medical care. Numerous studies show that people with low incomes tend to seek physicians' services in hospital emergency rooms and clinics, presumably because their illnesses have reached emergency conditions or because they have had no regular source of primary physician care (*69, 79, 85, 88-89, 94-95, 98, 101, 105, 107-109*). People with the lowest incomes have the lowest rates of surgery (*68-69, 73-74*). High-income groups are more likely to use preventive services, especially children of high-income families (*67, 68, 73, 76, 78, 84, 89, 90, 101-102, 105, 108, 110-114*). In addition, high-income persons use more services of specialists (*69, 82, 94-96, 99, 101, 108*) and seek more preventive services from dentists than do low-income persons (*88, 101, 103, 115*).

Traditionally, research has indicated that low-income groups use physicians' services and are admitted to hospitals less often than high-income groups. These relationships are being reversed, however, because of the growth of health insurance and financing programs for the poor (*67-106*). Low-income persons still stay in the hospital on average longer than high-income persons, probably indicating greater rates of severe illness (*68-69, 71-74, 79-83, 86, 88, 91, 93-94, 96, 99, 100, 103, 105-106, 116*), but both high- and low-income groups seek physicians' services for serious illness at similar rates (*68-69, 84, 108-109, 117-118*).

Poor health care and related practices appear to be closely connected with morbidity and mortality patterns. In Britain, low-

income groups have made less use than high-income groups of services to improve health, including hospitals (*34*), prevention and immunization facilities, maternal and child health services, and dietary supplements (*35*). Similar findings of disadvantage to the health of lower socioeconomic groups continue to be observed for the United States. In the United States, in addition, the problem of access to health care, both because of the absolute costs and the organization of medical services, appears to have a more serious impact on low-income than on high-income persons (*36–37*).

c. Mental Disorders

Major differences among socioeconomic groups are also found in the case of mental disorders. Despite the many unsolved problems of selecting reliable and valid indices for measuring mental disorders, every measure shows that lower socioeconomic status tends to be highly correlated with poor mental health (*40*). Only a few studies among a great many on this subject do not show a greater prevalence of mental disorders in the lowest socioeconomic groups (*41–42*). The relationship between high rates of mental disorders and low socioeconomic status holds regardless of whether the studies used surveys of subjective reports of happiness, standard psychiatric inventories, psychiatric examinations, or interviews by psychiatrists (*43–47*). The findings are similar in studies involving the incidence of all types of psychiatric care (*48*) or first admissions to mental hospitals (*49*).

The incidence of schizophrenia, especially in larger cities, occurs mainly among low-income groups. The incidence of psychoneuroses and personality disorders is also prevalent among groups of low socioeconomic status. The distribution of the depressive disorders, however, may be unrelated to social class groupings (*50–56*).

d. Social Disorganization

The relationships between socioeconomic status and crime, delinquency, family disorganization, and alcoholism have been worked out less satisfactorily. This is most likely due to the lack of precise measures in these areas of social pathology. Nevertheless, as was noted above, they tend to predominate in areas with low-income populations. In addition, many studies indicate that lower-class individuals run greater risks of being defined as criminal or delinquent (*57–59*). Again, numerous studies indicate an inverse relationship between socioeconomic status and divorce rates (*60–62*), desertion (*62–64*), and illegitimacy (*65*). Finally, there is substantial evidence of increases in heavy consumption of alcohol, and debilitating problems related to such drinking, commensurate with decreases in socioeconomic position (*66*).

In the literature described above, there are no extant cohort studies of living populations in which both the economic and health conditions of individuals were measured through time. Rather, these studies described a point-in-time relationship between low economic status and relatively high morbidity and mortality rates and contributing factors, such as utilization of health services.

Populations and the Overall Economy

The central value of macro-level studies of the influence of economic disturbances on health lies in their ability to gather information from large populations over both long and short time spans. The pre-eminent question of how important the health implications of economic change may be is answerable only by the macro study, since it is geared to estimate the impacts on the population of communities, cities, provinces, nations, and aggregates of nations. The macro-level studies also allow us to study differences in responses to economic disturbance according to culture, political system, economic system, and type of industrial development.

Populations and Economic Development: A Static Picture

Empirical research testing the relationship between economic growth and health status depends on suitable data from comparisons among populations at different levels of economic development—either for the same society over time or for different societies. Such studies usually measure health levels by mortality-based indicators—crude death rates, infant mortality rates, or expectation of life at birth. Recent analyses of death rates over various time spans in the 20th century in the U.S. (*151*) and Britain (*152-153*), for instance, show strong association between trends in increased per capita income and decreased mortality rates for all causes, infant deaths, and cardiovascular disease. Cross-sectional studies of samples of both industrial and developing countries corroborate results of the longitudinal studies. Levels of mortality decline and life expectancy rises with higher levels of income or GNP (*154*, pp. 1903-1905; *155*).

Preston's (*155*) analysis of 50 to 60 countries in the 20th century shows a relationship between increased per capita national income and increased life expectancy, with more gain in life expectancy per dollar income in the 1960s than in the 1930s or 1900s. The result illustrates an important characteristic of the basic association between health and economic change—the basic relationships can be found under many circumstances, but the strength, form, and conditions of the relationships are likely to vary with changes in time and place.

Populations and Economic Change: A Dynamic Picture

A. ECONOMIC HISTORIES

Studies of the effects of economic adversity on mortality rates began with the observation that after the 18th century in northern Europe, the mortality rate declined sharply (*119*). Furthermore, the decline in mortality rates had been measurable long before the introduction of sanitation, large-scale quarantine methods for immigrant groups, or medical technologies such as inoculation and chemical therapeutics, especially the sulfonamides. It is now generally accepted that the extraordinary increase in life expectancy that occurred during the 18th century in northern Europe was largely a function of the control over agricultural productivity (*120-121*).

Major technical advances in agriculture, generally first attributed to Britain, were observed to diminish the amplitudes of the cycles of abundance and famine which were known to be closely related to the levels of mortality associated with major epidemic diseases and plague (*120–121*). Indeed, the 19th century in northern Europe saw a decline in mortality which resulted in both a doubling of the life span and an extremely sharp decrease in mortality rates attributed to infectious diseases. The "industrialization" of agriculture continued into the 20th century. In industrialized countries, infectious diseases ceased to be a significant cause of mortality in all age groups.

B. INDUSTRIALIZED SOCIETY VERSUS DEVELOPING COUNTRY

So significant is the influence of economic development per se on mortality and morbidity levels that, on an international basis, the most significant source of life expectancy differentials is clearly related to the level of economic development. In developing countries, mortality rates, especially infant mortality rates, are comparatively high, and diarrhea, respiratory illness, and infectious diseases are mainly responsible for morbidity and mortality. In contrast, in industrialized countries, the major sources of mortality are chronic diseases and external causes (accidents, homicide, suicide) in the younger age groups. The major changes in life expectancy and patterns of disease incidence reflect very long-term or secular changes in the productivity of the economy that are the result of industrialization in both agriculture and manufacturing (*122*).

It has been suggested that the result of the transfer of public health and medical care measures from developed countries to certain low-income countries is that survival is now more clearly statistically dependent on social policies than on national income. Whatever importance the transfer of technical advances may have, however, it has not, it is argued, altered the basic income-health relationships (*151–155*).

It must be noted that relating trends in economic indicators to health status is far more complex for industrialized countries. In the first place, the effects of long-term trends in national productivity and income must be considered distinct from those of cyclical changes in the economies of countries where production and consumption patterns are not planned, i.e., non-socialist countries. Second, a major problem in analyzing the effects of economic change on morbidity and mortality concerns the probability that the decline in health status will lag behind the decline in the national economic indicator. A third concern involves the precise mechanisms whereby adverse changes in the economy may increase the population morbidity level. The methodological problems are discussed in more detail in the *Research Concerns* section of this Chapter.

Despite the differences in kinds of data and in methodological considerations, the empirical evidence strongly supports the relationship between national economic indicators and health in industrialized countries (*147*). For both infectious diseases and infant and maternal illnesses, strong relationships have been observed between an increase in national economic growth and a decrease in

mortality rates (*135*). The decrease in mortality due to the chronic diseases has also been found to have a strong relationship to national economic growth in industrialized countries (*133–135*); these chronic diseases include heart, cerebrovascular, and renal diseases which comprise the majority of sources of mortality in these countries. Finally, increases in rates of hospitalization for mental disorders have been shown to be strongly related to adverse national economic fluctuations (e.g., unemployment rates), as have mortality due to cirrhosis of the liver, automobile accidents, and suicide and homicide (*129, 130, 139*).

C. POPULATIONS AND ECONOMIC INSTABILITY

With these findings as background, an additional series of studies was undertaken over the last 5 years to determine the overall effects of changes in the national economy on health status. Given the consistent findings of the substantial literature on the subject, there was reason to believe that declines in employment and income, and increased inflation, would decrease the actual socioeconomic status of significant minorities of the general population. Those decreases in socioeconomic status, in turn, would lead to lowered levels of nutrition, a substantial increase in social-psychological stress, and decreased financial access to medical care facilities. These three factors, originating in national economic instabilities, would then have a substantial negative impact on the health of the population.

Economic downturns have potentially damaging influence on health because they entail change for many members of a population and loss of social status for some, often those of the lowest social status. Most research on the health effects of business cycles has analyzed national or state populations with mortality rates as the measure of health levels. Recently, however, measures of morbidity and utilization of health services have become more frequent, especially in studies of mental disorder.

Earlier analyses had dealt with mortality from all causes, infant mortality, suicide, and deaths resulting from heart disease and tuberculosis (*156–159*). With the exception of tuberculosis, which over the last 50 years has declined in importance as a cause of death in industrial countries, these causes are still attracting the attention of researchers. Later research followed the earlier work in demonstrating that unemployment rates are directly related to mortality rates, with lags of 2 to 5 years, particularly when long-term economic growth is also controlled (*160*). But at the same time, another business cycle indicator, measuring the rapid pace of economic growth, was also related directly to mortality.

In periods of economic instability, economic loss and downward mobility lead to expansion of the socioeconomic differentials. This means socioeconomic status of some populations is lowered. Recent reports from Britain (*161–162*) and the U.S. (163–165) continue to show a strong relationship between socioeconomic status and measures of morbidity and mortality, often with a particularly large gap separating the lowest social stratum from the rest of the population.

Interpretation has typically focused on such intervening variables as living environments, occupational hazards, nutritional status, and access to health care. As economic growth has contributed directly and indirectly to improvements in these conditions, even for the poorest, the data have been regularly tested for indications of convergence of health status among groups of different socioeconomic status. Researchers in the U.S attempted to determine whether improved economic conditions had elevated the health status of the poor. Although convergence has been reported (*149, 164, 166-167*), the gains are not necessarily maintained. In fact, there have recently been reports of absolute as well as relative deterioration in the health status of lower socioeconomic groups (*162*) during periods of economic growth.

Results of Economic Change

a. Loss of Resources and Psychological Stress

The two principal ways in which adverse economic changes, specifically unemployment, can affect health are, directly, through the reduction of material resources, and, indirectly, through psychological stress. Loss of resources is associated particularly with infectious disease and in fetal and infant health problems related to inadequate nutrition, housing, and energy. In societies where access to medical care is not universally guaranteed, reduction in income will lead to a decline in or postponement of, health care utilization. In the U.S. for instance, reduced access occurs with loss of health insurance benefits or health care benefits usually secured through employment. Stress related to unemployment may also act to depress health care utilization, even where health care availability is in principle undiminished as a result of national policy.

Psychological stress is generated in the unemployed, their dependents, and close associates through loss of social and economic position, anxieties over the future, damage to social networks, and the concurrent need to adapt to a new set of life circumstances. Psychological strains on persons employed in financially damaged firms result from threats of loss of social or economic status and from work stress. It is, therefore, of some importance that studies that compare the unemployed and employed from the same firm or community may occasionally find little difference between the two groups.

Psychological stress related to unemployment will result, theoretically, in the same types of mental health problems that are stimulated by other major sources of stress (*168*)—transient reactions and personality disorders, clinical depression, aggression, and psychotic episodes. Psychophysiological stress may also involve the cardiovascular, metabolic, reproductive, immune, or neurological systems.

b. Social Pathologies Associated with Economic Change

In the past 20 years, studies of the relationship of economic change to morbidity and mortality in industrialized countries have examined effects on mental and physical disorders. The earlier work, dealing with mental health problems, tended to emphasize

the role that economic loss might play in causing stress. As attention to physical health problems increased, it became apparent that recession itself also played a principal role. At present, it is recognized that loss of resources and psychological stress are not easy to separate causally. The implication is that, in the vast majority of pathologies, including mental and physical health and criminal aggression, some combination of resource loss and psychological stress is probably involved.

Health Indices and Economic Change

1. Suicide

Suicide is the first indicator of mental pathology found to increase consistently with adverse changes in the economy (*123–124*). A number of researchers have replicated these findings, and they attest to the severe stress that is brought about by economic recession.

2. Mental Hospital Admissions

Since the 1930s, a number of researchers have attempted to demonstrate a relationship between adverse economic changes and increases in mental hospital admissions. Three recent studies of note have demonstrated that the relationship can be measured consistently over time (*125–127*). The first of these studies dealt with Massachusetts during the 1930s, the second with the whole United States during the Depression, and the third with New York State for the period 1841–1967. It was demonstrated that, during each of the recessions since 1841, the number of both first admissions and readmission to mental hospitals increased substantially. Cyclical changes in the economy were the single most important factor in trends of admission to mental hospitals. The New York State study was replicated for the entire United States and for each state for the period 1928–1969, with nearly identical results (*127–128*).

3. Alcohol Abuse

The findings on alcohol abuse are consistent with the hypothesis of increased mental disorder precipitated by social-psychological stress during economic recession. It was initially observed that increases in mortality rates due to cirrhosis of the liver were positively related, over time, to consumption of alcohol (*129*). It was subsequently estimated that there is a lag between the increase in per capita alcohol consumption and cirrhosis mortality rates (*129*). In addition, it was shown that consumption of distilled spirits (rather than wine or beer) was the significant factor in cirrhosis mortality, and that such consumption was related to cyclical declines in the national economy. Finally, it was observed that cirrhosis mortality itself increased substantially 1 to 2 years after national economic recessions (*129*). It was clear that, because it takes a long period of time to acquire chronic cirrhosis of the liver, the short-term economic trauma had not initiated the cirrhotic condition, but that, once morbidity was present, economic recession tended to hasten mortality.

Additional findings continued to reflect the importance of the relationship between the increased consumption of distilled spirits and the declining state of the national economy. Thus, admissions to mental hospitals in New York State and in the United States as a whole, of persons diagnosed as having psychosis related to alcoholism or with any alcohol-related mental disorder, showed substantial and stable increases during economic recessions for the period 1921–1968 (*127, 129*). Similarly, arrests for drunkenness in Massachusetts were found to increase with adverse changes in the national economy during 1915–1968, with the arrests lagging 2 years behind fluctuations in the economy (*129*). Finally, the arrest rates for driving while intoxicated in the United States as a whole, and the number of persons brought to trial and found guilty of driving while intoxicated in the city of Philadelphia, were found to increase substantially during national economic recessions (*129*).

4. Motor Vehicle Accidents

In keeping with the findings on the relationship of economic recession to arrests for driving while intoxicated are more general findings on the relationship of economic recession to deaths resulting from automobile accidents in the United States (*130*). These findings hold across all ages, both sexes, and whites and nonwhites, and may or may not be related to alcohol abuse. This relationship may be due in part to the effects of stress on intellectual functioning, which may, in turn, result in errors in driving or handling other machinery. It has also been suggested that automobile accidents represent a form of highly aggressive and violent behavior related to decreased impulse control under stressful conditions. The latter hypothesis is consistent with findings that homicide rates have been strongly influenced by economic recession, particularly for white males in the United States, and in Canada, England, Wales, and Scotland (*132–143*).

5. Heart Disease

Increasingly, empirical research has been devoted to factors in the incidence of, and mortality from, heart disease. The first studies clearly demonstrated that fluctuations in heart disease mortality rates for New York State were inversely related to the employment rate in New York State for 1915–1967. They also showed that mortality from diseases of coronary arteries was related to fluctuations in the unemployment rate for the United States as a whole during 1930–1960 (*133*). Both the relationships for New York State and the United States showed that the peak of increased mortality lagged at least 2 to 3 years behind economic recessions.

The work on heart disease was followed by extensive studies of the relationship between national economic indicators and cardiovascular-renal diseases in general (*134*). The hypothesis was that these illnesses include significant psychophysiological factors involving hypertension, as well as serum cholesterol levels. The total category of cardiovascular-renal diseases and major subcategories, including circulatory system diseases and chronic nephritis, was examined. Because cardiovascular-renal diseases account for approximately 60 percent of all mortality in many industrialized nations,

the data were examined in 10-year age groups, by race and sex, for the United States during 1914–1968. A consistent relationship was found between national economic fluctuations, measured by per capita income or employment rates, and cardiovascular-renal disease mortality rates. For cardiovascular-renal diseases in general, the peak lag behind economic recessions ranged from 3 to 6 years, depending on age, and the peak lags for chronic nephritis ranged from 0 to 2 years. For cerebrovascular diseases, the lag ranged from as much as 6 to 9 years.

6. Infant Mortality

The infant mortality rate has long been regarded as one of the most sensitive indicators of the general socioeconomic level of the nation, and the relationship between the economy and infant, fetal, and maternal mortality has received extensive examination. In all industrialized countries for which data are available, the secular trend of industrial growth has been inversely related to the long-term trend in infant mortality rates (*135*). For industrialized societies, however, the problem of adapting to economic change is associated less with the level of economic growth than with whether that growth is relatively smooth or chaotic.

In investigating the relationship between economic instability and mortality in infants under 1 year of age, the following hypotheses were raised: (1) There is a short- to intermediate-range relationship of approximately 0 to 3 years between economic trends or fluctuations and trends in infant mortality rates. This relationship has historically been an important component of the relationship between low socioeconomic status and increased infant mortality. (2) This 0- to 3-year relationship has had more influence on infant mortality trends since 1950, perhaps as a result of the relative decline in the beneficial impact of secular economic growth in an economy that is already highly developed. To test the applicability of the hypotheses to the full age range of infant and fetal mortality, the following categories were examined: rates of infant mortality under 1 day, under 28 days, from 28 days through 1 year, and fetal mortality. All data were examined by race. All categories of fetal and infant mortality increased sharply in relation to economic recession with a peak lag of from 0 to 2 years (*135*).

CRIMINAL JUSTICE INDICES

The trend in unemployment appears to be the most intensively studied economic factor in relation to crime. Thus, property crime (*136*) and delinquency (*137, 138*), as indicated by reported crimes on the national level, are significantly related to unemployment. Admissions to prisons and the homicide rate also vary with unemployment, according to several studies. For the period 1926–1962, admissions to state prisons and the homicide rate for the entire United States and for New York State were positively correlated with the unemployment rate (*139*). In the state of Georgia, the prison population was similarly observed to change with fluctuations in the unemployment rate during 1967–1974 (*140*). The size of the federal prison population was shown to be related to the unemployment index of 15 months earlier for the period 1952–1974 (*141*).

Again, for the period 1960-1972, strong relationships were found between the unemployment rate and both federal and state imprisonment for the United States as a whole (*142*).

A cross-national comparison of California, Massachusetts, and New York, and Canada, England, Wales, and Scotland, over the years 1920-1940 and 1947-1973, also demonstrated positive relationships between the unemployment rate and every measure of criminal activity, for both personal and property crimes (*143*). Finally, several studies have indicated that unemployment directly influences parole, mandatory release violations, and recidivism (*144-146*).

UNEMPLOYMENT RATE AS INDICATOR

Although the health effects of high unemployment rates are not confined to the unemployed population, considerable research has focused on the particular risks to the unemployed. For example, a large national sample of middle-aged men in Britain shows that being unemployed is associated with chronic physical illness, including bronchitis, obstructive lung disease, and ischemic heart disease (*169*). One of the many published and unpublished reviews of the literature prepared in the last few years offers a particularly cogent assessment indicating that "there is good evidence that losing one's job can increase health risks, exacerbate chronic and latent disorders, alter the usual patterns of health-seeking behavior and exact numerous other social and interpersonal costs" (*170*, p. 1116). Another study concludes ". . . it is clear that unemployment in general is associated with individual psychological distress" (*171*, p. 11).

SUMMARY

The recent investigation of the relationships between economic recession and morbidity and mortality was preceded by a history of research covering the relationships, at single points in time, of low socioeconomic status to high rates of morbidity, mortality, and limited use of medical care. These relationships were consistently found in epidemiological studies and health care utilization studies, and for both physical and mental disorders. Attempts were recently made to measure the association between national economic recession and national health status.

The hypothesized relationship was in fact found between adverse economic changes and declining health status. Specifically, rates of suicide; cirrhosis mortality; homicide; motor vehicle accident mortality; infant, fetal, and maternal mortality; mental hospitalization; and indicators of alcohol abuse all increased as national economic conditions deteriorated, with lags of less than 2 years. Similar relationships between adverse economic conditions and health status were found for the cardiovascular-renal diseases, except that mortality from these diseases lagged for a period of from less than 2 years to 9 years.

The increase in morbidity in the population following economic recession may be seriously compounded by a decline in use of health services due to decreased purchasing power. This is an extremely serious potential problem for maternal and child health

and for illnesses in which rapid diagnosis and treatment are essential. It should also be noted that the effects of economic recession on health status vary greatly for different groups within the population. For individuals of comparatively low socioeconomic status, including a significant proportion of the nonwhite population, the consequences may be particularly severe.

Finally, a number of studies since the 1960s have found strong relationships between crime indices and lack of employment. Rate of property crimes known to the police, admissions to state prisons on the state and national levels, and admissions to federal prisons have been correlated with changes in the unemployment rate. For rates of homicide and other personal crimes, significant positive relationships were found with changes in unemployment rates.

Research Concerns

In relating trends in economic indicators to health status in industrialized countries, one must distinguish between cyclical changes in the economies of non-socialist countries, where the production and consumption patterns are not planned, and the long-term effects of economic change. The long-term effects influence the overall population life span and prevalence of chronic, versus acute infectious, diseases. The cyclical effects, on the other hand, influence short- and medium-term departures from those long-term mortality and morbidity patterns.

Lags must also be identified in analyzing the effects of economic change on morbidity and mortality. In industrialized countries, a time generally passes between the change in the national economic indicator and the change of health status. For example, in the case of chronic disease morbidity, one might expect the severe manifestations of illness to occur after a lengthy series of disturbances.

An additional factor involves the issue of lags and the precise mechanisms whereby adverse changes in the economy may increase the population morbidity level. In the case of heart, cerebrovascular, and renal diseases, it is assumed that the primary source of deleterious influence of economic adversity will be through the mechanisms of social-psychological stress acting to elevate levels of hypertension and, perhaps, blood cholesterol levels. One would assume that the effects of stress on hypertension or serum cholesterol would be prolonged and extensive (possibly 2 to 7 years) to produce results of severe morbidity or mortality.

The limitations of available data, gaps in our theoretical knowledge, and problems inherent in the methods of correlation have restricted causal interpretation of the findings discussed above. Consequently, there has been no consensus among specialists as to the causal linkages in a number of the cases reviewed in this chapter. Nevertheless, the hypotheses on which the present report is based are consistent with the basic findings contained in the literature reviewed.

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IV. THE ECONOMIC CHANGE MODEL OF PATHOLOGY

Introduction

A general theoretical model, the Economic Change Model of Pathology, was designed to model statistically the impact of changes in the economy on physical and mental health and criminal aggression in the United States during the past 30 years. The model brings together a variety of economic conditions, organizes them in context, and shows the relationships among them. Both the major economic stresses of recession and the beneficial and deleterious factors related to economic growth and development are emphasized. Thus, it is a model which can be used in times of both economic growth and decline so that different periods can be compared statistically and, over time, can be better understood.

Scope of the Study

As outlined in detail in the previous chapter, both historical and recent evidence demonstrate that low socioeconomic status is associated with poor health (*1–7*). Furthermore, it is argued that economic loss and downward mobility typically associated with recession are related to increased morbidity and mortality, particularly for persons of low socioeconomic status.

The Economic Change Model of Pathology is designed to contribute to a more accurate picture of the complex relationship between the economic environment and individual well-being by taking into account the impact of changes in the economy on the social areas of physical and mental health and criminal aggression. Changes in measures of the aggregate economic status of the population are seen in relation to changes in the pathological indices. The process involves two steps. The first is to associate indicators of health and social pathology with each of the following model elements: economic growth, economic instability, economic inequality, adaptational errors associated with economic growth, and random shocks. The second is to generate and test hypotheses which emerge from the resulting relationships.

Indices of social pathology and mortality are measures of human happiness and well-being. Mortality rates are indications of the changing life span. Mental health indices—mental hospital admission rates, suicide rates, and cirrhosis mortality rates—cover a number of broad mental health problems which, taken together, generally reflect the overall mental health status of the population. Indices of criminal aggression—imprisonment, arrest, and major crimes—are measures of disturbance in the social environment.

A distinction between long-term trend and cyclical change is crucial to an understanding of this model. Long-term trend refers to the lengthy, relatively even process of growth which is healthy for

the economy. Cyclical change is the semi-periodic fluctuation of many aspects of national economic activity (employment, investment, consumption patterns, etc.).

The cyclical movement is one of two aspects of economic instability. The other is the problem of obsolescence, which results from increased productivity. Actual increased productivity occurs through the process of invention and replacement: tractors replace horses, and automated equipment replaces factory workers. This process may push some portion of the population out of the production process. In this way, short-term cyclical changes frequently interact with long-term or structural economic changes.

In periods of economic growth, the long-term decline in average weekly hours worked in manufacturing and other industries is a reasonably good indicator of increased leisure time and favorable working conditions. In contrast, the short-term decline in average weekly hours worked is associated with recession and is an indicator of economic loss for individuals, business organizations, and the population as a whole.

Lag Structure

It is also necessary in the general model to specify the range, over time, during which the relationships are expected to take place. In general, we expect increases in mortality rates, mental pathology indices, and criminal justice indices to be seen within a 6-year period during and after recession. Based on previous research in the United States and other countries (Canada, United Kingdom, France, West Germany, Sweden, Finland, Italy, Spain, and Australia), we expect that there will characteristically be two peaks in the relationships within that 6-year lag period. The first of these peaks, occurring during the first year of the recession, usually reflects: (1) sharp psychological reactions to substantial economic loss such as is manifest in the suicide rate, in mortality affecting highly vulnerable populations, and in criminal justice indices; (2) decline in nutrition and medical care utilization, which affects infant mortality and mortality among the chronically ill.

The second peak typically occurs 2 to 3 years after recession, as measured at the highest level of the unemployment or business failure rates. Though chronic disease mortality (especially cardiovascular disease) is particularly involved, nearly all sources of ill health and social pathology are implicated. The 2- to 3-year peak reflects a period of continued economic loss for the population that is downwardly mobile as a result of recession. This sequence can be observed by examining standard chronologies of economic indicators.

Recessions usually occur over a period of less than 12 months which covers the time from the peak to the trough of economic activity. Specific "lagging" economic indicators, however, such as the unemployment rate, will usually not return to their pre-recession level for 2 to 3 years. Following severe recessions, 4 to 5 years may pass before employment-related indices return to pre-recession levels. During the entire period of recession and subsequent depressed employment, the downwardly mobile population experi-

ences continuous erosion of economic and social status with attendant damage to social relationships.

It is noteworthy that much of the post-recession period of depressed employment occurs at a time when the majority of the population is experiencing sustained economic improvement. This post-recession period, then, represents the time of maximal psychological deprivation for those who are seriously damaged by recession. At this time, the downwardly mobile population loses both in absolute terms and in relative terms as compared to the majority of the population. The psychological trauma of the downwardly mobile at this time is exacerbated by their own, their families', and their associates' belief that their losses are probably permanent.

The zero- to 5-year interval of increased mortality associated with recession is understood to reflect, in part, increases in the incidence or severity of chronic illnesses which in some instances result in mortality. It is assumed, however, that the majority of those whose ill health is aggravated by recession probably do not die within a 6-year period of recession. Rather, the seriously ill population becomes more vulnerable to mortality during at least the subsequent decade. Their heightened vulnerability results from three mechanisms.

The first is simply an acceleration of the natural progression of chronic disease processes that have been stimulated or exacerbated by recession. A second arises from the fact that subsequent recessions will occur and inflict more serious health consequences on the population whose health has already been put at risk. Consequently, the extent of recession-related damage on a population's health is in part related to the degree of damage that was associated with previous recessions. A third source of heightened vulnerability reflects the increased probability of economic loss following increased severity of recession-related illness. A chronic mental or physical disorder that becomes incapacitating will in turn increase the difficulty of maintaining or regaining a job or income. This secondary condition of deterioration in the subject's socioeconomic position is then likely to increase the long-term risk of chronic disease or mortality.

To recapitulate, the general model specifies damage to mental, physical, and social well-being over a 16-year period. This period includes the initial 6-year period of recession and its aftermath. It also includes the damage to general physical health that may continue over at least the subsequent decade.

The Economic Change Model

Economic Growth

The first element of the Economic Change Model of Pathology, long-term economic growth, is taken to be the underpinning of social well-being and increases in the life span. Long-term economic growth is responsible for increased resources, or wealth per capita, by which society is better able to manage the natural and human environments. The relationship between growth and mortality derives from the basic definition that economic growth produces higher levels of resources within a population. Resources can

be allocated to: (1) improvements in the standard of living; (2) investments in the development of new knowledge; and (3) investments in the applications of existing knowledge (*35*, Ch. 9), including medical care and education of the population. Economic growth is also the basis for improved working conditions, including health and safety measures, leisure and social insurance, and aid to the disabled, elderly and poor.

Over the long run, the net effects are the result of both beneficial and adverse factors made possible by growth. Beneficial factors include the potential of social investment in the development of new knowledge. The application of that knowledge may result in a higher standard of living: good nutrition; climate control through housing, clothing, and the use of fuel; parasite control; education; comfortable working conditions; and adequate monetary and social remuneration for work. A major beneficial factor in the case of morbidity and mortality is the provision and utilization of primary health services.

Because the beneficial factors resulting from economic growth are generally greater in number and importance than the adverse factors, over the long run, the net effect of economic growth is beneficial to health. Economic growth provides the material resources necessary for human adaptation to the environment. On occasion, however, technological innovations and social changes partly related to economic development result in adverse implications for health. These adverse results are usually due to lack of knowledge that the technological or social changes are actually causing harm to health.

Such lack of knowledge is generally related to the scientific problems of measuring: (1) delayed effects (especially where they are cumulative, or distributed through time); (2) threshold effects (effects that do not produce health damage except at a certain level, or threshold); and (3) interactive effects in which specified factors are damaging only, or especially, in combination. Under conditions of continued economic growth—particularly where these problems are of considerable societal concern—investments will be made into research that will ultimately provide an understanding of these problems and technologies to minimize their harmful effects.

A number of risk factors to physical and mental health, made possible by high mass consumption and technological development related to long-term economic growth, have become unusually prominent during the past two decades. Included are the immoderate consumption of alcoholic beverages, tobacco, and animal fats; increased reliance on non-human energy sources and the corresponding effects of a sedentary life, such as a decline in cardiovascular fitness and consumption of excess calories; and the improper use of medicine and psychotropic drugs.

Economic growth is also related to a decline in strength and stability of primary relationships, especially within the nuclear family and extended kinship networks, as indicated by high and increasing divorce rates; high proportions of the population living alone; the prevalence of female-headed households; and career-related disruptions to family formation and childbearing.

This general theoretical conception of the effects of economic growth on health and social well-being leads to the following specific hypothesis:

> The overall mortality rate for all ages of both sexes decreases in relation to long-term increases in real per capita income.

Long-term economic growth is defined, in this study, according to a measure of real per capita disposable income (i.e., accounting for the rate of inflation). The "pure" trend element of economic growth tends to have an exponential form. We therefore fit an exponential trend to the real per capita income and eliminate the cyclical component, which is measured by the variables discussed in the section on economic instability. The relationship between increase in economic growth and decrease in the overall and specific mortality rates is expected to hold under statistical controls for trends in detrimental factors historically associated with economic growth, such as cigarette smoking, heavy consumption of alcoholic beverages and animal fats, and measures of social isolation.

Economic Instability

Economic instability as used in this report largely represents the decline phase of the business cycle, indicated by a rising unemployment rate, high rates of business failures, and declines in labor force participation. As a result of economic instability, the population fails to gain benefits it would have gained if growth had continued at a previous rate. The loss, or failure to gain, in benefits is not evenly distributed. Persons with few or obsolete skills, workers in declining industries, older workers, and persons living in economically declining areas may be more adversely affected.

Under these conditions, certain groups in the population experience loss of, or serious damage to, their socioeconomic position. With persons who are downwardly mobile, the greatest psychological hardships occur when hope of re-establishing their former positions is lost. Among the mechanisms involved which lead to psychological harm are fear of loss of social identity; loss of basic economic resources; loss of primary social relationships; forced migration; and fear of their inability—and intense striving—to re-establish socioeconomic position.

It is also argued that recession will adversely affect those who work. A secondary set of mechanisms affects employees who remain at work. These include a lack of promotion and poor or competitive relations among staff; emphasis on high productivity; and work overload caused by critical shortages of employees and an atmosphere of anxiety and tension. Such conditions may generate for much of the population stresses nearly equivalent to those resulting from loss of employment.

We can derive the following general hypothesis from these theoretical conceptions on the effects of economic instability on societal pathology:

> Economic instability relates to a higher incidence of physical and mental ill health and criminal aggression.

From this general hypothesis, we can derive the following specific hypotheses:

Increased unemployment rates are related to increases in total mortality rates.

Increased unemployment rates are related to increases in cardiovascular mortality rates.

Increased unemployment rates are related to increases in cirrhosis mortality rates.

Increased unemployment rates are related to increases in suicide rates.

Increased unemployment rates are related to increases in mental hospital admission rates.

Increased unemployment rates are related to increases in imprisonment rates.

Increased unemployment rates are related to increases in the rate of crimes (known to police by type).

Increased unemployment rates are related to increases in the homicide rates.

The unemployment rate is the principal indicator of recession-related economic loss used in this model. At the macro, or population, level of analysis, an increase in the unemployment rate is an indicator of the extent of recession and/or structural economic decline. Economic distress reflects, for some part of the population, loss of work; loss of income; downward social mobility; increased stress; and possible increases in poverty levels. At this level of analysis, we can identify relationships between the aggregate unemployment rate—acting as an indicator of several sources of social distress—and measures of health and criminal aggression.

Other related hypotheses are as follows:

The increased rate of business failure is related to increases in total mortality, cardiovascular mortality, and suicide rates.

The business failure rate is a prominent indicator of recession and is argued to be important for self-employed and small business owners in the age group over 45, and especially over 65. This indicator tends to reflect a period of chronic anxiety, during which business persons struggle to save their firms from financial destruction and protect themselves from major changes in social status and way of life. We therefore anticipate a lag of within approximately 2–3 years between an increased business failure rate and increased pathology rates.

Decreases in labor force participation rates are related to increases in mortality rates, mental hospitalization admission rates, and criminal justice indices.

The unemployment rate and age- and sex-specific rates indicate many of the effects of recession-related losses and anxieties, but they actually measure only the extent to which members of the population are looking for work. Substantial proportions of those who look for work, however, do not find it, become discouraged, and leave the labor force entirely. This has been true especially of males over the age of 45 during the past two decades. Because most

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of these persons are unemployed for 1 or 2 years before they leave the labor force, we expect decreases in labor force participation to lead to increased pathology within 2 years.

Increases in labor force participation of the 16- to 17-year-old male population are related to increases in the arrest rate of persons under 18, the crime rate, and the homicide rate.

It is thought that increased labor force participation by 16- to 17-year-olds is a probable indication of alienation from secondary school as well as of decreased family income. The forms of pathology most likely to demonstrate alienation and poverty in the 16- to 17-year-old male population are property crimes and violent crimes.

Short-term decreases in average weekly hours worked are related to increases in total and chronic disease mortality rates.

Although not necessarily thought to result in profound psychological or criminal deviance, the stress that results from lost hours of work (and related lost income) during recession could trigger physiological reactions in susceptible individuals.

Economic Inequality

Economic inequality relates to the distribution of the product of economic development. For reasons which usually depend on structural changes in the economy, specific populations may not gain—or may actually experience losses in—economic status, while the majority of the population takes part in the process of economic growth. In the United States, youth, the elderly, women, and ethnic minorities frequently experience this situation.

Serious economic inequality has an even greater adverse impact, which is compounded during periods of economic growth, when the majority of society is earning at least moderate incomes and is not experiencing high unemployment. The most adverse effects are typically experienced by a significant proportion of youth of lower socioeconomic status, especially those with minority ethnic backgrounds. Many elderly persons who are chronically impoverished and a sizable proportion of female heads of households also experience the worst effects of economic inequality. Finally, the problems of long-term unemployment (as opposed to short-term cyclical unemployment) and low income have, in the last decade, been extended to former workers in the automobile, glass, steel and rubber, and other durable goods industries which have suffered long-term declines in employment.

In periods of economic instability, the economic loss and downward mobility typically associated with recession lead to expansion of socioeconomic status differentials; thus, the effects of recession become an even greater burden, proportionally, on the downwardly mobile. Economic inequality becomes even more acute when the general population is moving out of a recession. While some individuals gain, a portion of the population never recovers. This portion then experiences lower socioeconomic status and exhibits higher mortality rates.

The model allows for the impact of economic inequality on the two preceding relationships by developing hypotheses for specific populations.

> Increases in the unemployment ratio for all ages and both sexes are related to pathological indices.

The reason is that none of the age- or sex-specific unemployment rates corresponds exactly to the fluctuations of the overall unemployment rate. Using the ratio of age- and sex-specific unemployment rates to the total unemployment rate, we can more precisely identify the relationship of each group's unemployment rate to its own pathological pattern.

Just as the total unemployment rate does not measure precisely the unemployment situation of specific age and sex groups, neither does the total per capita (real) income precisely measure the real income gain or loss situation of each of the age and sex groups. The proposed solution is the same; namely, in addition to the total per capita income, the age and sex median income ratios are used.

Adaptational Error

Adaptational error associated with economic growth refers to the pathological results of specific patterns of consumption and production. Pathologies occur either because of ignorance, difficulty in changing habitual behavior, or potential damage to economic interests, which are linked to the consumption or production of specific items. Examples are immoderate alcohol consumption; abuse of prescription or illicit drugs; cigarette smoking; regular consumption of foods that are excessively high in fat content; environmental contamination with chemical toxins; greatly increased numbers of motor vehicles in the population; and failure to use protective devices, such as seat belts, crash helmets, and air bags, in road traffic. Another adaptational problem associated with economic growth pertains to disturbed social relations such as social isolation due to divorce or solitary living arrangements.

Two sets of hypotheses emerge: one that addresses those adaptational errors which result from increased mass consumption and a second that explains the social isolation that is associated with economic development.

The hypotheses involving risks resulting from high mass consumption are as follows:

> An increase in the heavy consumption of alcoholic beverage is related to high mortality rates, especially from cardiovascular illness and cirrhosis of the liver.

Although moderate levels of drinking may be protective with respect to some illnesses (especially ischemic heart disease), heavy consumption of alcoholic beverages is expected to show a positive relation to general mortality, especially from cardiovascular illnesses and cirrhosis of the liver, specified malignancies, abortions, accidents, infant mortality, and alcohol dependence syndrome possibly involving aggression or depression. In such cases, the lags are relatively short (0–5 years), as this population may already be chronically morbid or affected by intervening changes in cognitive

ability, mood, motor ability, or other factors that could influence their mortality rates.

An increase of cigarette consumption per capita is related to higher mortality rates, especially from cardiovascular and respiratory diseases.

The per capita consumption of cigarettes is expected to be positively related to mortality rates, especially from cardiovascular and respiratory disease. In this case, the lags may be short or long. Short lags of 6 months to 7 years occur in a population that is already seriously ill and for which additional smoking exacerbates serious disease. For other populations, the lag is generally 10 to 15 years.

A high level of consumption of animal fat is associated with high mortality rates, especially from cardiovascular disease and malignancy.

A high level of consumption of animal fat is a risk factor in a great many causes of illness—especially in cardiovascular disease and malignancies. The consumption of animal fats per capita is expected to be related to total and ischemic heart disease mortality, with both short (less than 5 years) and long (15–20 years) lags. The short lag relationship is particularly pertinent to populations already afflicted with cardiovascular disease.

Increases in automobile registration rates and miles driven per capita are related to higher mortality rates due to auto injuries.

Automobile registration rates and miles driven per capita are expected to be positively related to mortality from injuries—especially those involving youth—with a lag of less than 3 years.

Hypotheses involving risk factors related to a decline in primary relationships follow:

A high rate of divorce is related to a higher risk of mortality and mental health problems.

This is one of two prime indicators of potential lack of social integration or social support. It is a standard finding in psychiatric epidemiology and recent studies of morbidity that the divorced population is at considerably greater risk of illness and mortality.

A high proportion of persons living alone is related to a high risk of mortality and mental health problems.

The number of persons living alone and an increase in the proportion of female heads of households indicate a potential lack of social support. They are meant to reflect recent findings that social contact has a negative influence on morbidity. They uphold as well tenets of classic sociological literature on the alienating aspects of advanced urban living conditions.

An increase in the proportion of female heads of households is related to an increase in the total mortality of persons under age 15.

The proportion of female heads of households is also related to poverty, as households headed by females are disproportionately represented in the number of poor households. Poverty places children at higher risk of morbidity and mortality.

Ameliorative effects of Aid to Families with Dependent Children are tested by the following hypothesis:

> Increases in the number of poor households receiving AFDC are related to decreases in the mortality of the young.

Random Shocks

An additional set of factors, "random shocks" to the population, needs to be taken into account in order to use this economic change model for detailed explanation or prediction. Random shocks include: (1) extremely disruptive phenomena, such as severe climatic irregularities; (2) epidemics; (3) events which damage the economy and the population in ways that go beyond usual economic predictions, such as natural disasters or political or international economic crises; and (4) important demographic changes such as were brought about by the "baby boom."

The following hypothesis, for example, is suggested by demographic developments:

> An increased proportion of males aged 15 to 24 in the population is associated with an increase in criminal activity.

This hypothesis was tested in the 1976 report and showed statistical significance. In the current study, however, the potential relationship between the ratio of young adult males in the population and the criminal justice indices did not show evidence of an active relationship. It is possible that a more appropriate variable may be the youth unemployment ratio. The large numbers of males aged 15 to 24 may have influenced the relatively high youth unemployment rate, which may in turn influence criminal aggression.

Involvement in war is a random shock adversely affecting the population's health and life span, particularly of those actually engaged in military actions. Size of the military population is correlated with the number of people on active duty for combat. One hypothesis is:

> As the rate of military personnel in the population goes up, indices of pathology and mortality rates increase, especially for the military-age population.

Limitations of the Model

In examining the specific cause of a relationship it is necessary to be aware of the possibility that an unobserved external factor is responsible for changes in both the predictor and predicted factors. In that case, the observed correlation between "explaining" and "explained" factors does not reflect a causal relation between them and instead results from their joint relation to a third factor.

In the present study, there is no external unspecified factor which is known to influence regularly both the state of the economy and, independently, mortality or morbidity rates. On occasion,

unusual conditions such as war may influence economic conditions and health, but they do not do so on a continuous basis. There is no known external factor which regularly influences the state of the economy. Indeed, if such a factor were known, we would be able to use it in efforts to forecast economic conditions.

A different approach to the problem of the unknown external factor is to ask whether phenomena that are, for example, influenced by economic conditions also influence health. In this study, we ask that question with respect to several factors known to affect health adversely—alcohol, cigarette, and fat consumption per capita, social isolation, etc. The problem then is whether, if one controls for the effects of such additional factors, the relationships between economic conditions and health and social well-being still can be observed. In this study, such external factors are explicit in the model to be tested, under the general classification "adaptational errors associated with economic growth." In fact, we find that controlling for the adaptational error factors usually strengthens rather than weakens the relationship between economic conditions and the population's health and well-being.

We conclude, therefore, that the hypotheses do not appear to be influenced by issues of random occurrence or lack of control for factors which should have been taken into account. As in all studies based on statistical procedures, however, the findings can only be taken as evidence in favor of, or against, the specific hypotheses tested.

In this case, for example, considerable statistical support is found for the statement that economic instability is related to adverse change in national health and well-being. But it cannot be said that our findings prove the existence of causal relationships. Statistical studies only permit statements of probability, not absolute proof.

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V. RESULTS

Summary

For each of the five elements of the Economic Change Model of Pathology, the current study finds the following:

Economic Growth

Long-term increases in real per capita income show statistically significant relationships, almost without exception, to decreases in the social pathologies investigated in this report. Although the strength of the relationships varies by pathology and age group, economic growth is associated with decreases in total mortality, cardiovascular mortality, suicide, and psychiatric hospital and prison admissions.

Economic Instability

Measures of economic instability show statistically significant relationships to increased mortality of all ages, and for all classifications of sex and race. Similar relationships are found with measures of mental ill health and criminal activity. The principal measures of economic instability are unemployment, business failure rate, labor force participation, and average weekly hours of work.

Economic Inequality

Measures of economic inequality, principally age-specific unemployment ratios, are associated with increases in the most deviant pathological behavior investigated in the report: criminal aggression and pathological uses of alcohol.

Adaptational Error

The measures of adaptational error associated with economic growth investigated in this report are unequivocally related to pathological indices. Increased alcohol consumption relates to either increases or decreases in the indices depending on the type of beverage. Increases in all other adaptational errors are associated with increases in all the health and social pathologies.

These results are explained in detail in the following pages.

Interpretation of Relationships

The hypotheses of the study indicate that trends and fluctuations in national health levels are influenced by national economic changes and are similarly influenced by national patterns of consumption, production, and social isolation.

The relationships between national economic changes and national health levels are based on simple and compound factors.

Simple factors are those that are measured by one variable, such as alcohol consumption or animal fat consumption, and that can be interpreted directly at the individual level. For example, the meaning of per capita cigarette consumption as a health risk for heart disease is identical for both the individual and the population.

In contrast, compound factors, such as economic instability, are multidimensional and can be measured by several variables which have different implications for different individuals. For example, under conditions of economic instability or recession, unemployment, substantial loss of income, departure from the labor force, increased work stress, home mortgage foreclosure, and forced migration will increase. But an individual usually will not experience all, or even most, of them.

To capture the harmful effect of recession as a health risk factor, we are able to use only a few variables to document economic loss. The measures of economic instability—rates of unemployment, labor force participation, and business failures—in fact represent more than they directly measure. Indirectly, as a group, they measure a portion of the general population's recession-related experience. The experience of individuals, however, may include economic loss, the fear of further loss, and the attempt to regain socioeconomic position.

Correlation and Causality

Another point to bear in mind in interpreting these findings is that the present study can only be used as evidence in favor of, or against, the hypotheses put forward. The findings cannot provide proof of causal relationships. It is commonly held that causal statements have three minimum requirements: first, that the causal variable precede the affected variable in time; second, that there in fact is a relationship between the variables (that is, the observed relationship is not due to chance); and third, that some other variable does not cause both events in the model. The violation of any of these criteria would prohibit the finding of causal relationship.

This study attempted to account for each of these factors. Complete control, however, was impossible, and claims of direct cause and effect are therefore not made. For example, even though an elaborate time lag structure is specified, some relationships are found with a zero time lag; that is, the relationship is measured as occurring within 1 year. In these cases it is not known if the time precedence requirement is met. Also, even though the relationships are statistically significant, there is a small risk that they are due to chance, which would violate the second requirement of causality. Finally, although there are no known events that influence both national economic change and national health, research in the field is not sufficiently advanced to preclude the possibility. This is especially true at the individual level, where the complexity of the relationships between individual's economic condition, stress, and mental and physical health are not fully understood.

When a finding is observed to be statistically significant, we then wish to know whether it is consistent with: (1) other findings in the same study, (2) findings of related studies, and (3) theoretical considerations. Statistical significance, internal consistency, and con-

sistency with the literature provide the evidence of the reliability and validity of the findings.

The Implications of Linearity and Nonlinearity

The findings reported in the present study assume, from a statistical standpoint, that the relationships between variables are linear. This means that the model assumes that the change in social pathologies is the same for all incremental changes in the measures of economic change. This assumption of linearity is for the ease of measurement only; in fact we have several reasons to believe that at least some of the relationships probably are not precisely linear.

It is possible that, for example, an increase in the unemployment rate from 10 to 11 percent would cause greater social damage than an increase from 2 to 3 percent. One assumption of linearity, however, is consistent with the notion that it is typical for the least educated and least skilled workers to show the highest unemployment rates at the point at which recession is judged to be most severe.

On the other hand, the unemployed of lowest socioeconomic status may feel some alleviation of the sense of self-blame and social blame at being without work or income during the worst part of the recession. Then, as recovery begins and unemployment rates fall slightly, there is likely to be a period in which the unemployed of low socioeconomic status are the principal population group that is unable to secure re-employment. Under such conditions, the psychological impact of recession on low socioeconomic groups may be most severe. These possibilities, while in principle quite plausible, have yet to be investigated in thorough statistical detail.

Equally important possibilities of non-linear relations exist in the case of the non-economic factors influencing health and social well-being. Consumption of alcohol, tobacco, and animal fats and production of toxic chemicals are prominent examples. There may be low thresholds, per capita, at which these substances are not harmful to the population's health. There may be thresholds above which they are extraordinarily injurious and may actually increase the risk to health exponentially. It is also possible that some of these substances may be more damaging when taken in combination with one another.

At present, our knowledge of such non-linear possibilities is inadequate. For convenience of measurement, we maintain only the simplest assumption, that of linearity. The caveat must be stated, nevertheless, that the structural features of our current model may be less than precise in some instances.

Comparison With the 1976 Findings

The basic finding of the 1976 report that long-term economic growth has a beneficial impact is reaffirmed. Also reaffirmed in the current report is the extraordinary importance of recession and its relationship to societal pathology, which can be seen in virtually all the indices of mental and physical illness and criminal justice activity. The present study reiterates the importance of the un-

employment rate as the most reliable measure of recession-related injury. The present study shows new evidence that business failure rates and declines in labor force participation play a substantial role. The basic relationships between recession and the pathological measures are shown in this study, as in the previous one, to take place within a 6-year period. In the present study, however, we are also able to measure for the first time the pathological implications of recession which may occur for at least another decade beyond the initial 6-year period of lag.

The relationships between the adverse effects of recession and social well-being have changed as a result of specific measures of economic inequality which were not examined in 1976. In the 1976 report covering the years 1940–73, the primary measure of recession, the unemployment rate, was shown to be the major short-term factor related to homicide, mental hospitalization, and cirrhosis mortality. In the present study covering 1950–80, the economic inequality measures are at least of equal importance to the measures of recession for these pathological indices.

The importance of economic inequality is evident in each of the three pathological measures. With respect to homicide, it is the youth unemployment ratio that shows the dominant statistical relation, which may reflect the fact that homicide has increasingly become associated with young males. With respect to youth unemployment, the most serious problem has become one of economic structure rather than recession. In the case of state and county mental hospitalization, the last two decades have shown greater proportional admissions of the poor. The insured and middle-class populations have acquired greater access to psychiatric care in general hospitals, outpatient departments, and community mental health centers. It is therefore likely to be the populations whose mental illnesses are serious and chronic and whose unemployment situations are semi-permanent, rather than strictly recession-related, that make up the great part of public mental hospital admissions.

In the case of liver cirrhosis, increases in the ratio of age-specific income to overall population income have become more important in the short-term relationships to economic change, in comparison with the effects of overall national economic growth. Thus, alcohol may have come into greater use in cases of economic stress that are not confined to the poorest populations, but it is increasingly implicated in stress situations experienced by groups subject to relative economic disadvantage.

New Findings

The most important statistically significant relationships for each element of the Economic Change Model of Pathology are described below. As with all reported relationships, these findings are presented without claim of demonstrated cause and effect.

1. Economic Growth

The overall mortality rate for all ages, both sexes, and the two major racial groups decreases in relation to long-term increases in real per capita income. The relationship is also especially promi-

nent in the major categories of cardiovascular mortality and suicide. These conclusions conform to our general theoretical assumption that economic growth is the central feature of long-term improvement in the life span at all ages.

REAL PER CAPITA INCOME

The long-term exponential trend in real per capita disposable income is the most important indicator of long-term economic growth. As per capita income increases—at all ages, and for both sexes and major racial groups (Table I)—mortality rates decrease. The same is true for cardiovascular disease mortality, at all ages and for both sexes, as well as for the two major disease subclassifications of ischemic heart and cerebrovascular disease (Table I). With increased income, suicide by males—which usually is considerably more related to economic changes than suicide by females—decreases; this relationship is seen at all ages over 45. Admissions to psychiatric hospitals and prisons also decrease in relation to a growth trend in real per capita income.

At the same time, annual decreases in real per capita income are related, after a 1-year lag, to a higher arrest rate for all crimes in the age groups 18–24, 25–34, and over 55. This important relationship was specifically checked in relation to serious crime known to the police, with separate analyses for burglary, larceny, auto theft, robbery, assault, and rape. Only rape did not show a decrease with an increase in per capita income. For the other crimes, the relationship occurred only within 1 year. Finally, an increase in the arrest rate for crimes involving drug possession and sales were also related to decreases in annual per capita income within 1 year (Table III).

2. Economic Instability

Measures of economic instability are related to increased mortality at all ages, and for all classifications of sex and race. When economic instability is measured by the unemployment rate, associated increases in total mortality are usually seen over a 15-year interval, with the bulk of the increases occurring within 6 years (with particularly pronounced effects in the first 2 to 3 years). Other measures of economic instability—increased business failure rates and decreased labor force participation rates—are related to overall mortality increases with lags of 2 years and less. Measures of economic instability are related to indices of disturbed mental health and illegal activity within 6 years, and are especially prominent within 3 years.

These findings confirm our theory that the economic losses of recession, and other departures from smooth economic growth, are associated with increased mortality, mental ill health, and criminal activity.

UNEMPLOYMENT RATE

The total unemployment rate shows the most consistent relationship to the pathological indices. For each one of the pathologies, a statistically significant relation to the unemployment rate is found.

For total mortality at all ages (including infancy, 5-year age groups from 1-4 through 65-74, and 75 and over), for both sexes, and for nonwhites, the basic relationship is evident (Tables I and II). In general, the lag between the unemployment rate and mortality rates conforms to the specifications of the lag structure of the general model (see *Lag Structure,* pp. 39-40). For total mortality and mortality resulting from chronic diseases, two principal lags were specified: (1) a lag within the first 0-5 years after an increase in the unemployment rate, which comes to a peak at 2-3 years, and (2) a distributed lag over the following 6 to 15 years, which comes to an early or late peak depending on the cause of death. Two lags are seen in the relationship of mortality to unemployment, one of 2-3 years and another distributed over a range of 7-15 years, with a peak at approximately 10 years. These relationships prevail whether total or age-specific unemployment rates are used in the 2- to 3-year lag relation and whether the data are analyzed from 1950 to 1978 or to 1980.

The cardiovascular mortality rate shows a similarly powerful relationship to the unemployment rate, typically with lags of 3 years (the peak year of short-term lag) and 10 years (the peak of the 7- to 15-year lag span) for all 10-year age groups from 25 to 34 to 75 and over and for each sex. For both sexes, an additional lag of 5 years is seen in age groups from 25 to 54 (Table I). These relationships with the unemployment rate for total cardiovascular mortality also follow the basic pattern of lags found for total mortality as specified by the general model. These findings for total cardiovascular mortality are further substantiated by findings of similar relationships for diagnostic subclassifications—ischemic heart disease (with a peak lag of 3 years) and cerebrovascular disease (with peak lags of 3 and 10 years) (Table I).

The case of cerebrovascular (or stroke) mortality is an excellent example of confirming evidence for the general model as applied to chronic disease. Cerebrovascular mortality shows its first major relationship to unemployment (within a 0- to 5-year period) with a peak lag of 3 years; the peak period of stress following unemployment usually occurs with a lag of 2-3 years (see *Lag Structure,* pp. 39-40). The relationship between cerebrovascular mortality and the unemployment rate reaches a second peak after 10 years. The first lag however, occurs within 0-5 years and identifies both: (1) increased fatalities among persons who had cerebrovascular disease, and (2) increased incidence of cardiovascular disease that has not resulted in mortality within 5 years. The second lag, which occurs within 6-15 years, conforms to the assumption that a portion of the increased incidence of cardiovascular disease which occurs within 5 years of recession results in increased cerebrovascular mortality within the next decade.

For cirrhosis mortality, the unemployment relations are seen at peak lags of 3-9 years, depending on age and sex (Table II). For suicide, the relationships of unemployment rates to mortality usually occur with a 0- or 1-year lag for males at ages 15-74.

Total admissions to all mental hospitals are related to the unemployment rate with a lag of 1 year. Admission of resident patients to state hospitals, by specified age groups, is related to unemployment with lags which correspond to the findings for overall mortal-

ity and for suicide. The most prominent peak lags are approximately 3–4 years, but lags are also found within 1 year, as in the case of suicide, and at approximately 6 years, as in the case of cardiovascular disease mortality (Tables I, II, III).

Homicide shows a relationship to the unemployment rate only for selected age and sex groups—for example, females over 45 and elderly persons. Such patterns suggest family violence, including child abuse (both sexes aged 1–14), is implicated or robbery is involved. Other crime indices behave much as mortality does with respect to their relationships with the unemployment rate. Crimes known to the police, including burglary, larceny, automobile theft (grand theft), robbery, assault, and rape, are related to the unemployment rate with a peak lag of 3 years. The same is true for arrest rates at virtually all ages and for the white collar crimes of fraud and embezzlement.

There is also a prominent relationship between unemployment and arrest rates, including those for white collar crime, with a 0 lag (especially ages 18–34). The relationship is similar for robberies reported to the police (with a 3-year lag) and to homicide. For imprisonment, the basic relationship to unemployment is also seen with a 0 lag (Table III). It is possible that the absence of a relationship between unemployment and imprisonment after the first year is due to: (1) lack of data classifying imprisonment by crime or age, or (2) disturbances, within the criminal justice system, in the relationship between arrests and imprisonment, which we were unable to measure.

BUSINESS FAILURE RATE

The rate of business bankruptcy is the economic indicator with the second most prominent relationship to mortality rates. It was expected that this supplementary indicator of recession, and especially of psychological stress, would be particularly important for males, and some females, at the peak of their careers. Even during severe recessions, unemployment is least likely to affect men (particularly) in the 45–64 age groups, because they are likely to have job seniority. Thus, only if firms terminate their operations is it likely that, from the standpoint of the population aggregate, large numbers of senior staff will undergo major financial loss or destruction of career.

Another group we expected to show substantial harm as a result of business failure was the elderly whose incomes depend on investments or who are owners, operators, or employees of small businesses. (Small businesses have a particularly high failure rate during recession.) Many of the elderly are retirees but continue to remain economically active, either for the income or for the fulfillment that work can provide.

The independent relationship of business failures to total mortality is difficult to measure because it frequently occurs with a peak lag of 2 years, in which case the unemployment rate is an equally significant factor. Nevertheless, it shows a significant relationship, with a zero lag, to male mortality rates at ages 50–64 and to mortality for both sexes combined at age 75 and over. The findings for business failures indicate a very strong relationship for a segment of

the late middle-aged male and elderly populations, and are quite close to theoretical expectations. This relationship of business failures to total mortality became increasingly powerful the closer the year under study was to 1980, the latest year for which mortality data are available.

It is with cardiovascular mortality that the relationship is especially observable, probably because one of its two peak lags (2 years) does not conflict with that of the unemployment relationship, which, for cardiovascular disease, has a lag of at least at 3 years. For cardiovascular mortality, the first peak in the relationship with the business failure rate occurs with no lag for all male groups ages 45–54 and over. In the case of suicide, the relationship to business failures is significant in several age groups, and especially for males, and thus influences the overall rate as well (Table II).

In light of the hypotheses that recession has a long-term impact on mortality rates as discussed above (see *Lag Structure*, pp. 39–40), business failure rates were examined for the presence of relationships to total mortality with lags distributed within 6–15 years. At all age groups over 45 years, the hypothesized distributed lag relations were found. Moreover, the long lags in business failure relationships are not simply substitute measures for identical long lags in the case of the unemployment relationship to mortality, which are found distributed over 7–15 years. Rather, the two principal indices of recession—unemployment and business failures—show independent long-term relationships to mortality.

LABOR FORCE PARTICIPATION

In addition to the unemployment rate, as age-specific labor force participation rates decline, total mortality rates frequently increase, with no lag. In such cases, the relationship is with mortality at ages 55–64, 65–74, and 75 and over, as well as for infant mortality associated with male labor force participation at ages 20–24. The latter relationship, similar to that found for infant mortality in connection with unemployment, is an indication of decline in family socioeconomic status, with related declines in nutrition, medical care, and psychological stability. Substantial relationships between the rate of suicides for females and the age-specific female labor force participation rate are seen with lags of 0–3 years for ages 35–44 through 65–74.

In contrast to labor force participation for all other age groups, the participation rate for the 16- to 17-year-old population was expected to show a positive relation to the pathology indices. It was expected that the substantial involvement of 16- to 17-year-olds in the work force tended to indicate a comparative lack of involvement in or alienation from high school scholastic activity and greater concern over economic competition with adults, against whom 16- to 17-year-olds have a comparative disadvantage. We observe, indeed, that 16- to 17-year-old labor force participation is positively associated with the arrest rate of persons under 18 (with a 1-year lag), with male and female homicide rates with zero lag, and with total mortality rates for both sexes aged 15–19.

AVERAGE WEEKLY HOURS WORKED, MANUFACTURING INDUSTRIES

By comparison to unemployment and business failures, hours worked is a somewhat less important indicator of the relationship between health indices and recession in the United States. This business cycle indicator tends to show stable inverse relationships to total mortality rates among groups aged 35–44 and 55–64, with a 0 lag. Like business failures, it shows some relationship between increased mortality and recession with no lag, though the principal relationships occur with longer lags.

3. Economic Inequality

There are, of course, important elements of economic inequality in the measures representing economic instability, because some groups lose in periods of recession and economic disturbance, while most of the population does not. This situation has the effect of increasing the extent of inequality. The psychological sense of inequality is further aggravated for the downwardly mobile during the subsequent period of sustained economic expansion.

In the present study, however, we add specific measures of economic inequality identifying, for example, the differential rate of unemployment in specific age groups compared to that of the general population. Using such a specific measure of economic inequality, we find that it shows a particularly strong relationship to increased mental ill health, criminal aggression indices, and pathological uses of alcohol. These findings conform to theoretical expectations in that they represent the most deviant pathological behavior, as usually judged by society, and frequently reflect a deeply alienated state of mind. The condition of being unemployed at a time when the population generally is not experiencing recession is similarly likely to reflect a state of alienation.

AGE-SPECIFIC UNEMPLOYMENT AND INCOME RATIOS

The unemployment ratio (the unemployment rate of a particular worker group divided by the total unemployment rate) for males aged 15–24 is the most prominent of the unemployment ratios in terms of relationship to the pathological indices. The outstanding relationship is to the homicide rate. At nearly all ages for male homicide, the 15–24 male unemployment ratio shows a peak relationship with no lag; for female homicide, the typical peak relationship occurs with a 3-year lag. This may indicate that homicide of women involves individuals whose alienation had developed over an extended period (over at least 3 years). The 15–24 male unemployment ratio is also related to the state imprisonment rate, with no lag (Table III).

Age-specific unemployment ratios are especially prominent with respect to rates of mental hospital utilization, at all ages from under 25 to over 65, with a 1-year lag. The unemployment ratio over 65 is particularly significant in its association with the total psychiatric hospital admission rate.

The male non-white unemployment ratio is significantly related to the state prison admissions rate, with a peak lag of 2 years; it is

also related to the mental hospital population size for ages 45–64 and over 65, with a zero lag.

The age-specific income ratio was found to be significantly related to the cirrhosis mortality rate, with a peak lag of 1 year for males aged 25–64 and over 75 and for females aged 35–74.

4. Adaptational Error Associated With Economic Growth

The relationships of these factors to our measures of pathology also conform to the expectations of the general model. Except for alcohol consumption, which shows both positive and negative relationships, depending on the specific beverage and pathology, all of these factors unequivocally relate to increases in pathological indices.

ALCOHOL CONSUMPTION PER CAPITA

Alcohol consumption, which serves as a control variable in this study, typically shows an important relationship to virtually all the pathologies under study, with lags of 5 years of less. Total consumption, which emphasizes beer, tends to be statistically influential in pathologies that involve young adult populations including: mental hospital patient populations, arrest rates, crimes known to the police, narcotic arrest rates, suicide of males in several age groups, and suicide of females aged 15–24. It is very strongly associated with homicide of males and females over almost the entire age span and appears to account statistically, along with narcotics arrests, for much of the long-term pattern of homicide.

Spirits consumption per capita is important in total mortality patterns for virtually all ages and both sexes, with a zero lag. In the case of cardiovascular disease mortality, spirits consumption shows relationships for males aged 25–44 and for females aged 35–64 and over 75. It is also significant and positive for ischemic heart and cerebrovascular diseases (Table I). In the case of cirrhosis mortality, spirits consumption shows a stable relationship, with lags of less than 3 years, for nearly all ages and both sexes. Attempts to measure longer lags in the spirits-cirrhosis relationship were unsuccessful. In fact, it is thought that this relationship is probably cumulative, i.e., that marginal short-term increases in alcohol consumption can be fatal for individuals who already have serious liver damage due to heavy drinking for 10–20 years.

In the suicide relationship, spirits consumption shows a 0 lag for males aged 35–54 and females 25–54. Spirits consumption is significantly related to mental hospital admissions, with a peak lag of 3 years, which is possibly reflected in the similar 3-year lag in the relationship between spirits consumption and mental hospital population size at over 45 years of age. Spirits consumption per capita is also positively related to hospitalization, with a 0 lag, for the population under age 25. Spirits consumption is also associated with arrests, with 3-year or shorter lags, for the population over 35 years.

Wine consumption per capita is inversely related to cardiovascular mortality of males of ages 25–44, and positively related to that of both sexes over the age of 75. The predominantly inverse relationship to cardiovascular disease is probably accounted for by is-

chemic heart disease, in which the relationship with wine consumption is also inverse (Table I). On the other hand, wine consumption is strongly and positively related to cirrhosis mortality, usually with a peak lag of 3 years, for male age groups 35–74 and for female groups 25–64 and over 75. Wine consumption is also positively related to the suicide rate of women at ages 35–44 and 55–74.

Beer consumption per capita is positively related to total infant mortality (no lag), probably reflecting immoderate use of alcohol during pregnancy, and for persons aged 15–34 (with a lag of 2 years for the combined sexes). At the same time, beer consumption is inversely related to cardiovascular mortality for males at nearly all ages. This probably reflects the strong relationship between an increase in beer consumption per capita and a decrease in ischemic heart disease mortality, with a peak lag of 5 years. This inverse relationship between beer consumption (and, to some extent, wine consumption) and ischemic heart disease probably reflects the medically well-known observation that moderate alcohol consumption is, statistically, a beneficial factor in this illness. Finally, the ratio of beer (which reflects the weakest form of alcohol as measured by ethanol content) to total alcohol consumption is consistently inversely related to cirrhosis mortality at 0 lag for nearly all ages.

CIGARETTE CONSUMPTION PER CAPITA

Like alcohol consumption, consumption of cigarettes per capita has a pervasive relationship to mortality rates, but, unlike alcohol, the relationship is always positive. At all age groups for males, and for nearly all female age groups, the relationship between cigarette consumption and mortality occurs with lags of 4–8 years, with the last lag coming to a peak at the 5-year mark. It is possible that the lags may be indirect among age groups which do not smoke—nonsmokers may reside or work in an environment pervaded by smoke, and/or such an environment may present other risks associated with respiratory illness. Alternatively, the lag between smoking and mortality may have an effect which increases mortality or morbidity in parents or relatives of those whose risk of mortality has increased; in that case, the direct influence of cigarette consumption might be brought about by social isolation or decline in economic status due to illness or death. The importance of cigarette consumption to cardiovascular mortality is also seen in the significant relationships between cigarette consumption and ischemic heart disease and cerebrovascular disease mortality, with 10- and 7-year peak lags, respectively (Table I).

ANIMAL FAT CONSUMPTION PER CAPITA

The significant relationship between animal fat consumption per capita and ischemic heart disease mortality is found with a peak lag of 1 year (Table I).

CHEMICAL PRODUCTION

Based on clinical studies, synthetic organic chemicals are known to pose significant risk of liver disease. It is thought that liver damage may be greater in individuals who use alcohol heavily and who are exposed to toxic industrial or pharmaceutical chemicals. This has led to the hypothesis that chemical production may be positively associated with cirrhosis mortality rates. The relationships were found, with a 1-year lag, for males at ages 35–74, and for females at ages 45–64. The wider age span in the relationship for males is consistent with the hypothesis that males experience greater occupational-related exposure to chemical toxins.

AUTOMOBILE OWNERSHIP

Automobile ownership per capita, which is greater in periods of long-term economic growth, is a control variable expressing the potential for mortality due to automobile use. It shows a stable positive relationship to mortality for both sexes in the age range 10–44.

NARCOTICS ARREST RATE

The recreational use of street drugs is another adverse effect of long-term economic growth. The narcotics arrest rate, of course, has importance in periods which are economically unstable as well. The rate of narcotics arrests is frequently used in this study to indicate the shape, over time, of illegal use of narcotics by the general population. This narcotics use indicator is significantly related to the homicide rate at nearly all ages, with lags ranging from 0 to 3 years, but the peak lag is 1 year. The narcotics arrest rate also shows strong associations with mental hospital admissions with a peak lag of 1 year, admission of mental hospital resident patients under age 25 with lags of zero and 1 year, and total state prison admissions with a lag of 1 year (Table III).

DIVORCE RATE

The divorce rate is found to have a positive relationship with virtually all of the pathological indices under study. In nearly all age groups, there is a stable statistical link with no lag. This relationship affects fewer age groups in cardiovascular and cirrhosis mortality, except that it is nearly always present in the case of male cirrhosis with a 1-year lag. The relationship is found in the case of suicide for both sexes in young and middle-aged groups (where divorce is most frequent), with a typical peak lag of 2 years.

The divorce rate is, unexpectedly, related to male homicide for all but two age groups, with peak lags of 0–3 years, while only one female age group (45–54 with a 1-year lag) shows the relation. Arrest rates are related to divorce rates for age groups under 18 and 45–54, with no lag. The divorce rate is also seen as a statistical contributor to mental hospital admissions, with a zero lag, and to admission of mental hospital resident patients, with peak lags of 1 and 3 years, for age groups 25–44 and over 65, respectively.

LIVING ALONE, PROPORTION OF POPULATION

The proportion of the population living alone, like the divorce rate, is an important indication of social isolation and is positively related to the pathological indices. In the case of total mortality, the relationship, when found, is seen with no lag. The shortness of the lag strongly suggests that it is family and other social disintegration, occurring well before the decision to live alone or divorce, that is primarily responsible for the timing of these statistical relationships. The relationship applies to nearly all age groups among males, while for females, after occurring at infancy, it does not reappear until the mid-20s. For females, it is especially consistent after age 55. Similarly, the relationship between living alone and cardiovascular mortality can be seen for nearly all ages, for both sexes, with lags of 0–1 year. For suicide, the relationship is statistically significant in five of the male and female age groups, with lags ranging from 0 to 3 years. The relationship between living alone and homicide is not as definite as for suicide, only affecting three male age groups and two female groups, with lags of 0–3 years. The arrest rate, on the other hand, shows a relationship for ages 18–44 and over 55, with lags of 0 and 1 year.

FEMALE HEADS OF HOUSEHOLDS

The proportion of female heads of households is significantly related to total mortality rates in males and females at ages 1–14. This indicator of low-income status had a consistent relationship to mortality with a 1-year lag.

AID TO FAMILIES WITH DEPENDENT CHILDREN (AFDC)

The importance of the inverse relation of AFDC to total mortality is demonstrated in the cases of infant mortality for both sexes, with a zero lag, as well as female mortality at ages 1–4 and 5–9, with peak lags of 2 and 3 years, respectively. As more money is available for nutrition and health care during childhood, including the first year of life, mortality declines. AFDC provides benefits for enhanced nutrition and medical care, but it also indicates the absence of an adult male who would ordinarily provide some security from physical harm to a mother and her children. The result is a relationship between AFDC and homicide of males aged 1–4 and 5–14 and of females aged 1–4, 5–14 and 14–24. AFDC is also related to state prison admissions, with no lag, and suicide by males aged 15–24.

5. Random Shocks

MILITARY PERSONNEL

Military personnel on active service was used as a control in the analysis of total mortality for males at ages 15–24 and 25–34. The positive relationship was found with lags of 0 and 1 year, respectively. Military service, like other major life changes, was hypothesized to have disorganizing effects, for some individuals, on career patterns, family formation, and family stability. Related health

risks of military service could include accidents, violence, and immoderate use of alcohol or drugs.

PROPORTION OF THE POPULATION IN THE 15–24 AGE GROUP

In the United States since 1950, crime has been predominantly committed by males aged 15–24. It has been thought by specialists that the size of the younger population, in comparison to that of the overall population, is a factor in crime trends. This is argued on the grounds that: (1) a higher youth-to-overall population ratio is responsible for higher youth unemployment rates and (2) a more youthful population is at greater risk of committing crime. Elaborating on the first point, a higher youth unemployment rate would be an important factor in the overall unemployment rate and would be especially important in the youth-population unemployment ratio.

The 1976 report stated that both the overall unemployment rate and the unemployment ratio of youth aged 15–24 were significant influences on homicide and imprisonment. In the present study, in which total unemployment and the 15–24 unemployment ratio are included, and where alcohol consumption, narcotics arrests, divorce rates, and the proportion of the population living alone are controlled, we are unable to find an independent significant relation for the 15–24 population ratio for the various crime indices. Therefore, to the extent that the 15–24 population is indirectly a factor in the crime indices, it probably acts through its effects on unemployment rates or age-specific unemployment ratios, or perhaps on the extent of alcohol or drug use, divorce, or the proportion of the population living alone.

6. The Issue of "Beneficial" Effects of Recession

As in previous analyses, this study again shows a relationship of recessionary indices, such as unemployment and business failures, to increased pathology generally with a 2–3 year lag. Because of this pattern, it could be asked whether, with no lag, the relation of unemployment to mortality may be inverse. This question reflects the possibility that a decrease in labor activity may lead to lower mortality within one year, as occupational risks associated with being at work are removed.

This question can be answered in two ways. First, the only significant occasions on which unemployment rates are inversely related to mortality rates involve simple bivariate relations—i.e., without controls for the relevant epidemiological risk factors. In other words, when, as in the present study, alcohol, cigarette and fat consumption, and social isolation factors are taken into account, there is rarely an inverse relation between unemployment and chronic disease mortality rates with a zero lag. (In the case of automobile accident mortality, incidentally, necessary controls would include car ownership and miles traveled per capita.)

Second, we have tested more directly whether being at work represents an increased mortality risk within one year by examining average weekly hours worked in manufacturing industries and age-specific labor force participation rates. In both cases, with a lag of zero (i.e., within a year), decreased average hours of work per week

and labor force participation are related to increased mortality. In addition, it was reported above that increased business failure rates are related, for example, to increased cardiovascular mortality rates with a lag of zero (as well as with a two year lag).

It is therefore clear that decreased labor activity, with appropriate statistical controls, poses an increased risk to mortality within one year. At the same time it should be emphasized that these findings are consistent with the research literature indicating long-term (i.e., 10-30 years) increases in mortality risk in specified occupations, especially involving malignancies and chronic respiratory diseases. Further, as has been discussed, during recession the risk of work stress by those who remain employed is also likely to increase due to: (1) threat of loss of income, career, and social contacts, and (2) increased tension and demands for increased productivity, and lower margins for error.

7. Indirect Effects of Recession on Social Pathologies: Experimental Results

The principal objective of this study is to estimate the effects of changes in economic conditions on measures of health and social well-being. To obtain such estimates, it was considered essential to examine the relationships between economic indices (including per capita income, unemployment rates, and business failure rates) and pathology indices, holding constant, or controlling for, those factors which might otherwise influence the pathological indices. For example, heavy alcohol and cigarette consumption were considered control factors.

At the same time, it was assumed that such factors as heavy use of alcohol and tobacco are greatly influenced by situations of extraordinary psychological stress—especially stress that might arise out of economic disturbances. It was further assumed that, at the national level, other factors, especially including increases in real per capita disposable income, would largely be responsible for the trends and fluctuations in overall per capita consumption of these substances.

Our findings tend to confirm the assumption that such factors as alcohol and tobacco consumption per capita should be held constant. First, these control factors were found to coexist with unemployment and business failures as influences on the pathological indices. Second, in several instances, holding the control factors constant appeared to serve the important function of allowing the significant relationship to be measured.

As the major statistical analyses for this project were being completed, it became clear that recession-related factors might exert a substantial influence on the control variables. The implication was that some of the effect of the control variables on the pathological indices was perhaps due in part to the indirect influence of the recession-related factors. Suspicion about indirect effects was aroused when it was found that, in mortality due to cirrhosis, suicide, and homicide, the impact of the unemployment rate was substantially lower than was calculated in the 1976 report, when no control factors were used. In addition, for those causes of mortality, control

factors such as alcohol consumption, proportion of the population living alone, and the divorce rate were frequently significant.

Tests were then conducted to ascertain whether several of the control factors were likely to be influenced by unemployment and business failure rates. It was found that, other factors held constant, the unemployment rate was significantly related to increases in cigarette consumption and the proportion of the population living alone. The business failure rate was significantly related to increase in cigarette and spirits consumption, the divorce rate, and decrease in beer and wine consumption. The implication is that the negative influence of cigarette and spirits consumption on, for example, total mortality, and that of divorce and living alone on suicide, probably reflect in part the indirect effects of recession.

Having obtained strong experimental evidence of the indirect effects of recession on pathology, attempts were made to obtain rough estimates of the order of magnitude of these indirect effects on a sample of age-adjusted causes of pathology.

It was estimated that the combined indirect effects of unemployment and business failure rates on total mortality and cardiovascular mortality were approximately 200 and 150 percent, respectively, of the direct effects attributed to the unemployment rate. These examples of indirect effects were due entirely to the positive relationships between both unemployment and business failure rates and cigarette consumption.

The combined indirect effects of unemployment and business failure rates on suicide were approximately 11 times the direct effects attributed to the unemployment rate. These indirect effects are linked to the positive relationships between: (1) business failures and spirits consumption and (2) unemployment rates and the proportion of the population living alone. Spirits consumption and proportion of the population living alone, in turn, are both related to increases in the suicide rate.

TABLE I.—MULTIPLE REGRESSION EQUATIONS FOR AGE-ADJUSTED TOTAL AND CARDIOVASCULAR DISEASE MORTALITY RATES[1]

[Lag in parentheses][2]

Explanatory variables	Total mortality 1950–80	Cardiovascular-renal disease mortality 1950–80	Cerebrosvascular disease mortality 1950–80	Ischemic heart disease mortality 1951–80
Economic:				
Income:				
Real Inc. PC, Exp. trend	−0.146E-2 (0)	−0.918E-3 (0)	−0.337E-3 (0)	−0.372 (0)
Over 65 Inc. ratio	(#)	−1.081** (0)	(#)	(#)
Labor force:				
Unemployment rate	6.011 (3)	5.481 (3)	1.376 (3) (W3)	1.709* (3)
Unemployment rate	6.978 (9–13) (W1)	3.352 (10)	0.084 (9–12)	(#)
L.F. Part. Rate, over 65, annual change	(#)	(#)	−0.943E-2	(#)
Business failure, annual change	(#)	0.626E-2 (0)	(#)	(#)
Business failure, annual change	0.148E-1 (2)	0.121E-1 (2)	0.378E-2 (2)	(#)
Behavioral:				
Cigarettes	0.124E-3 (4–7) (W2)	0.438E-3 (6)	0.142E-3 (7)	0.168E-3 (10)
Spirits	(#)	(#)	0.837E-1 (3)	0.435 (1)
Beer	(#)	(#)	(#)	−0.648E-2 (4–7) (W4)
Wine, annual change	(#)	(#)	(#)	−0.413 (1)
Animal fat	(#)	(#)	(#)	0.167E-3 (1)
Family and household divorce, annual change	0.815 (1)	0.496 (1)	0.882E-1** (1)	(#)
Other controls:				
Rho[3]	−0.549	−0.533	−0.566	−0.803
Binary var. 1968	(#)	(#)	(#)	0.869*
Binary var. 1979	(#)	(#)	(#)	−0.223
Constant	8.836	5.790	1.162	0.100**
R squared	0.997	0.998	0.999	0.995
F statistics	917.24	1321.840	2395.27	426.200
Durbin-Watson statistic	2.035	2.099	2.290	2.360

[3] Cochrane-Orcutt Transformation used to minimize residual autocorrelation.
(#) Variable omitted from equation either because of irrelevance or statistical insignificance.
[1] Unless otherwise noted, p is less than .001 for coefficients. * indicates p is less than .01. ** indicates p is less than .05.
[2] When lags are spread over a number of years the weighted sum of lags are designated in the table as follows: W1 weights = 1,3,3,2,1; W2 weights = 1,2,3,2; W3 weights = 1,5,4,1; W4 weights = 1,5,4,1.

TABLE II.—MULTIPLE REGRESSION EQUATIONS FOR AGE-ADJUSTED CIRRHOSIS, SUICIDE, AND HOMICIDE MORTALITY RATES AND THE INFANT MORTALITY RATE [1]

[Lag in parentheses]

Explanatory variables	Cirrhosis mortality 1951-80	Suicide mortality 1951-80	Homicide mortality 1951-80	Infant mortality 1950-80
Economic:				
Income:				
Real Inc PC, Exp Trend	−0.198E-4 (0)	(#)	(#)	−0.918E-2 (0)
Real Inc PC, annual change	(#)	(#)	−.263E-4 (0)	(#)
AFDC	(#)	(#)	(#)	−.751E-1 (0)
Labor force:				
Unemployment rate	0.256	0.104* (2)	(#)	32.140 (0)
16-24 Unemployment ratio	(#)	(#)	0.132E-3 (0)	(#)
20-24 male L.F. part. rate	(#)	(#)	(#)	−0.270* (0)
Business failures	(#)	0.150E-3* (1)	(#)	(#)
Behavioral:				
Cigarettes	(#)	(#)	(#)	0.335E-2 (0)
Total alcohol	(#)	(#)	0.767-1 (2)	(#)
Total alcohol, annual change	(#)	(#)	0.392E-1 (3)	(#)
Spirits	0.212E-1* (0)	0.513E-2** (0)	(#)	2.242* (0)
Spirits	0.421E-1 (3)	(#)	(#)	(#)
Spirits, annual change	(#)	(#)	0.156E-1 (2)	(#)
Spirits, annual change	(#)	(#)	0.136E-1 (3)	(#)
Beer ratio	−0.110E-1 (0)	(#)	(#)	(#)
Wine, annual change	0.279E-1* (3)	(#)	(#)	(#)
Narc. arr, annual change	(#)	(#)	0.143E-4** (1)	(#)
Family and household:				
Divorce, annual change	(#)	0.207E-1 (2)	(#)	(#)
Living alone	(#)	0.196E-3* (0)	(#)	(#)
Living alone, annual change	0.776E-3** (1)	(#)	(#)	0.111 (0)
Other controls:				
Rho π	−0.286	0.158	−0.129	−0.497
Nonwhite birth ratio				9.233
Constant	0.161	0.756	−0.132	6.464
R squared	0.984	0.969	0.992	0.999
F statistic	180.848	126.755	354.12[illegible]	1981.930
Durbin-Watson statistic	2.040	2.041	1.990	2.176

[1] Unless otherwise noted, p is less than .001 for coefficients, * indicates p is less than .01, ** indicates p is less than .05.
π Cochrane-Orcutt Transformation used to minimize residual autocorrelation.
Variable omitted from equation either because of irrelevance or statistical insignificance.

TABLE III.—MULTIPLE REGRESSION EQUATIONS FOR ARREST, IMPRISONMENT, AND PSYCHIATRIC HOSPITAL ADMISSION RATES [1]

[Lag in parentheses]

Explanatory variables	Total arrest rate, 1950–80	Narcotics arrest rate 1951–78	State imprisonment rate 1950–80	Psychiatric hospital admissions rate 1950–79
Economic:				
Income:				
Real income PC, Exp. trend	(#)	(#)	−0.790E−4 (0)	−0.143−2 (0)
Real income PC, annual change	(#)	−0.393 (0)	(#)	(#)
AFDC	(#)	(#)	0.935−E** (3)	(#)
Labor Force:				
Unemployment rate	0.162 (0)	2338.740* (1)	(#)	(#)
Unemployment rate	0.100 (6)	(#)	(#)	(#)
Unemployment rate	(#)	(#)	0.727** (0)	3.897* (1)
16–24 unemployment ratio	(#)	(#)	0.515E−3** (0)	(#)
Nonwhite unemployment ratio	(#)	(#)	0.672E−3** (2)	(#)
16–17 male L.F. part. rate	(#)	7.821* (0)	(#)	(#)
Behavioral:				
Total alcohol	(#)	625.924 (3)	(#)	(#)
Total alcohol, annual change	0.497−1 (0)	(#)	(#)	(#)
Spirits	(#)	(#)	(#)	0.437* (3)
Spirits, annual change	0.138E−3 (3)	(#)	(#)	(#)
Narc. arrests	(#)	(#)	0.146E−3* (0−1)	(#)
Narc. arrests, annual change	(#)	(#)	(#)	0.114E−2 (1)
Family and household:				
Divorce, annual change	(#)	(#)	(#)	0.517* (0)
Living alone	0.151E−3 (0)	(#)	(#)	(#)
Living alone, annual change	0.493E−3* (1)	(#)	(#)	(#)
Other controls:				
Rho ϖ	−0.615	−0.276	−0.240	−0.252
Endogenous	0.597 (1)	(#)	1.067 (1)	0.277** (1)
Time trend	(#)	(#)	(#)	0.112
Constant	0.896E−2	−2160.110	−0.122	3.840
R squared	0.995	0.984	0.991	0.982
F statistic	555.001	240.026	316.505	166.680
Durbin-Watson statistic	2.246	2.364	2.114	1.984

ϖ Cochrane-Orcutt Transformation used to minimize residual autocorrelation.
Variable omitted from equation either because of irrelevance or insignificance.
[1] Unless otherwise noted, p is less than .001 for coefficients, * indicates p is less than .01, ** indicates p is less than .05.

TABLE IV.—ESTIMATES OF THE DIRECT [1] EFFECTS OF A 10% CHANGE IN ECONOMIC VARIABLES ON THE INCIDENCE OF SOCIAL TRAUMA BASED ON 1980 POPULATION [2]

	Total incidence	Per capita income decline		Unemployment increase		Business failure rate increase		Annual change in business failure		16–24 unemployment ratio increase		Labor force decline	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total mortality	1,986,000	201,850	1.0	24,450	1.2	5,793	0.3	(3)	(3)	(3)	(3)	(3)	(3)
Cardiovascular mortality	1,035,250	150,631	1 5	17,392	1.7	(3)	(3)	4,783	0.5	(3)	(3)	(3)	(3)
Cirrhosis mortality	30,066	1,172	3.7	409	1.3	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Homicide	25,070	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	470	1.9	428	1.7
Suicide	27,640	1,066	3.8	189	0 7	(3)	(3)	(3)	(3)	(3)	(3)	1,300	4.8
Population in mental hospitals	139,543	(3)	(3)	5,885	4.2	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Imprisonment	304,332	7,964	2.6	(3)	(3)	(3)	(3)	(3)	(3)	18,471	6 0	(3)	(3)
Arrests	9,703,000	(3)	(3)	403,830	4.0	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Fraud and embezzlement	240,584	(3)	(3)	8,078	3 4	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Assaults	654,960	(3)	(3)	4,919	0 8	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)

[1] Direct effects only, estimates of indirect effects are discussed in Chapter V.
[2] Equations based on the years 1950–1980.
[3] Relationships not statistically significant or effects too small to be reported.

VI. APPLICATIONS TO ECONOMIC POLICY

The government's need to ascertain the quantitative implications of its economic policies arises because economic policies, deliberate or not, influence the nation's health and social behavior, and because the government has some responsibility for dealing with the problems of physical and mental illness and aggression.

Traditionally, economic policy has not been formulated on the basis of its objective implications for national health and well-being. Yet, to the extent that economic policy influences national economic activity, it has also influenced the nation's social well-being. Although it is usually assumed that high levels of unemployment, lack of economic growth, business failures, and economic inequality are undesirable and have unfortunate implications, the magnitude of these implications has never been clear.

This study, among others, has indicated the importance of economic growth for health and social well-being, the damaging effects of recession and its attendant losses, and the importance of equity considerations. Hardly a national economic policy decision arises that may not affect health levels, since policies that stimulate or curtail economic growth and employment intrinsically affect socioeconomic status and opportunities for social mobility, and consequently, influence health.

Estimation of Social Costs

Social costs are assessed by aggregating the various types of human reactions, such as mental hospital admission, use of primary and secondary health care, or imprisonment. Monetary costs, on the other hand, are calculated on the basis of: (1) the cost of using institutional facilities (prisons, mental hospitals, hospitals, and other medical care or criminal justice system requirements); (2) the cost to the families of the individuals who are ill, have died, or who have received injuries as a result of crime; and (3) the costs to the economy as a whole of debilitated or injured members of the labor force or of those who died of causes related to national economic distress.

In Table IV we provide estimates of the relationship between the principal economic indicators and changes in social pathology measures as they would have applied at specific times in the past. In this procedure, the full equations containing coefficients of the relationships between the economic indices and the various pathological indices were used. The incidence of societal pathologies was calculated for the 1980 population base.

An aggregate incidence was obtained for each of the indices of pathology based on the sum of the age-specific incidences. The age-specific sum was used rather than the incidence derived from a single equation representing either the total crude pathology meas-

ure or an age-adjusted measure. This is based partly on the differences in reaction patterns among age/sex subgroups to economic trauma and on the need to control for the effects of national economic changes on the population structure.

Effects of economic policy that can be measured would ordinarily be seen in levels of, or rates of change in, such indices as unemployment, per capita income, and business failures. One method of assessing the impact of future economic policies on social welfare would be a tentative forecast of the level of social pathology that would be related to a specific economic indicator. Such a forecast would be based on the historical record of the statistical relationship between the economic and social indices.

For example, in making a decision about the relative social costs of unemployment rates, one might project the values of mortality rates for specific causes that would be associated with different values for unemployment rates. Whether or not a 7 percent rate of unemployment is considered "tolerable," for example, would depend among other considerations on the estimated associated rate of morality.

It should be emphasized that any inferences about the future impact of economic indicators on social indices are built on the assumption of continuity in historical relationships. Two types of relationships are in fact subsumed, one among several economic indices, and the other between each of the economic indices and each of the several social indices. The relationships themselves are based on empirical research using data covering specific historical periods. In making assumptions about the future of any of these relationships, one must first assume that the structure and stability of the relationship will remain as they were during the period over which they were tested. When significant political and social changes interfere with the strength or stability of the basic relationships, assumptions will be altered.

Nevertheless, inferences about future situations are worthwhile. In the absence of more accurate indications of how economic trauma might inflict indirect social costs, they do provide an indication of social costs and benefits of alternative policies.

Derivation of Monetary Costs

a. Methodological Issues Related to Health Costs

DIRECT AND INDIRECT COSTS

The human costs associated with illness and early mortality are incalculable. Even the economic costs cannot be calculated with precision. Considerable progress has been made, however, in the development of methods for estimating the economic costs that occur as a result of illness or death. These represent expenditures on medical care, including hospital costs and fees for physicians' services and for pharmaceuticals. The indirect costs include both morbidity and mortality costs; morbidity costs reflect loss of working time by the ill or disabled, and mortality costs involve loss of expected earnings due to premature death (*1-5*).

The indirect costs of illness and premature death are calculated on the basis of average age- and sex-specific earnings, provided by

the U.S. Bureau of Labor Statistics, as well as on wage supplements. Lifetime earnings, estimated on the basis of these cross-sectional data, take into account that earnings usually increase with age, and are adjusted to account for increases in productivity projected to occur along with economic growth and for varying labor force participation rates according to age and sex.

There is no accurate way to measure forgone productivity due to illness among many women, because the value of household work must be added to earnings. Because there is no market price for household services, the currently used method estimates the cost of replacing household services with person-hours from the labor force (*6*). This method, which is based on time-motion study of housewives and the assumption of labor market replacement of analogous activities, is far from precise. Yet this method is superior to assessment by sample survey of the population's "willingness to pay" for household services, since individual responses would be extremely variable.

DISCOUNT RATE

In order to have a base of comparison with present costs, future costs based on projected earnings must be reduced to their present value, or be discounted. The theory is that costs in the present or near future are more of a burden than those in the distant future. There is agreement among economists on the principle of discounting, but considerable controversy as to the appropriate discount rate to be used in general and in specific circumstances. Indeed, the literature on the discount rate, reflecting this controversy, is extensive and has been reviewed in several contexts (e.g., *7*, *8*).

Calculations of the indirect costs of premature death or disability generally use discount rates ranging from 2 to 10 percent. In the present study, for total and cardiovascular illness (based on data for total and cardiovascular mortality rates), we provide a range of cost estimates based on discount rates of 2.5 percent and 10 percent, since the initial cost data have been worked out for these categories (*9*, *10*).

INFLATION FACTOR

Another issue in economic cost calculation concerns the value of the dollars projected over time. Typically, adjustment is made in the estimates to account for increases in prices of goods and services. The three approaches taken include calculation of increased costs of medical or institutional care, wage rates, and overall prices based on the rate of inflation as measured by changes in the consumer price index (CPI).

In this study, projected increases in medical care costs are used to deflate direct costs of illness; projected increases in wage rates are used to estimate the indirect costs of expected earnings forgone. The CPI is not used for deflation in the illness or mortality costs, but is used to deflate dollar costs of property crime loss. Original data for 1975 on average wages, medical costs, and detailed elements of the CPI are based on the Social Security Administration II B assumptions (*12*) and the Board of Trustees of the Federal Hospital Insurance Trust Fund Annual Report (*13*). These

estimates have been adjusted for the increased CPI, average wages, and rise in medical costs for the years between 1975 and 1980 by data from the Board of Trustees of the Federal Old Age and Survivors Insurance and Disability Insurance Trust Funds (*14, 15*).

PREVALENCE APPROACH

In the economic cost calculation of forgone earnings, this study has adopted the prevalence method of estimation. In the prevalence approach, the medical expenses of all cases prevalent during a particular year are calculated, and indirect costs from future earnings forgone due to mortality are assigned back to that year. It would also be important to know the lifetime costs associated with the incidence of disease, or the cost per new case of disease from onset until cure or mortality. This incidenced-based method of estimating lifetime costs is difficult to calculate.

The difficulty lies in the need to take into account the likely course of a disease; the type, volume, and cost of medical care that is usually used; the severity and duration of illness; and the effect of morbidity and mortality on earnings. Data and knowledge limitations preclude the use of the incidence method in this study. In the future, such incidence-based procedures as have been developed by Policy Analysis, Inc. (*4, 5, 11*) could be adopted. At present, we use the available cost calculations provided in *Health: United States, 1980* (*9*) and *Costs of Disease and Illness in the United States in the Year 2000* (*10*).

b. Cost of Total Illness and Diseases of the Circulatory System

For estimating the costs of total illness and diseases of the circulatory system, we use two alternative estimates for indirect costs, based respectively on a 2.5 percent and a 10 percent discount rate. The 1975 figures are taken from *Health United States, 1980* (*9*) and *Costs of Disease and Illness in the United States in the Year 2000* (*10*). Linking mortality in this study with total economic costs of recession assumes that the impact of recession on direct care and morbidity costs is comparable to its impact on mortality.

For each group, the *Year 2000* and *Health 1980* reports estimated three types of cost in arriving at the economic cost of illness for 1975. These costs were inflated to 1980 levels as follows:

—direct costs of prevention, detection, and treatment were increased to 1980 levels by using the same percentage increase that occurred in estimated personal health care expenditures from 1972–1975 and by adjusting these figures for a 57.69 percent increase in medical care cost between 1975 and 1980.

—indirect costs of disability (morbidity), the lost earnings and value of unperformed housekeeping services resulting from illness, were increased to 1975 levels by the percentage increase in average wages over 1972–1975, and adjusted for a 49.3 percent increase in average wages to 1980.

—indirect costs of premature death (mortality), the present value of expected lifetime earnings or the market value of housekeeping services, were increased to 1980 levels by the percentage increase in average wages over 1972–1975 and

again adjusted for a 49.3 percent increase in average wages between 1975 and 1980.

The final step was to link the equation-based estimates of the impact of economic instability on total mortality and on cardiovascular mortality with these estimates of the costs in 1980 of total illness and of diseases of the circulatory system.

Table A in Chapter II provides the proportion of total stress incidence attributed to various kinds of economic indicators; e.g., .023 is the proportion of deaths from all causes related to a 14.3 percent increase in the unemployment rate.

Table B in Chapter II provides dollar costs associated with the changes in stress following the author's 1976 methodology in "Estimates of Selected Economic Costs of Unemployment." For example, if the cost of illness is $366.6 billion in 1980, then the economic loss associated with a 14.3 percent rise in the unemployment rate is $366.6×.023 (billion)=$8,479 million at a 10 percent discount rate for obtaining indirect costs. The same estimate discounted at 2.5 percent yields $12,371 million.

COST OF TOTAL ILLNESS

[In billions of dollars]

	Direct cost	Indirect cost	Total cost
(i) Using 10 percent discount rate:			
1975	118.5	120.4	238.9
1980	186.9	179.8	366.6
(ii) Using 2.5 percent discount rate:			
1975	118.5	204.1	322.6
1980	186.9	304.7	491.6

COST OF DISEASES OF THE CIRCULATORY SYSTEM

[In billions of dollars]

	Direct cost	Indirect cost	Total cost
(i) Using 10 percent discount rate:			
1975	15.9	29.7	45.6
1980	25.2	44.4	69.6
(ii) Using 2.5 percent discount rate:			
1975	15.9	50.4	66.3
1980	25.2	72.3	97.5

One of the measures of social trauma used in this report to indicate the impact of unemployment is suicide. Data used to develop an estimate for the economic cost of suicide in 1980 were originally taken from "The Cost of Mental Illness—1974" (*16*). The economic value of life lost through suicide is based on an estimate of the current market value of future earnings lost because of the suicide. The study mentioned above indicates that the cost of deaths due to mental illness in 1974 was estimated to be $4,942 million. To arrive at the percentage of deaths due to mental illness that are due specifically to suicide, it was necessary to use an earlier study, "The Cost of Mental Illness—1971" (*17*). This study indicates that sui-

cides represent 21.7 percent of the total number of deaths due to mental illness (the study assumes that all suicides were due to mental illness). Applying this percentage, the cost of deaths due to suicide in 1974 is $1,145 million. Because 1975 is used in this analysis as the reporting year for economic costs, the 1974 cost of suicide ($1,145 million) was adjusted for the 26.4 percent increase in average wages between 1975 and 1978, resulting in $1,448 million for 1978.

Another measure of social trauma used in this report to indicate the impact of economic distress is that of utilization of state mental hospitals. Based on data in "The Cost of Mental Illness—1974," the direct care expenditures for hospitalization in state and county mental hospitals were $2,756 million in 1974. First admissions to state and county mental hospitals were 29 percent of total admissions in 1972. The $3,263 million direct care cost in 1975 was adjusted for an increase in medical care cost of 42.19 percent between 1975 and 1979, resulting in a rise to $4,640 million.

Another element in the economic cost of state and county mental hospitalization is the value of the time lost, as reflected in lost wages of individuals in these institutions. "The Cost of Mental Illness—1974" indicates that in 1974, $4,524 million was lost to all patient care activities. In order to find the percentage lost only to care in state and county mental hospitals, it was necessary to use an earlier study, "The Cost of Mental Illness—1971." This study indicates that 54.3 percent of the value of time lost to all patient care for mental illness can be attributed to state and county mental hospitalization. Applying this percentage to the total 1974 cost of time lost to patient care ($4,524 million) yields an estimated cost of $2,457 million of time lost to patient care in state and county mental hospitals in 1974. Similarly, the lost earnings in 1975 were adjusted for a 37.56 percent increase in average wages, equalling $3,610 million.

After adjustment of the 1975 data, the sum of the direct care cost of $4,640 million and the indirect cost of the loss of potential earnings of $3,610 million for first admissions to state and county mental hospitals totalled $8,250 million in 1979. The table below shows the estimates for 1975 and 1979.

COST OF MENTAL HOSPITALIZATION

(In millions)

	1975	1979
Direct costs (of care)	$3,263	$4,640
Indirect costs (lost earnings)	2,624	3,610
Total	5,887	8,250

c. Methodological Issues Related to Costs of Crime

MEASURES

Efforts to determine the cost of crime generally consist of assigning money values to the consequences of criminal actions. While, at

first glance, estimating the costs of crime might seem relatively simple, there are problems involved in arriving at a figure that reflects either the total of crime or that of specific crimes (*18*).

One critical problem is the lack of agreement among those working in the area as to what should be included in crime cost estimates. Some writers limit their costs to criminal justice system expenditures, while others include property losses, earnings made through criminal activities, or expenses on preventive measures used by people to avoid crimes. Some researchers focus on indirect costs, including losses to society resulting from crime. Others feel that the costs of crime are inherently unquantifiable, especially when one considers the fear of crime and the ways such fear alters people's lives

The fundamental problem is that there are no reliable measures of crime itself—whether it results in reports to the police, death, arrest, imprisonment, or public reactions—for the actual amount of crime in society is unknown and inherently unknowable.

In this report, five types of measurement were considered, related partly to the author's 1976 report. The first is lost productivity (based on forgone earnings) of victims. This measure was used in 1976 to estimate homicide costs, in a manner similar to the cost estimates of other forms of mortality, and is retained in this report.

The second measure is based on the concept of underutilization of imprisoned manpower. The concept is that each inmate is assumed to be capable of earning the mean household income (based on census data) earned by employed members of the labor force with his educational and occupational background. Average earnings derived by this method adjust for the fact that inmates include a larger proportion of nonwhites than the population at large. But no adjustment is made for the higher unemployment rate that would prevail among persons at high risk for engaging in crime and becoming imprisoned (*19*). In addition, data on age-specific incarceration were unavailable after 1973. Because of these problems, the present study does not calculate such costs of imprisonment.

A third measure represents the costs of loss of money and physical property due to property crime. In this report, we use that measure in the estimate of white collar crime.

A fourth measure involves criminal justice system (federal, state, and local) costs and includes expenditures for police protection, courts, legal services and prosecution, indigent defense, and corrections. This measure is used in the present study.

A fifth measure involves the value of illegal goods and services that are the products of organized crime; the vast majority of these are narcotics and dangerous drugs. This measure, in addition to the forgone earnings of victims (of homicide), losses due to property crime, and criminal justice expenditures and related costs, was used for the estimate of total crime costs. The estimates are all taken from the Joint Economic Committee figures of 1976. For purposes of estimating economic costs of crime, the following indices were used: (1) homicide, which is only used to account for costs related to mortality caused by homicide; (2) the arrest rate for fraud and embezzlement, which is used as an indicator of white collar crime; and (3) the total arrest rate, which is used as a broad indica-

tor of total crime, and, more narrowly, as ar indicator of criminal justice system activity.

DOUBLE COUNTING

It should be pointed out that, because of the difference in measures of crime costs that are used in this study, one must be careful to avoid double counting. For example, the costs of homicide might include those of arrest, court adjudication, and imprisonment of persons responsible; the same costs might also be separately allocated to operation of the criminal justice system. Another common example is the confusion of the costs of drug abuse with those of crime, because of the tendency of the addicted population to use illegal methods to support the drug habit. Because drug abuse usually involves (costs of) crime, it cannot be reasonably added to the costs of crime.

This problem of double counting is most often an issue in crime cost accounting, but is also seen in the estimation of illness and mortality costs. For instance, for the population as a whole, the costs of a high suicide rate might be understood to involve mental hospital treatment of attempted suicides. Such costs attributed to suicide should then not be added to those of mental hospitalization, where the intention is to obtain a broad estimate of the costs of psychological disorder.

d. Cost Estimates for Crime

Though estimates of the cost of crime must rely on a tenuous base of information, the cost is clearly enormous. The direct costs of crime, its control, and prevention are massive. When the indirect costs resulting from loss of life, loss of income, and higher costs of goods and services are added, the costs rise even higher. From time to time, various agencies of government have tried to measure the economic impact of crime. In 1976, the Joint Economic Committee of the United States Congress published an estimate of the cost of crime that exceeded $125 billion per year (*20,* p. 26).

HOMICIDE

The economic costs of homicide were estimated by using the 1974 homicide statistics collected by the Division of Vital Statistics of the National Center for Health Statistics (*21*) and the Social Security Administration's estimates of lost earnings from death (*12*). Based on a conversion of the 1972 earnings into 1975 figures, it was found that the estimated 1975 economic cost of homicide mortality would have been over $5,406 million. This estimate was then adjusted for a 49.3 percent increase in wages between 1975 and 1980. The 1980 economic cost of homicide mortality alone would have risen to $8,076 million.

WHITE COLLAR CRIME

The second index of criminal activity employed in this study is white collar crime. White collar crime is among the fastest growing types of criminal activity. According to the Joint Economic Committee projection of 1976, 35 percent of all crime is attributable to

white collar crime. This encompasses, inter alia, bankruptcy, fraud, bribery, payoffs, computer crime, consumer fraud, illegal competition, credit card and check forgery, embezzlement and pilferage, insurance fraud, and securities theft and fraud. The estimated cost in 1976, $44 billion, was adjusted for the CPI increase of 44.8 percent between 1976 and 1980. The outcome is a cost of $63.8 billion in 1980 attributed to white collar crime.

CRIMINAL JUSTICE SYSTEM AND TOTAL CRIME

The arrest rate is taken, in this study, as an indicator of, at a minimum, criminal justice system costs and, at a maximum, total crime costs. The estimated cost of the criminal justice system, representing 18 percent of total crime costs in 1976, was $22.7 billion, according to the Joint Economic Committee Report of 1976. These costs are inflated by 44.8 percent between 1976 and 1980, with a resulting figure of $32.9 billion for 1980.

Overall crime costs, estimated by the Joint Economic Committee in 1976 as $125.2 billion, are similarly inflated by 44.8 percent between 1976 and 1980 to yield a 1980 figure of $181.3 billion.

PROBLEMS IN THE ESTIMATION OF SOCIAL COSTS

This study attempts to provide estimates of the social costs of economic change for both the recent past and the near future (based on projections). First, however, it is necessary to delineate two problems caused by the preliminary nature of our calculations: (1) a comparatively small number of pathological indices that are used to represent "social costs," and (2) the fact that pathological indices measure extremely severe reactions rather than typical effects. These elements point out that we have just uncovered the surface in estimating social costs of national economic distress.

The first problem is the relatively small number of pathological indices examined. The estimates presented here should be taken only as indicative of the great breadth of pathological reactions in the population. Although our present level of knowledge prevents accurate measurement of the full amount of social pathology associated with economic trauma, we can asume that it exceeds the estimates given in this report.

Our second major problem in estimating the overall social costs is the use of extraordinarily severe measures of pathology. These extreme indices can theoretically be extrapolated to the larger conception of mental and physical ill health and criminal aggression. If we wish to estimate the total "human cost" or the monetary cost of the impact of national economic distress in the light of these broad conceptual issues, then we must take into account two additional levels of analysis.

In the case of mental illness, we must extrapolate from mental hospital admission to other forms of general medical care and, finally, to the general mental health of the population, including those who do not receive care. For physical health, we must extrapolate from mortality to hospitalization and the use of primary and secondary health care, and finally, to the general status of the population's health, whether or not medical care is used. In considering aggression, we begin with the extreme indicator of imprison-

ment, and extrapolate to entrance into the criminal justice system (from arrest through conviction); then we must infer the behavior of criminal aggressors, including those who are not arrested and whose crimes are not reported, and finally extrapolate to the status of the population with respect to the variety of serious aggressive behavior.

Perhaps we have underestimated the impact of these relationships because of data inadequacies, incomplete theoretical formulations, and confinement of the analysis to the national level. The problems of data inadequacy are evident in the case of admissions to mental hospitals and prisons. The count of admissions is probably accurate, but the degree to which hospitalization and imprisonment are reliable measures of serious mental disorder and serious crime will vary with, among other things, administrative policies of these institutions. Thus, the extent of mental disorder and criminal aggression, of which institutionalization is one index, is not only unknown, but may change through time. Moreover, trends in the institutional indices of mental disorder and criminal aggression are probably least sensitive to the effects of economic and social change simply because they display relatively little variability over time in comparison to non-institutional measures.

The problem of incomplete theories with respect to the effects of stress on serious pathology—let alone the effects of economic trauma on stress—have similarly been understated. The basic theories have not been completely worked out, and few studies of these phenomena at the individual level are available for use in national policy analyses. Thus, we have had to make several assumptions about the structure of such relationships on the national level, including a number of non-economic explanations of trends in the pathological phenomena. We do not presently have the data base needed to pinpoint which groups among the populations will be most sensitive to national economic changes, which further restricts the sharpness of our analysis. We are forced to examine large populations, only a small proportion of which actually reacts pathologically.

Still, it should be noted that certain important factors that could have a bearing on types of pathology that individuals might show in response to economic trauma could not be dealt with in this report. Such factors include personality, political or religious persuasion, and previous conditions of poor physical health or mental health.

The relatively consistent findings of the present study appear all the more remarkable in the face of problems associated with data inadequacies, incomplete theories, and aggregate levels of anlaysis. It is therefore conceivable that under more nearly ideal study conditons the relationships would be found to show even greater statistical strength.

We are quite aware, however, that the models offered here are by no means structurally complete. They represent only a second-stage research effort and are based on earlier scientific work in several different disciplines. The translation of theoretical positon and discovery into policy-oriented, empirical models was based on relatively simple assumptions of linear relationship between the economic and pathological indices. These assumptions of linearity

are probably imprecise, because they do not take into account the duration and rate of change in economic distress. For example, they assume that a change in the unemployment rate from 2 to 3 percent would have a pathological impact similar to that of a change from 7 to 8 percent. Increases at higher levels of unemployment may have considerably more deleterious effects.

Discussion of the Findings Based on Recession-Related Indices

Unemployment and business failures are the two principal recession-related influences at all ages, judging by total and cardiovascular mortality, but labor force participation rates, hours worked in manufacturing, and annual changes in per capita income are also useful to describe other short-term impacts of recession. Because unemployment often shows a major effect after 2 or 3 years, it is difficult to measure shorter lags using the same unemployment variable. The alternative recession-related indicators may be independent enough of the unemployment rate to allow observation of effects of recession that occur within less than 2 years.

No short-term recession-related relationships were found to occur for cirrhosis mortality. An age-specific income ratio, however, was a significant contributor at all ages to the explanatory model. It suggests that, in the short run, doing relatively poorly constitutes a high risk situation for pathological drinking, or drinking and drug use combined. Also implicated are the stresses of social isolation and the delayed effects of unemployment, which may work to set off the pathological processes that may result in death a decade later.

With respect to homicide, which also lacks a short-term recession-related variable in the multivariate equation, there is probably another aspect of relative deprivation at work. All other indices of crime, it should be noted, are highly recession-related. With homicide, however, the unemployment variable is the youth unemployment ratio, not an indicator of recession. We interpret this to mean that the youth respond violently to a situation of sharp contrast between comparatively good societal economic conditions and their own chronic unemployment or underemployment with little prospect for improvement.

A final observation is in order on the interpretation of the recession indicators in the context of multivariate analyses. Because many factors are required to develop acceptable empirical models of hypothesized relations between recession-related loss and pathological response, it is not possible to consider the effects of any isolated variables. For instance, although a 10 percent increase in the unemployment rate may be associated with a 5 percent increase in mortality from some cause, it does not follow that one can see exactly a 5 percent change in the vital statistics a year or two after the rise in unemployment. Many other trends and changes are at work simultaneously, either to raise or lower the actual rate. Only if other trends and changes were somehow controlled could the unemployment effect be isolated.

Research Priorities

Our findings further corroborate earlier research on the statistical effects of economic declines on measures of social pathology. They also confirm the tradition of research on the inverse relationship between socioeconomic status and pathological consequences of economic distress. The research in this paper allows the problem to be evaluated in terms of economic distress originating at least partly at the national level. The implication is that substantial components of societal stress originate with economic maladjustments that, in turn, can be moderated through national economic policy actions.

It is hoped that this effort will encourage research on the impact of economic policy on societal well-being. Solutions to many of the major problems found in the work presented here will doubtless be found as research proceeds on the national and urban levels. It is probably to the urban level, particularly, that we need to look for a determination of the negative effects of long-term growth in economic affluence. It is on the urban level, moreover, that the largest differences in unemployment rates prevail. It is clear that we need to examine these relationships by comparing cities, states, industries, and occupational groups.

Comparisons should also be made at the international level. Extension of this comparative research to other countries will bring us closer to understanding the sources of pathological response to changes in economic conditions.

Finally, a research priority is the determination of which components of economic growth have the most impact on the indices of societal well-being. For example, it would be important to determine what proportions of declining mortality are statistically related to increased availability and use of medical technology, to nutrition, or to the general decline in the physical and emotional stress of work life. It would also be important to break down the components of the CPI to determine whether price increases of specific goods and services are most responsible for the pathological effects or, in fact, whether it is the implication of changes in the income structure (related to changes in price levels) that is behind the relationship of inflation rates and pathology indices.

Refined applications that go beyond the use of the broad findings of the present report require far more extensive analysis. Such research can be undertaken in both the national and subnational (even individual) levels of analysis. Efforts should be made to study populations that tend to undergo substantial economic difficulty that is heightened by national economic adversity. This is especially true of many urban centers in the United States, where serious pathological problems as well as high unemployment and relative economic decline have coexisted in recent years. In addition, age, racial, occupational, and industrial groups that are particularly vulnerable to the instabilities in the national economy represent a priority for substantial study, as it could provide the basis for targeting specific ameliorative economic measures to populations where they would provide the greatest benefit, in terms of both effectiveness and efficiency.

It is also important to evaluate the effects of non-economic ameliorative programs on the physical health, mental health, and criminal justice areas in light of national, regional, and local economic trends. It may be that, in many instances, the ameliorative programs are overwhelmed by the effects of the economic trauma and can only prevent greater pathology.

Well-designed research at the individual level should help to identify how strongly different kinds of economic trauma affect the tendency toward serious physical and mental health pathologies and aggression in the population. For example, population cohorts could be followed and intensively examined over periods of several years to ascertain the effects of the economic changes specific to their lives, as economic changes tend to be associated with specified pathological conditions.

Studies of the relationship of economic change to societal pathologies in individuals have often lacked controls for other risk factors, focused too narrowly on employment status, and been inadequate in size of sample. Research over the past several years has shown that it is critical to consider the established risk factors for specific pathologies, such as the controls in the present study for cigarette smoking and alcohol consumption in the analysis of chronic disease mortality. Research has also revealed the pervasive effects of economic conditions in a family, work organization, community, or region. Because recession-related losses are felt not only by the unemployed, but by their families, former co-workers, and neighbors, a comparison should be made between persons in regions or communities differentially affected by economic changes, not just between the unemployed and the employed. These analytic considerations will require large sample sizes if the results are to be statistically meaningful.

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APPENDIX A—METHODOLOGY

Analytic Techniques

The statistical analyses in this study were performed using the Time Series Processor (TSP) computer programs for multivariate time-series regression analysis. Standard statistical procedures for analyzing multiple variables were used. Routine tests for significance of individual variables and of complete equations are shown in the tables. The Durbin-Watson test for autocorrelation of residuals is also reported. Since it was found useful in all cases to transform the data to minimize serial correlation, the Cochrane-Orcutt procedure was employed for this purpose; rho values are included in the tables.

Despite the theoretical strength of the models under study, in many instances specific variables were not found statistically significant. Of these, several were omitted in the final equations because: (a) their t values are near zero, (b) their presence as statistical controls is not required, and (c) their presence tends to damage the statistical significance of the overall equations (F or DW values). Several other variables whose t values are greater than zero, but not technically significant, were retained in the final equations if: (a) they are needed for statistical control and (b) their presence does not damage the statistical significance of the overall equations.

Data Sources and Limitations

The data are those routinely used in this country for measuring a variety of economic and social conditions at the national level. Sources are listed at the end of this chapter. While generally the analyses cover a time span from 1950 through 1980, exceptions occur on account of variations in the availability of data. Analysis begins later when either the measure of societal pathology or some important control variable could not be obtained for earlier years. Similar problems arise at the end of the period. Analyses of mortality by sex, age, and cause, for example, terminate in 1978 for lack of later cross-classified data. Total mortality and mortality for each cause by age, but not cross-classified by sex, are analyzed through 1980. However, the last two years of the series—1979 and 1980—are data estimated on the basis of a 10 percent sample of death certificates. It is worth noting that such delays in the tabulation and publication of basic national social statistics handicap researchers and policy-makers alike who require detailed current information for analysis and forecasting.

29-726 O—84——7

Tests of Validity

Total mortality and mortality for each of four causes were examined by 10-year age groups for each sex separately (1951–78) and for the sexes combined (1950–80). Nonwhite mortality in 10-year age groups was analyzed for the period 1950–77. Where possible, e.g., arrests and mental hospital resident patients, each of the other categories of pathology was examined by age group. The purpose of the replications by demographic group and categories of pathology is to validate the findings on basic relationships. To the extent that consistency of results is observed among the many replications for each of the main economic indices, additional confidence may be placed on the validity of the relationships associated with each of the indices.

Two other factors made it desirable to examine the relationships between the economic and social indices by demographic groups. The relationships do, indeed, vary by age, sex and race. Thus, representation of the relationships only by the total rates of the pathological indices can be seriously biased by the influence of a minority of subgroups which dominate the totals (e.g., the age groups over 75 in the case of total mortality, or those over 65 in mental hospital admissions).

A second factor that would cause bias is that changes in the economic indices are often associated with changes in the demographic structure of population. Disaggregation of the pathological indices into age-specific components was used to deal with this problem. Technically, then, specification of the pathological data by age, sex, and race was used to obtain more accurate estimates of the coefficients of pathology associated with the economic indices, and subsequent translation of those coefficients into numerical estimates.

For the most part, however, it was decided not to utilize corresponding age/sex-specific unemployment rates or income measures in the analysis of pathological indices classified by these demographic categories. The most important factor in this decision is that the correlation between fluctuations over time in the national unemployment rate and those in the age- and sex-specific rates is extremely high. This means that, over time, subgroup-specific fluctuations in unemployment rates are virtually indistinguishable from those in the national rates, although the size of the coefficients would probably differ, and the resulting empirical models would be very similar. Furthermore, data for the subgroup-specific unemployment rates did not become available until 1947, which considerably narrows the span of time available for analysis of relations with long lags.

As a test of the assumption that the total unemployment rate and the age-specific unemployment rate would yield very similar results, an appropriate age-specific male unemployment rate was tested in analyses of total mortality for both sexes in ten-year age groups, starting with 25–34, for time spans ending in 1978 and 1980. The test was limited to the shorter lags of unemployment, since the age-specific data are available only beginning in 1947.

From the standpoint of interpretation of the relations between economic fluctuations and pathological indices, the use of sub-

group-specific unemployment rates may actually be quite misleading. Not only is there a lack of independence among the subgroups in their unemployment rates over time, but there is a lack of independence among different age and sex groups in their social and economic status because they are bound together in family and other social units. Thus, the economic implications of unemployment or income loss of a breadwinner may be quite substantial for the entire family whose members are of diverse ages and both sexes. A more realistic index of psychological stress due to income loss would be a measure of deterioration in family socioeconomic status, for which data are as yet unavailable.

Apart from the economic interdependency of people of different characteristics is the problem of diffusion among different members of a family of psychological stress generated by economic trauma frequently mediated through only one member's relationship to the economy. For example, for a working wife the emotional stress of unemployment may bring about severe agitation, depression, or deterioration in physical health status. Such conditions might have serious pathological implications for her relationships with family members, friends, neighbors, or other associates. Her husband and children might well become hostile or withdrawn and eventually exhibit adverse patterns of reaction separate from those of the person who initially encountered the economic trauma.

Thus, although the initial mental stress has been encountered by one individual, what results is stress to the entire family or even the larger community. In situations where an entire family is undergoing stress initiated by the actions of one of its members, it is often difficult to predict which of the members will actually show the most serious pathological reaction. The probability of pathological response will depend, at least in part, on the previous mental and physical condition of the individuals involved. To take this problem of diffusion one step further, it may be found that high anxiety levels are generated among workers who are themselves not unemployed, but who observe a high incidence of job loss around them, and then become fearful for their own employment and income.

The Problem of Causal Relations

The research techniques utilized in this study are essentially based on statistical correlation and regression analysis. As in all research based on correlation or regression, it is important to state the caveat that one cannot establish causation with these procedures. At most, one can test specific hypotheses grounded on sound theoretical considerations and earlier research findings. In these tests, the hypotheses are either supported or unsupported by the statistical evidence. Even when they are supported on the basis of statistically significant relations, they are not proven since the statistical tests only indicate whether or not the findings may result from "chance" factors at specific levels of probability.

In addition to the problem of lack of causal certainty is the issue of possible spuriousness, even for the relations found to be statistically significant. Regardless of stringent controls, outside influences may have unobservable effects on the relationships. The pos-

sibility remains that we have not taken all relevant factors into account, especially since the state of our knowledge in the fields involved is incomplete. Thus, some unknown factor may be influencing both the economic trends and those of the pathological indices. Finally, it is probable that the techniques of measurement used in constructing the economic or social indices are not without some error. To the extent that such measurement error exists, our results may be biased.

Having stated the caution on causal interpretation, we should nevertheless point out that the statistical techniques used in this study are standard for the problems encountered, and do not necessarily involve greater error or bias than would be true in other research based on correlation or regression techniques.

Analysis

The pathological indices, or the dependent variables in this analysis, included: total mortality rate (age-, sex-, and race-specific); cardiovascular-renal disease mortality rate (age- and sex-specific); suicide rate (age- and sex-specific); admissions to mental hospitals; patients in mental hospitals (age-specific); imprisonment rate; total arrest rate (age-specific); selected serious crimes known to the police.

From the standpoint of research strategy, we are interested in a single question. What is the empirical relation between economic changes and pathology patterns, holding constant other aggregate-level factors which tend to influence those pathology patterns? To answer that question adequately, it is necessary to select control variables which, on both theoretical and empirical grounds, can help to explain the variance in the pathology patterns that is not appropriately accounted for by the variables which represent economic changes. To the extent that the control variables perform in that classical manner, we will neither overestimate nor underestimate the importance of the economic variables.

It is toward this end that a multivariate operational model of the relation between national economic changes and mortality rates has been developed over the past several years. Theoretically grounded in the epidemiologic, demographic, and stress research literatures, the regression model includes factors associated with: (1) long-term growth in the economy; (2) economic instability—especially recession as indicated by unemployment, income loss, business failures and recession-related declines in average weekly hours worked in manufacturing industries; (3) physical environmental disturbances; and (4) deleterious behavioral risk factors historically associated with economic growth—especially alcohol and cigarette consumption per capita and measures of social isolation, such as divorce and living alone.

Lagged Endogenous Variables

Mental hospital admission, mental hospital resident patients, imprisonment, arrests, and crimes known to the police all involve institutional intervention in the process that links incidence of initial pathology to official recording of the occurrence. These mental health system and criminal justice system interventions impose

trends and cycles of their own on demographic changes in the recorded data. It is these intervention-based trends and cycles that frequently give institutional data "self-generating" properties. These properties in turn are measured by the lagged endogenous variable. Lagged endogenous variables were utilized to measure the trend of cyclic patterns of institutional activity in all cases where factors involved a "system" response to a specific pathology, intervening between the incidence of pathology and its offical record.

Analysis of Lag Relations

Analysis of the lag structures of each of the time-series relations was accomplished in the following four stages: (a) theoretical specification of the relevant time span over which the relation may lag; (b) estimation of the actual range of statistically significant lagged relations; (c) narrowing of the range of significant lagged relations under conditions of multivariate statistical controls; and (d) selection of the optimum lag, within previously determined range, under multivariate controls.

The last stage, selection of the optimum lag, is the most difficult since, in fact, the relations usually take place over several years and the "optimum" lag is eitner the strongest or the average. The ideal procedure, when degrees of freedom permit, is to express the relations in distributed lag form, typically polynominal. This method can be used if we find the number of independent variables to be relatively small, i.e.. under six, for a given equation. In the case of this study, however, the combined number of independent variables and controls precludes the use of the polynominal distributed lag method due to insufficient remaining degrees of freedom.

In order to illustrate points (a) and (b) of this procedure, let us take, for example, the case of the unemployment rate in its theoretical relation to the general mortality rate. We can specify, theoretically, that three periods are involved in this relation, covering an overall span of sixteen years. The first period—involving the fear and shock of major economic loss—covers less than two years including the zero year and the first lagged year. The second period covers the span of post-recession depressed employment, which typically last 2-3 years following an "ordinary" recession, and 3-5 years following longer and deeper recession, and culminates in economic reintegration. But, for the population over 40, reintegration probably occurs only with another loss in socioeconomic status. The third and fourth periods are those in which vulnerabilities arising from the first 1-5 years of economic loss and illness result in subsequent illness and mortality. These vulnerabilities are greatly compounded by the occurrence of a new recession.

In this example, we have limited ourselves to a total span of investigation of lagged relations covering fifteen years. In the present study, since the total period of analysis is from 1950 to 1980, it is unlikely that we will be able to measure "cyclical" influences of much greater than fifteen years of lag. Empirically it has been observed in previous studies that lags of unemployment of about 7-15 years have tended to show positive relations to general mortality rates. As a result of those earlier findings, we can, in the present study, take the theoretical position that a principal factor underly-

ing the existence of those two relations is the vulnerability to future episodes of loss and illness of people who have once experienced major loss and illness, especially as engendered by the cyclic movements of national economic activity.

During the present study, it was again confirmed that patterned relations do exist between the unemployment and mortality rates at lags of greater than five years, and that the range of these lagged relations is 7–15 years. Further, the peak lags within this range were found at approximately 10–11 years. The hypothesis was then once again entertained that it is specifically vulnerability to subsequent recession that tends to account for the peak lags, beyond five years, of the unemployment-mortality relationship.

An examination was then made of the average distances between recessions in the post-War period as they are recorded in the Business Conditions Digest. It was found that there tended to be a range of 10–11 years that is, indeed, so regular as to give the appearance of a true periodicity of recessions at roughly each decade (i.e., 1949, 1960, 1970, 1980). These findings provided empirical support for the view that the peak ranges and, especially, the peak lags in the unemployment-mortality relation actually reflect vulnerabilities to the trauma of recession that are engendered by the experience of past recessions.

Subsequent analysis, nevertheless, determined that the peak lags of approximately 10–11 years in the unemployment-total mortality relation were clearly part of a longer distributed lag process. This distributed lag process ranges over the entire span of 7–15 years. It is evident that part of the reason for the relatively long span of lagged relations in total mortality is that it describes a compositional effect which reflects different lag patterns among categories of mortality which have different chronic disease causes. Thus, the cirrhosis of liver mortality-unemployment relations, over the long term, tend to peak at approximately 9 years while cardiovascular mortality does so at 10–11 years (and subcategories of cardiovascular disease, by age, also vary somewhat in their peak long-term lag).

Stability of the Relations

It is a matter of concern in time series analysis that relations be relatively stable across the time span of analysis. To the extent that the relations—which can be understood as average relations—are unstable, they will be less appropriate for explanation of variance, over any intervening span, or for forecasting. Also, it is reasonable to test the basic explanatory equations and especially the theoretically crucial variables, for time spans that are not covered by them.

The principal explanatory equations were therefore tested for internal 1950–1980 stability through the Chow test. This test splits the period in two—i.e., 1950–1965 and 1966–1980—and compares the resulting two fitted equations according to the magnitudes of their coefficients. Equations explaining mortality rates for the nine principal age groups (infants, 1–14, 15–24, 25–34, 35–44, 45–54, 55–64, 65–74 and 75 and over) were analyzed in this way. The result was that no significant difference could be found between the two

periods in the coefficients of the economic variables and almost all other variables. The only exceptions were that in two age groups specific control variables had to be removed from the equations in order to achieve stability for the economic variables. For 15–24 year old mortality rates cigarette consumption, divorce rates and the proportion of the population living alone were removed; for 65–74 mortality rates, spirits consumption was removed.

Additional tests were performed using equations which were initially fitted to 1950–1980 over the periods 1960–1980, for each of the nine groups. In all cases the short-run relations of the mortality rates to recessional indices, especially the unemployment rate, were found at similar lags. For infant mortality the peak lag was zero; for all other age groups the peak lag was at approximately 3 years during 1950–1980 and 1960–1980, and 2–3 years during 1940–1960 and 1950–1970. For three time spans, 1950–1970, 1950–1980, 1960–1980, the longer-term lagged relations between unemployment and mortality rates over age 45 were significant at 7–15 years; for 1940–1960 those relations were significant at 9–12 years.

Principal Data Sources

Per capita real income: U.S. Bureau of Economic Analysis. *The National Income and Product Accounts of the United States, 1929–1974;* Survey of Current Business.

Unemployment rates and ratios: U.S. Bureau of Labor Statistics. *Employment and Earnings,* monthly.

Labor force participation rates: U.S. Bureau of Labor Statistics. *Special Labor Force Reports.*

Business failure rate: Dun & Bradstreet, Inc., New York, N.Y. *Monthly New Business Incorporation Report.*

Income ratios—median income of full-time workers with income: U.S. Bureau of the Census. *Current Population Reports,* Series P-60.

Average weekly hours worked in manufacturing establishments: U.S. Bureau of Labor Statistics. *Employment and Earnings,* monthly.

Cigarette consumption per capita:
U.S. Bureau of Alcohol, Tobacco, & Firearms. *Alcohol & Tobacco Summary Statistics.*
U.S. Federal Highway Administration. *Highway Statistics.*

Divorce rate: U.S. Bureau of the Census. *Current Population Reports,* Series P-20

Female heads of household: U.S. Bureau of the Census. *Current Population Reports,* Series P-20.

AFDC: U.S. Social Security Administration. *Social Security Bulletin.*

Military personnel: U.S. Department of Defense. *Selected Manpower Statistics,* annual.

Crimes known to police: U.S. Federal Bureau of Investigation. *Uniform Crime Reports for the United States,* annual.

Arrest, total and narcotics: U.S. Federal Bureau of Investigation. *Uniform Crime Reports for the United States,* annual.

Imprisonment: U.S. Law Enforcement Assistance Administration. *National Prisoner Statistics,* superceded by *Prisoners in State and Federal Institutions on December 31,* annual.

Mental Hospitalization: U.S. National Institute of Mental Health. *Patients in Mental Institutions.*

Birth rates: U.S. National Center for Health Statistics. *Vital Statistics of the United States,* annual.

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APPENDIX B—DETAILED ANALYTIC TABLES

Structure of the Appendix Tables

Each of the Appendix Tables 1-33 describes one time series regression equation showing the relation between measures of economic change and indices of pathology, holding constant other risk factors for health and social pathology as discussed in Chapter IV on the "Economic Change Model of Pathology." The Appendix tables only represent a fraction of the total regression equations on which this report is based. A full set of detailed tables is available from the author.

Five components are included in the Economic Change Model: (1) the exponential trend in real per capita income, (2) economic instability, (3) economic inequality, (4) adaptational error associated with economic growth, and (5) random shocks.

As reported in the Appendix tables, the outstanding statistical relationships are grouped in a manner by which they can be identified with the five components of the Economic Change Model. In the Appendix tables, four major categories of variables are found: Economic, Behavioral, Family and Household, and Other Controls. The Economic variables in the Appendix tables include the Economic Change Model categories of: (1) the exponential trend in real per capita income, (2) economic instability, and (3) economic inequality. The Behavioral and Family and Household variables include those which in the Economic Change Model occur under (4) adaptational error associated with economic growth. Other Controls in the Appendix tables include the Economic Change Model Category of (5) random shocks. Other Controls also include the variable rho, which is derived from the Cochrane-Orcutt procedure for minimizing autoregression among residuals.

To the immediate right of most of the variables, and in parentheses, is the designation of the duration of lag in the relationships. The lag is in years (eitner the peak years of the relations or the range). If the range is designated, rather than the peak, the relation is distributed over the years identified. For example (7-15) describes lagged relations distributed over an entire 7-15 year period; the coefficient and related statistics refer to the unweighted sum of the lagged relations. In those cases where no lag is designated in parentheses, the relation has been tested only at zero lag and is therefore only significant at that lag (i.e., for the exponential trend in real income per capita and the age/sex-specific labor force participation rate).

The independent variables are used in one of three forms: rates, annual changes (of rates), and ratios. If neither annual changes nor ratios are actually stated in the variable name then the independent variable is in rate form—i.e., even if the term rate is not stated. Annual changes refer to the year-to-year arithmetic

changes (or "first differences") in the independent variables. Ratio variables either refer to measures of economic inequality or to alcohol consumption. Ratios designating economic inequality are: (a) ratios of age/sex-specific unemployment rates to total population unemployment rates or (b) ratios of age-specific median family income. Alcohol consumption ratios may be stated for specific beverages (spirits, wine or beer), and refer to the proportion of total per capita consumption of alcohol that is attributed to the per capita consumption of any one beverage.

The sequence of presentation of the tables is by major topic—i.e., total mortality, cardiovascular-renal disease mortality, cirrhosis mortality, suicide mortality, homicide mortality, state and county mental hospital resident patients, crimes known to the police, and arrests. In the full set of detailed tables all major topics are subclassified by age and where possible by sex; total mortality is separately analyzed for the non-white population. On occasion, more than one table (and thus more than one equation) will be presented for specific dependent variables. Where (1) different expressions were nearly equally effective from a statistical viewpoint, and (2) demonstrated the theoretical importance of specified explanatory or control variables, more than one equation is represented.

Appendix Tables

Titles	*Table*
Total Mortality Rate, 1950-1980, by 10-year age groups	1-6
Cardiovascular-renal Disease Mortality Rate, 1950-1980, by 10 year age groups	6-12
Cirrhosis Mortality Rate, 1951-1978, Male, 45-54 and up	13-15
Suicide Mortality Rate, 1951-1980, Total, age 15-24 and 45-54	16-17
Suicide Mortality Rate, 1951-1978, Male, 45-54 and 55-64	18-19
Homicide Mortality Rate, 1951-1980, Total, 1-14 and 15-24	20-21
Homicide Mortality Rate, 1951-1978, Male, 15-24	22
State and County Mental Hospital Resident Patients Rate, 1950-1979, Total, Age 25-44 and 45-64	23-24
Crimes Known to the Police, 1950-1980, By Crime	25-30
Arrest Rate, 1950-1980, Total, Age 18-24 and 25-34	31-32
Fraud and Embezzlement Arrest Rate, 1950-1980, Total Population	33

TABLE 1.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: 35–44—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.776906E−03	−11.6
Labor force:		
Unemployment rate (2)	2.231	2.188
Unemployment rate (7–15)	1.130	5.049
Behavioral:		
Cigarettes (4–8)	.179E−03	5.519
Spirits (0)	.251	2.616
Family and household: Living alone, annual change (0)	.651E−02	2.046
Other controls:		
RHO	.556	3.66
Constant	1.156	2.514

R-Squared = 0.905
Adjusted R-Squared = 0.88
F-Statistic (6., 23.) = 28.464
Durbin-Watson statistic = 1.794

TABLE 2.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: 45–54—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.143E−02	−17.445
Labor force:		
Unemployment rate (2)	5.0104	3.429
Unemployment rate (7–15)	1.7	7.445
Business failure (0)	.695E−02	2.775
Behavioral:		
Cigarettes (4–8)	.192E−03	5.914
Spirits (0)	.534	3.726
Family and household: Living alone, annual change (0)	.148E−01	2.424
Other controls:		
RHO	−.555E−02	−.309E−01
Constant	6.043	11.327

R-Squared = 0.989
Adjusted R-Squared = 0.986

TABLE 3.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: 55–64—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.31E-02	−13.731
Labor force:		
Unemployment rate (2)	15.48	3.092
Unemployment rate (7–15)	3.873	10.111
Labor force participation rate, 55–64 male, annual change (0)	−.245	−4.232
Manuf. Hours (0)	−.375	−3.667
Business failure (1)	.103E-01	2.199
Behavioral: Cigarettes (4–8)	.626E-03	7.202
Family and household: Living alone, annual change (0)	.535E-01	3.274
Other controls:		
RHO	−.319	−1.846
Constant	27.57	8.384

R-Squared = 0.991
Adjusted R-Squared = 0.988
F-Statistic (8., 21.) = 231.353
Durbin-Watson statistic = 2.11

TABLE 4.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: 55–64—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.297E-02	−12.545
Labor force:		
Unemployment rate (2)	9.26	2.043
Unemployment rate (7–15)	1.868	2.980
Behavioral:		
Cigarettes (4–8)	.356E-03	3.165
Spirits (0)	.851	2.008
Family and household: Living alone, annual change (0)	.389E-01	2.444
Other controls:		
RHO	.286	1.636
Constant	16.808	10.653

R-Squared = 0.956
Adjusted R-Squared = 0.944
F-Statistic (6., 23.) = 64.525
Durbin-Watson statistic = 1.773

TABLE 5.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: 65–74—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.732E−02	−16.279
Labor force:		
Unemployment rate (2)	23.190	2.471
Unemployment rate (7–15)	2.667	2.1
Over 65 labor force participation rate, annual change (0)	−.348	−2.307
Behavioral:		
Cigarettes (4–8)	.113E−02	4.407
Spirits (0)	1.546	1.585
Family and household: Living alone, annual change (0)	.912E−01	2.527
Other controls:		
RHO	.121	.665
Constant	33.736	9.052

R-Squared = 0.977
Adjusted R-Squared = 0.970
F-Statistic (7., 22.) = 130.174
Durbin-Watson statistic = 2.032

TABLE 6.—MULTIPLE REGRESSION EQUATION FOR TOTAL MORTALITY RATE, AGE: OVER 75—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.119E−01	−9.584
Labor force:		
Unemployment rate (2)	77.439	2.767
Unemployment rate (7–15)	8.8468	2.65
Over 65 labor force participation rate, annual change (0)	−1.067	−2.585
Business failure (0)	.105	2.264
Behavioral: Cigarettes (4–8)	.229E−02	4.395
Family and household: Living alone, annual change (0)	.375	3.412
Other controls:		
RHO	.358E−01	.196
Constant	84.719	9.975

R-Squared = 0.953
Adjusted R-Squared = 0.938
F-Statistic (7., 22.) = 60.56
Durbin-Watson statistic = 1.897

TABLE 7.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: 25–34—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T Statistic
Economic:		
Income: Real income PC, exp. trend	−0.204E-03	−21.230
Labor force:		
Unemployment rate (2–3)	.435	11.547
Unemployment rate (5)	.468	9.289
Unemployment rate (10)	.409	10.491
Business failure (0)	.885E-03	6.825
Behavioral:		
Wine ratio (2)	−.112	−4.377
Cigarettes, annual change (0)	.184E-04	2.331
Cigarettes (6)	.609E-04	11.106
Family and household:		
Divorce (1)	.282E-01	6.063
Living alone (0–1)	.104E-02	5.835
Other controls:		
RHO	−.489	−3.074
Constant	.416	28.413

R-Squared = 0.999
Adjusted R-Squared = 0.999
F-Statistic (10., 19.) = 1507.87
Durbin-Watson statistic = 2.191

TABLE 8.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: 35–44—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.61E-03	−27.582
Labor force:		
Unemployment rate (3)	1.138	6.368
Unemployment rate (5)	1.007	5.154
Unemployment rate (10)	1.8	19.711
Behavioral:		
Cigarettes, annual change (0)	.153E-03	4.991
Cigarettes (6)	.164E-03	15.176
Spirits ratio (3)	.366	7.401
Spirits (2)	.115	6.097
Wine (0)	−.721E-01	−4.022
Family and household: Living alone (0–1)	.457E-02	8.695
Other controls:		
RHO	−.636	−4.516
Constant	1.183	35.603

R-Squared = 0.999
Adjusted R-Squared = 0.999
F-Statistic (10., 19.) = 1018.12
Durbin-Watson statistic = 2.216

TABLE 9.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: 45–54—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T Statistic
Economic:		
Income: Real income PC, exp. trend	−0.186E-02	−32.949
Labor force:		
Unemployment rate (3)	2.313	5.818
Unemployment rate (5)	2.280	5.318
Unemployment rate (10)	5.013	22.422
Behavioral:		
Cigarettes (0)	.262E-03	7.116
Cigarettes (6)	.515E-03	14.442
Spirits ratio (3)	.602	7.297
Family and household:		
Divorce (1)	.112	4.463
Living alone (0–1)	.114	9.373
Other controls:		
RHO	−.491	−3.086
Constant	3.815	21.592

R-Squared = 0.999
Adjusted R-Squared = 0.999
F-Statistic (9., 20.) = 3008.14
Durbin-Watson statistic = 2.25

TABLE 10.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: 55–64—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.348E-02	−22.138
Labor force:		
Unemployment rate (3)	10.212	7.551
Unemployment rate (10)	9.589	14.705
Business failure, annual change (0)	.149E-01	5.184
Business failure, annual change (2)	.227E-01	4.907
Behavioral: Cigarettes (6)	.118E-02	12.336
Family and household:		
Divorce, annual change (1)	.871	5.547
Living alone (0)	.375E-01	7.943
Other controls:		
RHO	−.471	−2.927
Constant	12.550	56.617

R-Squared = 0.999
Adjusted R-Squared = 0.998
F-Statistic (8., 21.) = 1762.11
Durbin-Watson statistic = 2.18

TABLE 11.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: 65–74—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income:		
Real income PC, exp. trend	−0.476E−02	−20.435
Over 65 ratio (2)	−4.839	−2.4630
Labor force:		
Unemployment rate (3)	15.284	4.294
Unemployment rate (10)	24.209	13.119
Business failure, annual change (0)	.412E−01	4.891
Business failure, annual change (2)	.258E−01	2.389
Behavioral:		
Cigarettes (6)	.231E−02	8.081
Beer (5)	−.706E−01	−2.038
Other controls:		
RHO	−.451	−2.370
Constant	30.839	25.280

R-Squared = 0.998
Adjusted R-Squared = 0.998
F-Statistic (8., 21.) = 1174.04
Durbin-Watson statistic = 2.233

TABLE 12.—MULTIPLE REGRESSION EQUATION FOR CARDIOVASCULAR-RENAL DISEASE MORTALITY RATE, AGE: OVER 75—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.116E−01	−12.984
Labor force:		
Unemployment rate (3)	63.157	6.067
Unemployment rate (10)	47.414	7.395
Business failure, annual change (0)	.175	6.482
Business failure, annual change (7)	.180	5.188
Behavioral:		
Cigarettes (6)	.677E−02	7.739
Beer (5)	−1.032	−8.341
Wine (1)	3.694	3.097
Family and household: Living alone, annual change (0)	.170	2.682
Other controls:		
RHO	−.446	−2.732
Constant	96.878	22.651

R-Squared = 0.996
Adjusted R-Squared = 0.994
F-Statistic (9., 20.) = 495.558
Durbin-Watson statistic = 2.280

TABLE 13.—MULTIPLE REGRESSION EQUATION FOR CIRRHOSIS MORTALITY RATE, MALE, AGE: 45–54—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: 45–54 ration (1)	−0.160	−2.215
Labor force: Unemployment rate (8)	.557	2.439
Behavioral:		
Spirits (1)	.458	2.192
Wine, annual change (3)	.127	4.554
Beer ratio (0)	.516E–01	−5.827
Family and household: Divorce, annual change (1)	.126	5.101
Other controls:		
RHO	.748	−4.115
Chem. prod. (1)	.764E–03	3.208
Constant	.961	5.343

R-Squared = 0.995
Adjusted R-Squared = 0.994
F-Statistic (7., 20.) = 436.293
Durbin-Watson statistic = 1.926

TABLE 14.—MULTIPLE REGRESSION EQUATION FOR CIRRHOSIS MORTALITY RATE, MALE, AGE: 55–64—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: 55–64 ration (1)	−0.472	−3.277
Labor force: Unemployment rate (8)	.919	2.542
Behavioral:		
Spirits (1)	.129	4.326
Wine, annual change (3)	.111	2.520
Beer ratio (0)	−.525E–01	−3.914
Family and household: Divorce, annual change (1)	0.200	5.361
Other controls:		
RHO	−.613	−2.939
Chem. prod. (1)	.949E–03	3.491
Constant	1.225	4.486

R-Squared = 0.994
Adjusted R-Squared = 0.992
F-Statistic (7., 20.) = 328.789
Durbin-Watson statistic = 1.915

TABLE 15.—MULTIPLE REGRESSION EQUATION FOR CIRRHOSIS MORTALITY RATE, MALE, AGE: 65–74—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income:		
Real income PC, annual change (0)	−0.907E−04	−2.504
Over 65 ratio (1)	−.297	−2.639
Behavioral:		
Wine, annual change (3)	.907E−01	3.252
Beer ratio (1)	−.255E−01	−2.361
Family and household: Divorce, annual change (1)	.955E−01	3.685
Other controls:		
RHO	.673	4.153
Chem. prod. (1)	.983E−03	5.662
Hepatitis incidence (2)	.103E−02	2.392
Constant	.877	7.054

R-Squared = 0.922
Adjusted R-Squared = 0.895
F-Statistic (7., 20.) = 23.726
Durbin-Watson statistic = 1.750

TABLE 16.—MULTIPLE REGRESSION EQUATION FOR SUICIDE MORTALITY RATE, AGE: 15–24—UNITED STATES, 1951–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force:		
Unemployment rate (0)	0.146	3.371
Unemployment rate, annual change (2)	0.214	4.251
Behavioral: Total alc. (3)	0.393E−01	4.398
Family and household:		
Divorce, annual change (2)	0.142E−01	2.430
Living alone (0)	0.979E−03	7.728
Other controls:		
RHO	−0.322	−1.624
Constant	−.825E−01	−6.199

R-Squared = 0.995
Adjusted R-Squared = 0.994
F-Statistic (5., 24.) = 845.755
Durbin-Watson statistic = 1.916

TABLE 17.—MULTIPLE REGRESSION EQUATION FOR SUICIDE MORTALITY RATE, AGE: 45–54—UNITED STATES, 1951–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.125E-04	−5.[illegible]8
Labor force:		
Unemployment rate (0)	.240	3.398
Business failure (1)	.555E-03	6.073
Behavioral: Spirits ratio (0)	.521E-01	3.19[illegible]
Family and household: Divorce (1)	.207E-01	2.251
Other controls:		
RHO	−.539	−3.175
Constant	.119	6.775

R-Squared = 0.981
Adjusted R-Squared = 0.977
F-Statistic (6., 23.) = 158.947
Durbin-Watson statistic = 1.988

TABLE 18.—MULTIPLE REGRESSION EQUATION FOR SUICIDE MORTALITY RATE, MALE AGE: 45–54—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.546E-04	−7.592
Labor force:		
Unemployment rate (0)	.436	3.594
45–54 unemployment ratio (2)	.307E-03	4.265
Labor force participation rate (1)	−.582E-02	−2.029
Business failure (1)	.618E-03	4.231
Behavioral: Spirits ratio (0)	.114	5.337
Family and household: Divorce, annual change (1)	.373E-01	3.593
Other controls:		
RHO	−.626	−3.839
Constant	.838	2.922

R-Squared = 0.993
Adjusted R-Squared = 0.990
F-Statistic (7., 20.) = 280.118
Durbin-Watson statistic = 2.206

TABLE 19.—MULTIPLE REGRESSION EQUATION FOR SUICIDE MORTALITY RATE, AGE: 55–64—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, exp. trend	−0.584E−042	−21.042
Labor force:		
Unemployment rate (1)	.266	2.292
55–64 unemployment ratio (3)	.308E−03	4.541
Business failure (1)	.426E−03	2.142
Behavorial:		
Family and household: Living alone, annual change (3)	.172E−02	3.473
Other controls:		
RHO	.992E−01	.475
Constant	.482	45.569

R-Squared = 0.973
Adjusted R-Squared = 0.967
F-Statistic (5., 23.) = 145.260
Durbin-Watson statistic = 1.858

TABLE 20.—MULTIPLE REGRESSION EQUATION FOR HOMICIDE MORTALITY RATE, AGE: 1–14—UNITED STATES, 1951–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income:		
AFDC	0.612E−04	5.826
AFDC, annual change (3)	.509E−04	2.025
Labor force: Unemployment rate (2)	.194E−01	2.451
Behavioral: Total Alc., annual change (0)	.108E−01	4.688
Family and household: Living alone (1)	.714E−04	3.280
Other controls:		
RHO	−.158	−.862
Constant	−.390E−03	−.693

R-Squared = 0.989
Adjusted R-Squared = 0.986
F-Statistic (5., 23.) = 347.841
Durbin-Watson statistic = 1.943

TABLE 21.—MULTIPLE REGRESSION EQUATION FOR HOMICIDE MORTALITY RATE, FEMALE, AGE: 15–24—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: AFDC, annual change (3)	0.258E-03	3.486
Labor force:		
Under 25 unemployment ratio (3)	.174E-04	2.842
16–17 labor force participation rate (0)	.646E-03	4.642
Behavioral:		
Total Alc. (2)	.277E-01	7.094
Narc. arrests (0–1)	.115E-04	3.700
Family and household:		
Other controls:		
RHO	—.840E-01	—.438
Constant	—.622E-01	—5.466

R-Squared = 0.991
Adjusted R-Squared = 0.989
F-Statistic (5., 21.) = 448.350
Durbin-Watson statistic = 2.028

TABLE 22.—MULTIPLE REGRESSION EQUATION FOR HOMICIDE MORTALITY RATE, MALE, AGE: 15–24—UNITED STATES, 1951–78

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force:		
Under 25 unemployment ratio (0)	0.332E-03	2.575
16–17 labor force participation rate (0)	.172E-02	3.920
Behavioral:		
Total Alc. (2)	.157	16.817
Narc. arr., annual change (1–2)	.616E-04	2.433
Family and household: Divorce, annual change (0)	.556E-01	3.543
Other controls:		
RHO	—.232	—1.241
Constant	—.381	—8.946

R-Squared = 0.992
Adjusted R-Squared = 0.990
F-Statistic (5., 21.) = 496.723
Durbin-Watson statistic = 1.959

TABLE 23.—MULTIPLE REGRESSION EQUATION FOR STATE AND COUNTY MENTAL HOSPITAL PATIENTS RATE, AGE: 25–44—UNITED STATES, 1950–79

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force:		
Under 25 unemployment rate (3–5)	1.404	5.673
25–44 unemployment ratio (1)	0.117E–02	2.814
Behavioral:		
Total Alc., annual change (1)	.386	2.373
Total Alc., annual change (0)	.443	2.500
Family and household: Divorce, annual change (1)	.178	2.342
Other controls:		
RHO	—.288	—1.620
Endogenous (1)	.583	13.144
Time trend	—.510E–01	—9.917
Constant	1.254	6.904

R-Squared = 0.999
Adjusted R-Squared = 0.999
F-Statistic (7., 21.) = 4873.930
Durbin-Watson statistic = 2.093

TABLE 24.—MULTIPLE REGRESSION EQUATION FOR STATE AND COUNTY MENTAL HOSPITAL PATIENTS RATE, AGE: 45–64—UNITED STATES, 1950–79

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force:		
Unemployment rate (3–4)	0.972	2.685
Unemployment rate (6)	2.692	5.763
45–54 unemployment ratio (1)	.340E–02	2.413
Non-white unemployment ratio (0)	.370E–02	6.910
Behavioral: Spirits, annual change (3)	.101	2.025
Family and household: living alone (0)	.733E–02	2.078
Other controls:		
RHO	—.705	—5.360
Time trend	—.524E–01	—17.405
Endogenous (1)	.856	26.475
Constant	—.213	—.677

R-Squared = 0.9999
Adjusted R-Squared = 0.9999
F-Statistic (8., 20.) = 35453.9
Durbin-Watson statistic = 2.124

TABLE 25.—MULTIPLE REGRESSION EQUATION FOR ASSAULT RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income, PC, annual change (0)	−0.250E-03	−2.770
Labor force:		
Unemployment rate (3)	4.485	9.806
Labor force participation rate, male 18–19 (1)	.155E-01	−8.432
Behavioral: Total Alc. (0–1)	.477	10.481
Family and household: Living alone (2)	.102E-01	4.952
Other controls:		
RHO	.686	−5.161
Binary var. (1960)	.507	17.196
Endogenous (1)	.635	15.004
Constant	−1.093	−6.157

R-Squared = 0.9998
Adjusted R-Squared = 0.9997
F-Statistic (7., 22.) = 15869.7
Durbin-Watson statistic = 1.977

TABLE 26.—MULTIPLE REGRESSION EQUATION FOR BURGLARY RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, Annual change (0)	−0.106E-01	−4.919
Labor force:		
Unemployment rate (3)	26.671	3.595
Labor force participation rate, male 18–19 (0)	−.326	−5.453
Labor force participation rate, male 16–17, annual charge (1)	.153	1.936
Behavioral:		
Total Alc. (3)	9.462	3.799
Spirits (2)	2.317	2.213
Other controls:		
RHO	−.211	−1.185
Binary var. (1960)	2.264	3.970
Endogenous (1)	.537	6.029
Constant	2.008	.730

R-Squared = 0.998
Adjusted R-Squared = 0.997
F-Statistic (8., 21.) = 862.948
Durbin-Watson statistic = 2.187

TABLE 27.—MULTIPLE REGRESSION EQUATION FOR LARCENY RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, annual change (0)	−0.112E-01	−2.922
Labor force:		
Unemployment rate (3)	45.329	2.057
Labor force participation rate, male 18-19 (0)	−.541	−3.651
Behavioral:Total Alc. (3)	17.015	3.693
Other controls:		
RHO	.263	1.496
Binary Var. (1960)	4.806	3.761
Endogenous (1)	.656	6.304
Constant	6.953	.875

R-Squared = 0.987
Adjusted R-Squared = 0.984
F-Statistic (6., 23.) = 233.7
Durbin-Watson statistic = 1.813

TABLE 28.—MULTIPLE REGRESSION EQUATION FOR ROBBERY RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, annual change (0)	−0.179E-02	−8.055
Labor force:		
Unemployment rate, annual change (0)	3.969	2.961
Labor force participation rate, male 16–17 (2)	.193778E-01	3.76525
Labor force participation rate, male 18–19 (3)	.339E-01	−6.694
Behavioral:		
Total Alc. (0)	1.516	14.015
Spirits (2)	.649	5.874
Family and household: Living alone, annual change (3)	.573E-02	2.396
Other controls:		
RHO	−.730	−5.853
Binary var. (1960)	.184	3.496
Endogenous (1)	.328	8.356
Constant	−2.173	−5.837

R-Squared = 0.999
Adjusted R-Squared = 0.999
F-Statistic (9., 20.) = 3527.64
Durbin-Watson statistic = 2.34

TABLE 29.—MULTIPLE REGRESSION EQUATION FOR FORCIBLE RAPE RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force: Unemployment rate (3)	0.634	3.736
Behavioral: Total Alc. (1)	.227	9.058
Family and household: Living alone (3)	.481E-02	9.058
Other controls:		
Binary variable (1960)	.495E-01	4.320
RHO	—.893E-01	—.499
Constant	—.573	—16.608

R-Squared = 0.996
Adjusted R-Squared = 0.995
F-Statistic (4., 25.) = 1446.05
Durbin-Watson statistic = 1.909

TABLE 30.—MULTIPLE REGRESSION EQUATION FOR AUTO THEFT RATE (CRIMES KNOWN TO POLICE)—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, annual change (0)	—0.231E-02	—3.442
Labor force:		
Unemployment rate (3)	8.559	2.665
Labor force participation rate, male 18–19 (1)	—.828E-01	—3.942
Labor force participation rate, male 20–24 (0)	—.154	—3.186
Behavioral: Total Alc. (0)	3.834	5.2
Family and household: Divorce, annual change (0)	.89	2.346
Other controls:		
RHO	—.123	—.681
Binary var. (1960)	.647	3.017
Endogenous (1)	.340	3.228
Constant	12.787	3.598

R-Squared = 0.997
Adjusted R-Squared = 0.995
F-Statistic (6., 21.) = 569.556
Durbin-Watson statistic = 2.023

TABLE 31.—MULTIPLE REGRESSION EQUATION FOR TOTAL ARREST RATE, AGE: 18–24—UNITED STATES, 1950–80

(Lag, in years, in parentheses)

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, annual change (1)	−0.232E-04	−2.992
Labor force:		
Unemployment rate (0)	.928E-01	3.043
Unemployment rate, annual change (3)	.722E-01	2.344
Unemployment rate (6)	.926E-01	3.148
Behavioral:		
Total Alc., annual change (0)	.289E-01	2.984
Total Alc., annual change (1)	.363E-01	3.591
Family and household: Living alone (0)	.603E-03	6.801
Other controls:		
Endogenous (1)	.448	9.026
RHO	.507	−3.221
Constant	.234E-01	−6.860

R-Squared = 0.998
Adjusted R-Squared = 0.997
F-Statistic (8., 21.) = 873.129
Durbin-Watson statistic = 2.194

TABLE 32.—MULTIPLE REGRESSION EQUATION FOR TOTAL ARREST RATE, AGE: 25–34—UNITED STATES, 1950–80

(Lag, in years, in parentheses)

	Coefficient	T-Statistic
Economic:		
Income: Real income PC, annual change (1)	−0.221E-04	−2.554
Labor force:		
Unemployment rate (0)	.124	3.380
Unemployment rate (2–3)	.426E-01	3.068
Unemployment rate (6)	.831E-01	2.548
Behavioral:		
Total Alc., annual change (0)	.313E-01	2.828
Total Alc., annual change (1)	.432E-01	3.883
Family and household: Living alone (0)	.219E-03	5.480
Other controls:		
Endogenous (1)	.555	7.198
RHO	.502	−3.181
Constant	−.109E-01	−5.180

R-Squared = 0.994
Adjusted R-Squared = 0.992
F-Statistic (8., 21.) = 348.126
Durbin-Watson statistic = 2.328

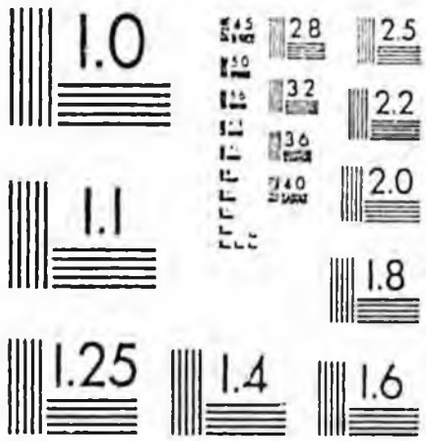
TABLE 33.—MULTIPLE REGRESSION EQUATION FOR FRAUD AND EMBEZZLEMENT ARREST RATE, AGE: TOTAL—UNITED STATES, 1950–80

[Lag, in years, in parentheses]

	Coefficient	T-Statistic
Economic:		
Labor force:		
Unemployment rate (0)	3.23	3.288
Unemployment rate (3)	2.734	2.693
Unemployment rate (6–7)	1.509	2.473
Behavioral: Total Alc., annual change (1)	1.187	3.438
Family and household:		
Divorce (3)	.137	3.876
Living alone (0)	.887E–02	3.773
Other controls:		
Endogenous (1)	.282	2.226
RHO	.154	−.855
Constant	−.979	−6.501

R-Squared = 0.99
Adjusted R-Squared = 0.986
F-Statistic (7., 22.) = 289.776
Durbin-Watson statistic = 2.035

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Hardship and Depression*

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Journal of Health and Social Behavior 1985, Vol. 26 (December):312–327

We argue that successful fulfillment of husbands' and wives' role obligations in the household affects psychological well-being. Ongoing economic hardship–the inability to adequately feed, clothe, and provide medical care for the family–indicates unsuccessful fulfillment of both breadwinner and homemaker obligations. Using a national sample of married couples, we find that economic hardship is increased by low income, low education, being young, and having young children. Economic hardship, in turn, increases both spouses' depression levels. Other factors affect husbands and wives differently. A husband's personal earnings directly decrease his depression, because, we argue, his earnings indicate successful fulfillment of provider obligations. A wife's major role obligation is not provider, but homemaker. We find that a wife's personal earnings do not affect her depression, whereas her education and children do.

The household is a microcosm that reflects the interplay of occupational and family responsibilities and access to material goods. Married couples live, and rear children, in households linked to society by labor market activities that largely determine their level of living. The factors that shape household life tend to be durable and persistent, anchored in economic organizati n, social relations, and family structure (Pearlin, 1975; Pearlin and Johnson, 1977). It is in the household that the larger social and economic order impinges on individuals, exposing them to varying degrees of hardship, frustration, and struggle. The ease or difficulty of meeting household obligations—of having enough money to pay the bills, to feed, clothe, and care for the health of the family—is influenced, ultimately, by socioeconomic status and by factors such as the presence of children, which put demands on the resources associated with SES. The ability to meet family obligations, in turn, has consequences for emotional well-being.

Successful fulfillment of role obligations in the household affects emotional well-being since both husbands and wives are involved with the family above all other life spheres (Pleck, 1983; Mackie, 1983). Traditionally the husband's socially defined household role is that of breadwinner. To most men the primary meaning of work is that it enables them to be good providers for the family (Pleck, 1983). Current laws and norms require the husband to assume the major responsibility for the support of his family if he is able to do so, and reactions to a hypothetical husband who "did not do his best to support his family" are overwhelmingly negative (Slocum and Nye, 1976). The wife's primary role, on the other hand, is to care for the family, not to provide for it. Respondents feel that childcare is the wife's responsibility, and a large majority would reject a wife who "neglected the physical needs of her children"

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Data collection was supported by a grant from the National Science Foundation (Soc 78–18015) to Joan Huber. Sampling, pretesting, and interviewing were conducted by the Survey Research Laboratory of the University of Illinois. An earlier version of this paper was presented at the American Sociological Association annual meeting in San Antonio, 1984.

and Nye, 1976). Even when a woman [illegible] her earnings are often seen as supplementary to her husband's. Few respondents feel it is ever a wife's *duty* to work outside the home, even if she does not have children (Slocum and Nye, 1976). A husband may help his wife with the housework and childcare, but homemaker is not his primary role. A wife may help the family by earning money, but breadwinner is not her primary role. The widespread use of the word "help" underscores which household role is still primary for whom (Lopata, 1971).

Economic hardship undermines both spouses' ability to fulfill their role obligations. Ongoing difficulties in acquiring food, clothing, and medical care for the family indicate the breadwinner's inability to meet basic obligations. It also means that the homemaker lacks the resources necessary to provide adequate family care. Other factors, however, such as education, personal earnings, and children, may affect husbands and wives differently depending on whether they contribute to the fulfillment of the homemaker or breadwinner role. Using a national sample of married couples, we examine those factors that help or hinder successful fulfillment of household role obligations and thus affect psychological well-being.

SOCIOECONOMIC STATUS AND ECONOMIC HARDSHIP

Living on the Edge

In our national sample, 53% of the wives and 41% of the husbands feel some economic hardship. These feelings range from extreme hardship, in which people very often feel that they do not have enough money to buy food, clothing, and medical care for the family, to mild hardship in which these pressures are not felt very often. Feelings of economic hardship are reflections of objective realities; realities in which a lack of income, the presence of young children, being young oneself, and a lack of education converge to make life hard.

Families who feel chronic economic hardship, who never get ahead of their bills, who Rubin (1976) describes as "perched on the edge," and Pearlin and Schooler (1978) describe as engaged in economic "brinksmanship," are, firstly, families with low family incomes. The poor and chronically unemployed obviously feel economic hardships. But they are not the only ones. Many families just up from poverty feel economic hardship. In these families the husband is employed (unless temporarily laid off or sick). The wife may be employed, too, and the husband may work overtime—all to pay for the house, car, and television; the food, clothing, and medical care.

Many people in the working and lower middle classes live with their resources pushed to the breaking point. They spend as much or more than comes in. Each month the bills come on the mortgage, the car, and the appliances and furniture bought on time. Each day the children must be fed and kept clothed. When someone is sick the doctor must be paid and medicine bought. This balance is easily upset by layoffs, seasonal unemployment, strikes, an injury on the job, or getting fired. The day-to-day struggle to pay the bills and feed and clothe the family is then intensified until the husband gets back to work, or the wife gets a job, or both. During any temporary unemployment the debts increase, and the family gets further behind.

Low family income increases economic hardship, but the translation from income to economic hardship is not one-to-one. Other factors make independent contributions. Couples who are young, often recently married, feel more economic hardship than older, more established couples; not only are their earnings at a low point, but what they have must buy more. Veroff et al. (1981) found that younger men were more likely than older to report that they did not feel adequate as a breadwinner. Young couples who start with little or nothing must make major investments in a car, furniture, and household appliances. Setting up a household is expensive and is likely to increase a young couple's debt. If they also buy their first home, the down payment and mortgage payments increase financial difficulties (Wilensky, 1961).

Young children also increase economic hardship. Each dollar must go further—must buy more food, clothes, and medical care. The more young children, the more economic strain on the household. Campbell et al. (1976) found

that children, especially young children, increase financial pressures on the family. Families with three or more children were more likely than others to report that they "worry all the time" about meeting their bills. Younger children increased pressures more than older. Using a measure of "psychological stress" that combined economic worries and emotional well-being, Campbell et al. found that stress scores were highest for parents of children less than six years old; as the children's ages increased the parents' stress decreased. Young children drain the family's economic resources. Conversely, childless couples and couples with grown children have the most adequate incomes of all life course groups (Campbell et al., 1976).

Income, age, and young children are, of course, associated with one another. A young couple is likely to have young children and a low income. Furthermore the presence of young children is likely to increase the pressures to buy a home. An apartment may seem too small or the couple may prefer a house with a yard as a better place to raise children. At the same time that young children increase the pressures to buy a house and thus increase economic difficulties, the presence of young children often means the mother does not work outside the home. She may quit her job while the children are young, thus further increasing the family's economic hardship (Wilensky, 1961). If the woman continues to be employed, family funds are often needed for day-care. This produces an early life-cycle economic squeeze (Wilensky, 1961).[1]

Low education also contributes to economic hardship. Not only is low education associated with more children and less income, but lack of education makes it more difficult to cope with an inadequate income. Education contributes to the skills, information, cognitive flexibility, and presence of well-educated friends that help a person to deal with the stresses of life, including a low income. Veroff et al. (1981) found that men with low levels of education are more likely to feel inadequate as breadwinners than men with high levels of education. People who have not finished or just finished high school are doubly disadvantaged because their low education translates into low earnings and their low education increases the difficulties of coping with the low earnings. Thus, we expect that education and income have an interactive effect on economic hardship. Stated positively, each year of education increases the subjective value of a dollar, making it go further to decrease economic hardship. The converse, of course, is that for people with low education the dollars do not go as far to decrease economic hardship.

We expect that this is especially true for wives. Usually it is the wife's responsibility to run the household: to do the shopping, take the children to the doctor, and often pay the bills or keep the checking account. It is the husband's job to make the money but the wife's job to make ends meet. This arrangement is especially prevalent in the working classes where there is just enough money to get by, where the budget must be juggled to get all the bills paid and still have enough money left for food (Rubin, 1976). Management, budgeting, and purchasing responsibilities fall on the wife's shoulders, and it is often her responsibility to make sure that the earnings stave off economic hardship. Thus, we expect that the synergistic effect of low education coupled with low earnings will have a larger effect on the wife's perceived economic hardship than on her husband's.

Our expectations about the determinants of economic hardship may be summarized with the following hypotheses:

1. Low family income, low education, and their combination increase perceived economic hardship of husbands and wives.
2. Young husbands and wives feel more economic hardship than older couples.
3. The more young children in the family, the greater the husband's and wife's perceived economic hardship.
4. The synergistic effect of low education and low income on perceived economic hardship is greater for wives than for husbands.

SOCIOECONOMIC STATUS AND DEPRESSION

Material and Emotional Well-Being

"The dominant memories are of pain and deprivation—both material and emotional, for

one follows the other almost as certainly as night follows day" (Rubin 1976:46).

Economic hardship has emotional consequences. Young, recently married couples with high school degrees or less, often with young children, struggle to manage a household and feed a family on an inadequate income. "The economic realities that so quickly confronted young, working-class couples richocheted through the marriage, dominating every aspect of experience" (Rubin 1976:75). Young, poorly educated and poorly paid couples with young children feel economic hardship—hardship that leads to feelings of disappointment, betrayal, sadness, frustration, and hopelessness.

The chronic strain of struggling to pay the bills and feed and clothe the family takes its toll, often in feelings of depression—in feeling run down, that everything is an effort, that the future is hopeless, that you can't shake the blues, that nagging worries make for restless sleep, and that there is not much to enjoy in life. When life is a constant struggle to get by, when it is never taken for granted that there will be enough money for food, clothes, and medical care, people feel worn down and hopeless. There is no relief from the struggle—it pulls at the person every day in the form of another bill, an injury that must be attended to, or the arrival of the last week in the month with less than a week's worth of food money left.

The inverse relationship between socioeconomic status and psychological distress is well-documented (Dohrenwend and Dohrenwend, 1969; Kessler, 1982; Liem and Liem, 1978; Wheaton, 1978), and longitudinal analysis supports a causal interpretation: differences in the demands and resources of various social positions produce differences in distress (Pearlin et al., 1981; Wheaton, 1978). Exploring the relationship between socioeconomic status and psychological well-being further, Pearlin and his colleagues have investigated the detrimental effects of chronic, ongoing hardships. Pearlin (1975:192) describes the emphasis on chronic, rather than acute, stress:

> It is a focus on the conflicts and frustrations that are built into activities of the normal life cycle. Unlike those studies that focus on crises and ephemeral threats (life events) as the major precursors of stress, our research focuses on durable, structured experiences that people have as they engage in their various social roles, such as economic, occupational, family, and parental roles.

Although most investigations of the SES-distress relationship have focused on life events (Kessler, 1979; Kessler and Cleary, 1980; Myers et al., 1974), Pearlin and his colleagues investigated the effects of chronic economic hardship on depression (Pearlin et al., 1981). They focused on the economic aspects of socioeconomic status, proposing that chronic economic strain is one factor that explains the relationship between income and depression. They found that decreases in income increase economic hardship which in turn increases depression (in part by way of decreasing self-esteem and feelings of mastery).

Our next hypothesis is the following:

5. For both husbands and wives, economic hardship increases depression.

Beyond Material Well-Being

Economic difficulties are important mediators of the association between socioeconomic status (especially family income) and depression, but they are not the whole story. According to Kessler (1982), more than a simple economic reality is involved in the relationship between SES and distress. We expect that other aspects of socioeconomic status also affect depression in other ways. The importance of these components may differ for husbands and wives (Kessler, 1982).

Personal earnings, by adding to family income, decrease economic hardship and depression. But personal earnings, independently of their purely financial aspects, may also affect depression. Family income, from whatever source—a spouse's earnings, social security, or public assistance—is important to psychological well-being because it allows one to pay the bills, and feed, clothe, and care for the health of one's family. But the money one earns oneself may affect well-being in other ways. For instance, income from unemployment compensation is very important to pay the bills and buy food, but it does little or nothing for one's feelings of self-worth and self-respect. Personal earnings, on the other hand, may be important for self-esteem be-

cause they symbolize worth in our society. This may be especially true for husbands.

A husband's primary role obligation is to be the family breadwinner (Pleck, 1983). Not only is the husband's primary role in the family that of breadwinner, but the primary meaning of work to a majority of husbands is that it enables them to be good breadwinners. Most men are more involved with their families than with their jobs, and most get more satisfaction from the family than from the job. The primary meaning of work is not that it lets a man express achievement motivation or find intrinsic gratification, but that it enables him to fulfill his socially defined breadwinner obligations (Yankelovich, 1974; Andrews and Withey, 1976; Wilensky, 1981; Pleck, 1983). A "good husband" is a good provider. Therefore, a man's personal earnings may be very important to his psychological well-being. In his analysis of eight surveys, Kessler (1982) found that men's distress levels were most affected by personal earnings. Family income and education had smaller effects and occupation was not significant.

On the other hand, even if a woman is employed, breadwinner is not the wife's role obligation. Wives are not expected to be providers. Thus, fulfillment of the role expectations of wife does not depend on earning money. Whereas a "good" husband is largely a good breadwinner, a "good" wife is a homemaker, nurturer, and childrearer. Furthermore, many employed women see their jobs as adjuncts to their husband's. A wife who is employed is usually perceived as helping out the family economically, but her primary role is not provider. Therefore, personal earnings may be less important to a wife's well-being. Her education and children may be more salient.

Education provides knowledge, skills, and information that may improve coping ability. Education exposes people to more than one way of looking at the world, thus increasing cognitive flexibility and coping. Education also symbolizes worth to oneself and others. Thus finishing college, for example, may increase self-esteem and pride in one's accomplishments. Finally, education may give one a sense of mastery over one's life and hope about the future by providing the skills, information, and credentials necessary to control one's life. Feelings of mastery and a sense of control over one's life are important to psychological well-being, not only because they decrease feelings of hopelessness, but because they are associated with an active problem-solving approach to life (Pearlin and Schooler, 1978; Wheaton, 1980). In contrast, the feeling that one is helpless to control one's life may lead to hopelessness, giving up, and depression.

Education may be especially important to wives' psychological well-being, for a number of reasons. First, approximately 50% of married women are not employed. Therefore they must link their self-esteem to something other than a job. Even women who are employed generally earn much less than their husbands, and they tend to be in jobs where high levels of education do not translate into high earnings, as they do for men. For a wife, a college degree, for instance, may be more important to her self-worth than a comparable degree for her husband simply because her degree does not translate into comparable earnings. Second, a woman's identity, even if she is employed, may be more strongly linked to the home, family, and children than to her job (Mackie, 1983). Education is a resource that helps a wife fulfill her homemaker role. Less educated people are not only lower in overall efficacy and have less control over planning, they are also more helpless in their relationships with other people (Veroff et al., 1981). This means that more highly educated women may have an easier time and be more successful than other women in the daily work of family nurturance. Kessler (1982) and Kessler and McRae (1982) found that, for women, employed or not, education was more important than earnings or family income in predicting distress. Occupation was least important.

If a wife's primary role obligation is to be a homemaker and mother, to provide emotional support and nurturance to the family, then children may affect her psychological well-being. As discussed earlier, children may increase the family's economic hardship and thus decrease the psychological well-being of both husband and wife. But children may also have positive effects on psychological well-being, independent of economic burdens. This may be especially true for wives. Although this inference follows from our arguments concerning the importance to well-being of successfully fulfilling role obligations, past literature does

not strongly support this hypothesis. Gove and Geerken (1977) found that children are detrimental to women's mental health because they increase demands on them, decrease their privacy, and isolate them from other adults. Most research, however, finds that children have an insignificant or inconsistent effect on wives' psychological well-being (Kessler and McRae, 1982; Ross et al., 1983; Radloff, 1975; Gore and Mangione, 1983). Radloff, for example, found that, for housewives, children do not increase depression, and she had weak evidence that they decrease depression. Children had no consistent effect on the depression levels of employed women (Radloff, 1975). Insignificant and inconsistent effects could result if children had both positive and negative effects on psychological well-being. By increasing economic hardship, children may increase depression, but children may bring gratifications as well as burdens. For wives, they may indicate successful fulfillment of role obligations. Thus, children may decrease wives' depression, independent of economic hardship.

In sum, we expect that education, personal earnings, and children affect depression independently of economic hardship, and that the importance of these components differs for men and women. Thus we hypothesize:

6. For husbands, personal earnings decrease depression independent of economic hardship.
7. For wives, education decreases depression independent of economic hardship.
8. For wives, children decrease depression independent of economic hardship.

METHODS

Sample

This research is based on a 1978 telephone survey of a national probability sample of U.S. households. Random digit dialing procedures were used to ensure the inclusion of unlisted numbers (Sudman, 1973; Waksberg, 1978). The age range for respondents was 18 through 65. If they were married, their spouse was also asked to be interviewed.[2] The spouses' ages ranged from 18 to 75. Of the members of each couple who were asked first, 4.2% refused to be interviewed. Of the 95.8% who gave interviews, 20.1% of their spouses refused.[3] Thus, the total response rate for married couples (in which both spouses were interviewed) is $100 \times (1 - .042)(1 - .201) = 76.5\%$. There are a total of 680 wives and 680 husbands in the completed sample.

Variables

Depression is measured using a modified form of the Center for Epidemiological Studies' Depression scale (CES-D) (Radloff, 1977). The CES-D measures symptoms of depression in community populations; it does not indicate a diagnosis of clinical depression. However, the CES-D discriminates between clinically depressed patients and others, and it correlates highly with other depression rating scales (Weissman et al., 1977). Respondents were asked to report the number of days in the past week that they had each symptom. Answers were coded from *0* to *7*. Preliminary factor analyses performed separately for men and women showed that crying spells and thinking one's life has been a failure are not good indicators of depression for men, and that feeling people dislike you and are unfriendly are not good indicators for either men or women. As a consequence we eliminated those four items. The final index contains 16 items: (1) feeling depressed; (2) bothered by things that do not usually bother you; (3) feeling fearful; (4) feeling lonely; (5) feeling sad; (6) feeling like you can't shake off the blues; (7) not feeling like eating; (8) having trouble concentrating; (9) feeling that everything is an effort; (10) having restless sleep; (11) talking less than usual; and (12) feeling that you cannot get going. Scored in reverse are the remaining four items: (13) enjoying life; (14) feeling hopeful; (15) feeling happy; and (16) feeling as good as others. The alpha reliability (unbiased estimate) of the index is .85 for women and .82 for men.

Perceived economic hardship is measured by a modified form of Pearlin et al.'s (1981) economic strain measure. Respondents were asked: "During the past 12 months how often did it happen that you did not have enough money to afford the kind of . . . (1) food you thought your household should have, (2) clothes you thought your household should have, and (3) medical care you thought your

household should have?" Responses were coded never (*0*), not very often (*1*), fairly often (*2*), very often (*3*). The three items were summed to produce a scale scored from low to high economic hardship. The alpha reliability (unbiased estimate) is .80 for wives and .82 for husbands.

Family income is recorded on a 7-point scale: less than $5,000 a year (coded *1*), $5,000 to $9,999 (*2*), $10,000 to $14,999 (*3*), $15,000 to $19,999 (*4*), $20,000 to $24,999 (*5*), $25,000 to $29,999 (*6*), $30,000 or more (*7*). The wife's earnings and the husband's earnings are coded in the same way, with the addition of a *0* code if the person is not employed and therefore has no personal earnings.

Education is measured as the number of years of formal education completed. Age is measured in years. The number of young children is measured as the number of children under age 12 living at home. Race, a control variable, is coded white (*1*) or nonwhite (*0*).

The bivariate correlations among the variables, and their means and standard deviations are shown in Table 1.[4]

Analysis

We developed a structural equation model with nonlinear effects (Stolzenberg, 1980). We made the following causal-order assumptions: Sociodemographic variables may affect family income, which in turn may affect perceived economic hardship, and, in turn, depression. Although it is possible that preexisting depression could color one's perceptions of economic hardship rather than economic hardship influencing depression, longitudinal analyses provide evidence for our causal-order assumptions. Pearlin et al. (1981) found that changes in family income between 1972 and 1976 affected changes in economic strain, and that changes in economic strain affected changes in depression. Using longitudinal data, Wheaton (1978) also found that socioeconomic status affects psychological distress, rather than vice versa. Because our data are cross-sectional they cannot be used to demonstrate the validity of our causal-order assumptions. However, the data could fail to substantiate our theory if, given our causal-order assumptions, we fail to find the hypothesized effects.

First we predicted an unrestricted model. Next we restricted the model by eliminating from each equation any variable whose significance level was greater than .10, using a 2-tailed test. No linear recursive effect was eliminated on a priori grounds. In addition to testing all linear effects, we allowed for the possibility of an interactive effect of education and family income on perceived economic hardship. This tests the possibility that the effect of income on perceived economic hardship is different at different levels of education.

RESULTS

The determinants of family income are the same for husbands and wives. Family income is a function of the husband's salary, the wife's

TABLE 1. Bivariate Correlations, Means, and Standard Deviations for Husbands in the Lower Triangle (N = 680) and Wives in the Upper Triangle (N = 680)

	1	2	3	4	5	6	7	8	mean	standard deviation
1. education		−.145	.164	−.024	.278	.397	−.201	−.107	12.738	2.315
2. age	−.199		−.031	−.372	−.038	.074	−.173	−.168	37.751	11.305
3. race (1 = white)	.127	−.011		−.088	−.065	.010	−.103	−.079	.912	.284
4. number of young children	.078	−.334	−.020		−.228	−.093	.186	.040	.798	1.065
5. earnings	.352	−.056	.143	.076		.339	−.076	−.042	1.077	1.232
6. family income	.405	.045	.120	−.040	.733		−.352	−.091	4.220	1.684
7. economic hardship	−.220	−.136	−.156	.124	−.228	−.344		.287	1.550	2.062
8. depression	−.107	−.081	−.045	.025	−.142	−.159	.283		20.239	15.738
mean	13.131	40.420	.915	.778	3.465	4.318	1.190	16.686		
standard deviation	2.889	12.305	.280	1.048	1.792	1.658	1.869	13.715		

).

For husbands, feelings of economic hardship are affected by a number of variables. Within the 18-to-65 age range, older men feel hardship less than younger men. Whites feel less economic hardship than nonwhites, and men with young children at home feel more hardship than those without young children. Higher family income and education decrease feelings of economic hardship.[5] In addition, there is an interaction between education and family income that can be interpreted in the following way: Low income produces less economic hardship for persons who are well educated than it does for persons who are poorly educated. Stated another way, each additional year of education increases the subjective value of a dollar.

For wives, the determinants of economic hardship are much the same as they were for husbands, except that race is not significantly related to perceived hardship. Age, number of young children, education, family income, and the interaction of education and income significantly affect perceived economic hardship. The interactive effect of education and income on economic hardship is larger for wives than for husbands. Low levels of education increase the detrimental effect of low income on economic hardship, especially for wives. This interaction effect is illustrated in Figure 1. Looking at the effect of low income (e.g., $\bar{X}$ − 1 SD, or 2.54) on economic hardship, it is clear that women with low levels of education feel the most hardship at this low income level (see Figure 1).[6]

The determinants of depression are quite different for husbands and wives. Two variables have direct effects on husbands' depression: perceived economic hardship and their own earnings. All other variables have their

TABLE 2. Restricted Regression Equations for the Husbands' Path Model in Figure 2

Independent Variables	Dependent Variable		
	Family Income		
	b	Seb	Beta
1. husband's age	.016***	.003	.121
2. husband's education	.084***	.015	.147
3. husband's earnings	.634***	.023	.685
4. wife's earnings	.366***	.032	.272
constant	−.041		
R^2	.649		
	Economic Hardship		
	b	Seb	Beta
1. husband's age	−.020***	.006	−.129
2. husband's race (1 = white)	−.407*	.244	−.061
3. number of children	.151**	.068	.085
4. husband's education	−.125***	.035	−.193
5. family income	−.398***	.068	−.353
6. education × income (4 × 5)	.008*	.004	.134
constant	5.116		
R^2	.161		
	Depression		
	b	Seb	Beta
1. husband's earnings	−.628*	.295	−.082
2. economic hardship	1.937***	.282	.264
constant	16.556		
R^2	.086		

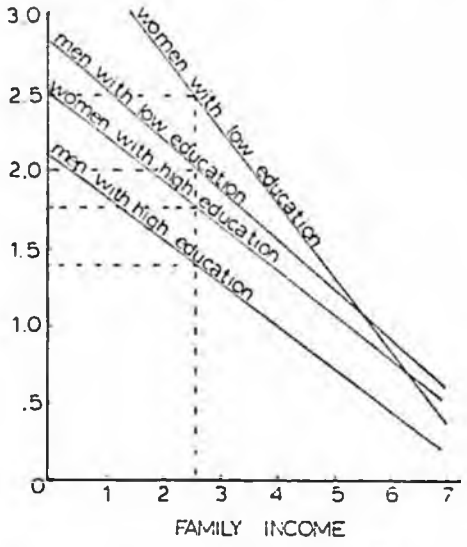
* $p < .05$, 1-tailed test.
** $p < .01$, 1-tailed test.
*** $p < .001$, 1-tailed test.

Wives' Path Model in Figure 3.

Independent Variables	Dependent Variables		
	Family Income		
	b	Seb	Beta
1. wife's age	.021***	.004	.144
2. wife's education	.129***	.021	.177
3. husband's earnings	.546***	.026	.581
4. wife's earnings	.393***	.038	.288
constant	−.512		
R^2	.541		
	Economic Hardship		
	b	Seb	Beta
1. wife's age	−.023***	.007	−.133
2. number of children	.206**	.075	.107
3. wife's education	−.275**	.084	−.288
4. family income	−.875***	.242	−.715
5. education × income (3 × 4)	.039*	.018	.532
constant	7.045		
R^2	.171		
	Depression		
	b	Seb	Beta
1. wife's age	−.216***	.055	−.161
2. wife's education	−.549*	.262	−.081
3. number of children	−1.020*	.597	−.069
4. economic hardship	1.954***	.298	.256
constant	33.184		
R^2	.106		

* $p < .05$, 1-tailed test.
** $p < .01$, 1-tailed test.
*** $p < .001$, 1-tailed test.

FIGURE 1. The Interactive Effect of Education and Family Income on Economic Hardship for Husbands and Wives (based on regression equations in Tables 2 and 3 and solved at the mean levels of all other variables).



Note: Women with high education = $\bar{x}$ + 1 SD = 15.053; women with low education = $\bar{x}$ − 1 SD = 10.423; men with high education = $\bar{x}$ + 1 SD = 16.020; men with low education = $\bar{x}$ − 1 SD = 10.242.

The dotted lines show the predicted level of economic hardship at low family income ($\bar{x}$ − 1 SD = 2.54) for men and women with high and low levels of education.

effects indirectly through family income and economic hardship.

For women, economic hardship also has a large effect on depression. However, economic factors—earnings, income, and financial difficulties—are not as overwhelmingly important for wives as they were for their husbands. For wives, education, age, and young children also have significant direct effects. Older wives, wives with more education, and wives with children are less depressed.

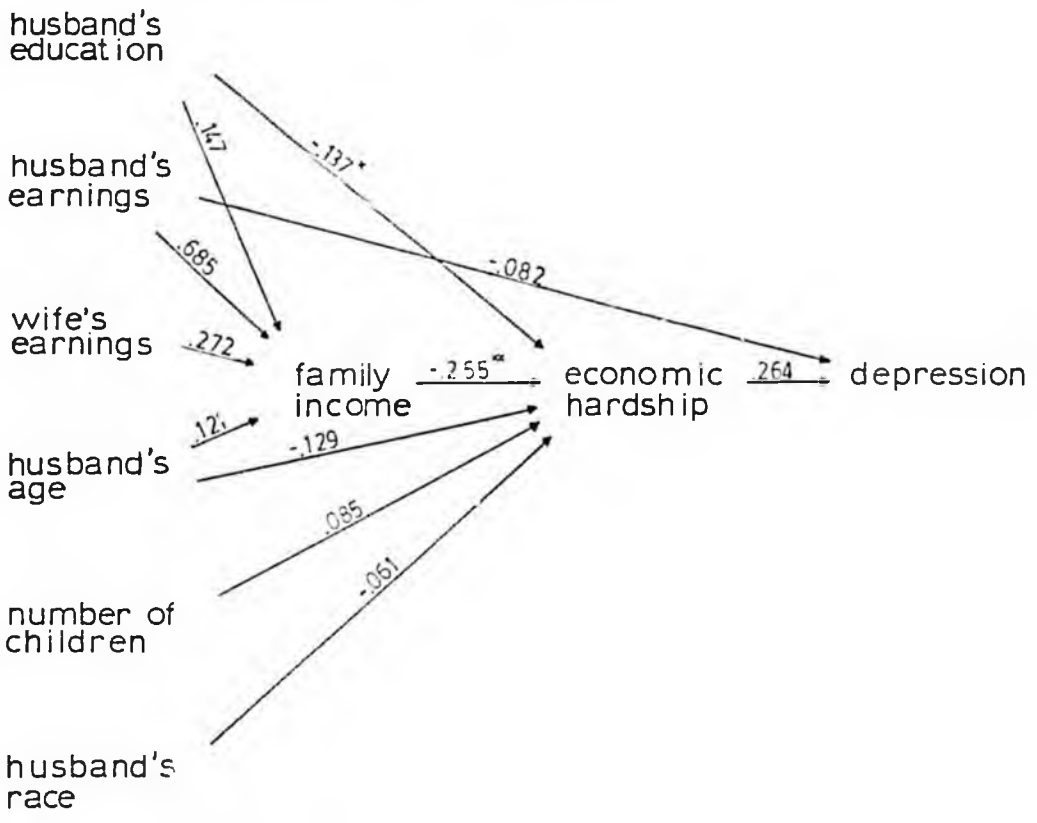
Stepping back from the specific predictions and looking at the husbands' and wives' models as wholes, a number of differences stand out (see Figures 2 and 3). Economic factors and their consequences largely determine the depression levels of married men. A man's education, age, earnings, and his wife's earnings affect his family income, and in turn, his perceived economic hardship. In addition, education, age, race, and number of young children affect economic hardship directly. Thus, holding objective economic conditions constant, men with more education, older men, white men, and men with fewer young children feel fewer economic difficulties. Perceived economic hardship, in turn, has a large effect on depression. The husband's personal earnings also affect depression apart from family income and economic hardship. Apparently a man's own earnings symbolize something more to him than simply the absence of financial difficulties. Increased earnings may increase self-esteem and feelings of power and control, which are beneficial to psychological well being, apart from purely monetary considerations. For a husband, personal earnings may improve psychological well-being because they indicate successful fulfillment of role obligations.

The determinants of wives' depression levels that act by way of perceived economic hardship are largely the same as they were for husbands. Age, education, her earnings, and her husband's earnings affect family income and, in turn, economic hardship. And, holding family income constant, younger wives, wives with less education, and wives with young children feel under greater financial pressure. Economic hardship has a large effect on wives' depression, just as it did for husbands.

For wives, however, personal earnings affect depression only in that they add to the family income and thus decrease perceived economic hardship. An employed woman's earnings do not decrease her own depression levels much more than they decrease her husband's. The total causal effect of a wife's earnings on her husband's depression equals (.272 × −.255 × .264) = −.018. The total causal effect of a wife's earnings on her own depression equals (.288 × −.304 × .256) = −.022 (see Table 4).

Education, age, and the presence of children, on the other hand, have direct effects on wives' depression levels. For men, education is relevant to depression only in that it increases potential earnings, whereas for women it is important in its own right. In addition, older women are less depressed than younger women, and women with children are less de-

FIGURE 2. Restricted Path Model of Husbands' Depression (standardized coefficients).



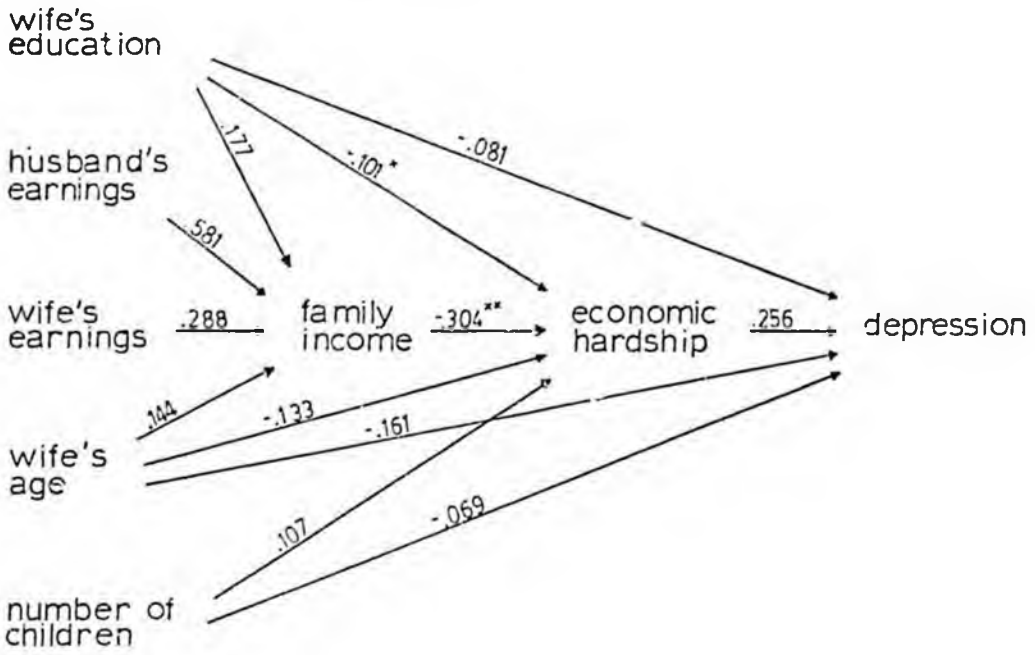
* This the multiple regression coefficient representing the effect of education on economic hardship at the mean level of income, multiplied by the ratio of the standard deviation of education to the standard deviation of economic hardship $(-.089\ (ed)\ \frac{2.889}{1.869} = -.137\ (ed))$.

** This is the multiple regression coefficient representing the effect of income on economic hardship at the mean level of education, multiplied by the ratio of the standard deviation of income to the standard deviation of economic hardship $(-.288\ (inc)\ \frac{1.658}{1.869} = -.255\ (inc))$.

pressed than those without.[7] Interestingly, the presence of young children has both positive and negative effects on a wife's well-being. Young children at home increase perceived economic hardship, thus increasing depression (.107 × .256 = .027). However, holding economic hardship constant the presence of young children decreases a wife's depression (−.069). This appears to be empirical support for the common knowledge that children bring both joys and difficulties. For wives, children may indicate successful fulfillment of role obligations.

Table 4 summarizes the direct, indirect, and total causal effects of socioeconomic status variables on depression for husbands and wives. It shows that most of the effect of socioeconomic status on depression is indirect—mediated by economic hardship. The two notable exceptions are the direct effect of a husband's earnings on his depression, and the direct effect of a wife's education on hers.

FIGURE 3. Restricted Path Model of Wives' Depression (standardized coefficients).



* This the multiple regression coefficient representing the effect of education on economic hardship at the mean level of income, multiplied by the ratio of the standard deviation of education to the standard deviation of economic hardship ($-.09$ (ed) $\frac{2.315}{2.062} = -.101$ (ed)).

** This is the multiple regression coefficient representing the effect of income on economic hardship at the mean level of education, multiplied by the ratio of the standard deviation of income to the standard deviation of economic hardship ($-.371$ (inc) $\frac{1.684}{2.062} = -.304$ (inc)).

DISCUSSION

Successful fulfillment of male and female role obligations in the household affects psychological well-being. Ongoing economic hardship—the inability to adequately feed, clothe, and provide medical care for the family—is a recognition of unsuccessful fulfillment of both breadwinner and homemaker obligations. We find that economic hardship has a large effect on both spouses' depression levels. Other factors affect husbands and wives differently. A husband's personal earnings have a direct effect on his depression, because, we argue, his earnings indicate successful fulfillment of his provider obligations. A wife's major role obligation, on the other hand, is not breadwinner, but homemaker. We find that a wife's personal earnings do not affect her depression levels, whereas her education and children do.

It is in the household that the larger social and economic order impinges on individuals, exposing them to varying degrees of difficulty in meeting obligations. The ability to fulfill household duties is influenced by differences in the demands and resources of various socioeconomic positions. Although the finding that socioeconomic status is inversely related to depression and other forms of psychological distress is well documented, answers to the questions of *which* aspect of socioeconomic

TABLE 4. Direct, Indirect, and Total Causal Effects of Socioeconomic Status Variables on Depression for Husbands and Wives[a]

	Direct	Indirect	Total Causal
Husbands			
family income	—	−.067	−.067
husband's education	—	−.046	−.046
husband's earnings	−.082	−.046	−.128
wife's earnings	—	−.018	−.018
Wives			
family income	—	−.078	−.078
wife's education	−.081	−.040	−.121
wife's earnings	—	−.022	−.022
husband's earnings	—	−.045	−.045

[a] See Figures 2 and 3 for path models. These are standardized coefficients. Note that all indirect effects of SES on depression are mediated by economic hardship.

status affects psychological well-being, and *why* socioeconomic status affects psychological well-being are less firmly established. To date, only Kessler (1982) has systematically examined *which* aspect of socioeconomic status is the important determinant of psychological well-being for men and women; and only Pearlin and his colleagues (1981) have focused on chronic economic hardship as the explanation of *why* socioeconomic status is associated with psychological well-being. We have synthesized these two approaches: (1) we examined three aspects of socioeconomic status—education, family income, and personal earnings—and (2) we addressed the issue of why a person's position in the social structure affects depression by focusing on the chronic stress of not having enough money to adequately feed, clothe, and acquire medical care for one's family. As Pearlin et al. (1981) note, chronic stress has received little attention in the research on socioeconomic status and psychological well-being.

Our findings indicate that chronic economic difficulties are extremely important factors in depression for both men and women. Furthermore, we find that while objective measures of family income have a large impact on perceived economic hardship, the perceptions are not a one-to-one reflection of income. Other factors—age, education, and number of children— also play a role. Married persons who are younger, poorly educated, or have many young children feel more financial difficulties than their counterparts who are older, well-educated, or have fewer young children, even at the same income levels.

The role of education in perceived economic hardship is more complex: Education interacts with income in its effect on perceived economic hardship, especially for women. Because ours is the first study to find that education and income have an interactive effect on perceived economic hardship, the finding should be considered tentative until replicated. Given this caution, we interpret the result as follows. Poverty and lack of education have a synergistic effect on economic hardship, each making the effect of the other worse. A person who is poorly educated needs more money to fend off economic hardship than does a person who is well-educated. Each year of education increases the subjective value of a dollar. Education may provide knowledge and information on how to budget household expenses, where to get the best buy for one's money, when paying less is a good strategy and when it simply buys an inferior product, what foods are cheap but nutritious, how to keep the children healthy, and when a visit to the doctor is necessary and when it is not. People who are well educated also tend to have friends who are well educated and are thus better able to help them out with information and support. The interaction of education and family income may be stronger for wives than for their husbands because it is usually the woman's job to see to the daily operation of the home, including shopping for food and clothes, and caring for the children's health.

Kessler (1982:761) concluded that, as an explanation for depression, the "focus on economic strain is inappropriate," and that more than a simple economic reality is involved in psychological well-being. We disagree with the first statement. Both our findings and those of Pearlin and his colleagues (1981) indicate that economic hardship plays an important role in depression. However, we agree with the second statement—more than a simple economic reality *is* involved. For men, personal earnings affect depression, apart from their impact on economic hardship. Family income, including money that a man's wife earns and money from

other sources such as interest, dividends, property sale, public assistance, or social security, affects a man's depression *only* by way of decreasing perceived economic hardship. His own earnings, however, have an independent affect on his depression levels. In the United States, a husband who earns a lot of money is a man who has successfully met his obligation as household provider; who is respected and admired by others; and who can afford the material symbols of success. Furthermore his earnings may increase his self-esteem and feelings of control. A husband's personal earnings indicate his success at fulfilling his role obligations, and thus affect his psychological well-being independently of economic hardship.

For a husband, the bottom line in socioeconomic status and psychological well-being appears to be money and what it symbolizes to himself and others. For a wife, economic factors are only part of the story. Whereas a man's education is important to his psychological well-being only in that it increases his income and decreases perceived economic hardship, a woman's education plays an independent role in her psychological well-being. Furthermore education affects the depression levels of both employed married women and homemakers. Even employed married women, because their primary role is not provider, may be less dependent on high paying jobs for identity and self-esteem than are married men. Instead, education appears to be the most important component of SES to women's psychological well-being, possibly because education helps a wife successfully meet her responsibilities in the home.

Whereas a husband's earnings have an independent effect on his depression, a wife's earnings only affect her depression by way of adding to the family income and thus decreasing perceived economic hardship. In fact, a wife's earnings have about the same effect on her husband's depression as they do on her own. A wife's earnings have a small beneficial effect on both spouses' psychological well-being because they increase the family income and thus decrease economic hardship.

The number of young children at home increases depression levels of both spouses by increasing their economic hardship. However, for women, children also decrease depression levels directly. Thus, for wives, having young children has both positive and negative effects on psychological well-being. Gove and his colleagues suggested that the presence of young children would increase a wife's psychological distress by isolating her from adult social support and confronting her with incessant demands (Gove and Tudor, 1973; Gove and Geerken, 1977). However, some studies have found children to be insignificantly related to a woman's psychological well-being. An apparent near-zero association can result if positive and negative effects cancel each other out. In these data young children increase wives' depression by way of increasing economic hardship, but also decrease wives' depression directly. Thus young children may increase demands and burdens but also be a source of gratification to wives in that they indicate successful fulfillment of role obligations. Since ours is the first study to examine the effect of children on depression independent of economic hardship, these results and interpretations should be viewed cautiously, especially since the direct negative effect of children on wives' depression levels is significant only at $p < .05$ with a 1-tailed test. We hope these results will be replicated.

Role expectations for husbands and wives have been slow to change in response to other household transitions. Over the course of the twentieth century, household patterns in the United States have undergone many changes, largely due to increases in women's participation in the labor force. Marriages are shifting from the *complementary* type, in which the husband is employed and the wife stays home and cares for the household and children, to the *parallel* type, in which both spouses are employed and both care for the household and children. However, the shift from one type of household-and-work pattern to another is still incomplete. In 1978, 56% of married women in the sample were employed full- or part-time. However, the household division of labor has been slow to catch up: Even when the wife is employed, only 20% of the husbands share the housework and childcare equally with their wives. Eighty percent of employed wives still have primary responsibility for the home; 93% of nonemployed wives bear primary responsi-

bility for the home. Since husbands of employed wives are more likely to share the housework and childcare, the trend toward shared participation in the home is likely to increase as women's participation in the labor force increases. Last to change are role expectations. Even if a wife is employed, she is likely to think of her employment as supplementary to her husband's. Many women work outside the home in order to help maintain or improve the family's accustomed standard of living, but they do not see themselves as the primary providers. As more wives work outside the home, more (although not many) husbands help with the housework and childcare, but husbands do not see themselves as the primary homemaker. Role expectations still largely follow traditional ideas of what a husband and wife are supposed to do. It is the husband's duty to try his best to support the family, even if he needs financial help from his wife. It is not the wife's duty to provide for her family, and few respondents consider a woman a "bad" wife because she does not work outside the home.[8] We expect that as more married women are employed and as more husbands share the housework and childcare, role expectations for husbands and wives will change, too. Possibly, in future households, husbands and wives will both be expected to be providers and homemakers; and as husbands and wives' role obligations converge, so will the determinants of their psychological well-being.

NOTES

1. The presence of an early economic squeeze does not deny the facts that there may be later life cycle squeezes when the children are older, or that the vulnerability to economic squeezes varies by occupation. (Oppenheimer, 1974; Estes and Wilensky, 1978).
2. One advantage of interviewing couples by phone is that, even if the other spouse is in the room, he or she is not aware of the spouse's answers to specific questions, but hears only cryptic answers (e.g., "agree," "yes," "four") without hearing the questions.
3. Respondents whose spouses refused to be interviewed did not differ significantly in terms of age or education from respondents whose spouses were interviewed.
4. For each variable we also examined the correlation between husbands and wives. Both husbands and wives were asked to report family income and number of children, so that the correlation may be used as an indicator of reliability. The correlation between husbands' and wives' reports of family income is .81. The correlation between reports of number of children is .97. The correlations also show the sociodemographic similarity between spouses. Husbands' and wives' level of education correlate .60; race, .81; and ages, .93. Husbands' and wives' earnings are not correlated, however ($r = .01$). Perceptions of economic hardship correlate .48, and Table 1 shows that wives perceive more economic hardship than husbands. The depression levels of husbands and wives are positively but weakly correlated ($r = .14$).
5. The unadjusted association between family income and economic hardship illustrates the strength of the association most graphically. For husbands and wives combined, the approximate average family income for persons who feel economic hardship very often is $13,000; fairly often, $15,000; not very often, $19,000; and never, $24,000.
6. When two variables are positively correlated, an apparent interaction between them may actually be due to a nonlinear effect of one of the variables. Thus, the significant interaction of education × income may actually be education × education (education^2) or income^2 (Southwood, 1978). In order to test for these nonlinearities in both the husbands' and wives' models, we replaced the interaction term, first with the quadratic term for income, and then with the quadratic term for education. The squared term did not have a significant t-test associated with it nor did it add significantly to the R^2 in either case.
7. We also examined the determinants of depression separately for wives who are employed and those who are not. Education is more important than earnings, even for employed wives. And children decrease depression for employed and nonemployed wives.
8. In response to the question, "should an able-bodied woman be expected to work if she is married and has no children," 71% of the respondents in the sample answered "no." When the hypothetical wife had young children, 88% felt she should not be expected to work.

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Cominco Alaska

The Honorable H. A. "Red" Boucher
Alaska State Legislature
House of Representatives
P.O. Box V
Juneau, Alaska 99811

February 11, 1986

RE: SSHB 466, Alaska Resident Employment Preferences

Dear Representative Boucher:

Cominco Alaska is pleased to submit a summary of a report entitled "Potential Socio-Economic Impacts of the Polaris Mine Project". The purpose of the study was to examine the socio-economic impacts of the Polaris Mine on the Arctic coastal communities within Cominco's planned hiring area. If you desire a complete copy of this report contact:

Marion LaVigne
Outcrop Ltd.
Yellowknife, N.W.T.
403-873-6152

Ms. LaVigne also may be able to provide you with additional studies done on the socio-economic effects of unemployment in northern regions.

If there is additional information we may provide you, please contact our office.

Sincerely yours,

Lisa M. Parker

LMP:jae

Enclosure

Draft

Potential Socio-Economic Impacts of the Polaris Mine Project

An examination of the potential impacts on the community of Resolute Bay, the Arctic Coastal Communities, and the N.W.T. in general.

Prepared by:

Outcrop Ltd., Yellowknife, N.W.T.

in association with

DPA Consulting Limited, Vancouver

June, 1980


ELLESMERE ISLAND
Eureka
Polaris Mine
Grise Fiord
QUEEN ELIZABETH ISLANDS
PRINCE PATRICK ISLAND
BATHURST IS
MELVILLE IS
DEVON ISLAND
Resolute
BANKS ISLAND
Sachs Harbour
PRINCE OF WALES ISLAND
Arctic Bay
Pond Inlet
Clyde River
Nanisivik
BAFFIN ISLAND
Broughton Island
Cape Dyer
Kangerlussuaq
Iqaluit
Hall Beach
Old Crow
Aklavik
Inuvik
Tuktoyaktuk
AMUNDSEN GULF
Fort McPherson
VICTORIA ISLAND
Holman
Cambridge Bay
Spence Bay
Gjoa Haven
Pelly Bay
Arctic Circle
YUKON
Fort Good Hope
Coppermine
Repulse Bay
Frobisher Bay
Lake Harbour
Cape Dorset
Dawson
Norman Wells
Fort Franklin
GREAT BEAR LAKE
Fort Norman
Mayo
CONTWOYTO LAKE
Coral Harbour
SOUTHAMPTON ISLAND
Baker Lake
Wrigley
Whitehorse
Rankin Inlet
Chesterfield Inlet
Fort Simpson
Edzo
Rae
YELLOWKNIFE
HUDSON BAY
QUEBEC
Nahanni Butte
Fort Providence
Whale Cove
GREAT SLAVE LAKE
Fort Liard
Fort Resolution
Eskimo Point
Hay River
Pine Point
BRITISH COLUMBIA
Fort Smith
Sanikiluaq
Belcher Islands
ALBERTA
SASKATCHEWAN
MANITOBA

Summary

The Polaris Mine will be recruiting staff from a number of isolated, semi-traditional Inuit communities in the high and coastal Arctic. The potential employees speak Inuktitut, have some acquaintance with the wage economy, and little or no experience with mining.

The apparent economy of many of these communities is dependent on hunting and trapping. In fact, because other costs are increasing more rapidly than fur prices, these communities are increasingly dependent on cash from wage employment or government programs to finance traditional pursuits.

While educational levels are not high, the influence of "southern" schooling over the past 20 to 25 years has created some understanding and acceptance of "southern" values, and increasingly, wage employment is proposed by community residents as a solution to a growing number of young people educated in the "southern" methods, who are no longer willing or capable of practicing traditional activities.

The "solution" of wage employment is not easy to put into practice, as a number of government and industry experiments will testify. Further the communities, established some two to three decades ago as trading centres and government administrative areas, are not as a general rule located in prime industrial growth areas. When mines and other large wage employment projects develop they are close to communities only by chance.

Inuit make up a third of the population of the N.W.T. Contrary to some southern conceptions of Inuit lifestyles they are no longer living in a traditional manner. Inuit of 1980, are educated, relatively sophisticated in their tastes for North American consumer goods, politically astute, and willing and determined to take full responsibility for the direction of their own lives, and the protection of their culture.

The evidence is documented in a number of recent political papers including the Nunavut and COPE claims, and the debates of the N.W.T. Legislative Assembly.

Change over the past 25 to 30 years has become a way of life for the Inuit. Taken from their families in the early days for education, then settled in communities, introduced to western style government, and finally wage employment, in a mere 25 years, the Inuit are remarkable in their capacity to adapt, and to consider carefully and seize hold of foreign concepts to further their own cultural traditions.

Communications technology, upgrading of airports, increased air traffic and regular flights, radio programming, and the introduction of North American television have provided ready access to hundreds of new situations and new opportunities.

Both the government, and the Inuit as a people are concerned about the problems they face with an improved level of education and a high birth rate. With more than half the population under 18, the decisions which must be made to accommodate this group of young people in the N.W.T. economy are discussed regularly.

As development projects are proposed, the merits and disadvantages are widely debated. Cultural change is both feared and welcomed, but appears to be inevitable, given the state of communication technology in the N.W.T. Slowly the debate is switching from whether or not change should come, to how change can best be managed for the benefit of residents.

Development projects inevitably lead to questions about the merits of different employment systems. Should the Inuit move from communities to jobs or should townsites be developed at project sites for the Inuit? What are the social and economic consequences of either course? These and other concerns are addressed in this study.

Introduction

The purpose of this study is to examine the socio-economic impacts of the Polaris Mine on the community of Resolute and on the Arctic coastal communities within Cominco's planned hiring area. The intention is also to provide an overview of the impacts of the mine on the N.W.T. economy.

The study was conducted during a four month period from late January to late May, 1980. The field work, which involved visits to most of the communities, was completed in March and early April. Interviews were held with community councils, government officials, business owners/operators and individual residents.

The main emphasis of the report is on the potential impacts on the community of Resolute, which is the closest community to the mine, and the community most likely to experience impacts of the Polaris Mine. Impacts on Arctic coastal communities are discussed in lesser detail and the impacts on the N.W.T. economy are presented as an overview of the potential Polaris impacts compared with a benchmark "without the mine" scenario.

Project Overview

The Polaris Mine facilities will occupy 230 acres of Little Cornwallis Island, along the Crozier Strait, 60 miles northwest of Resolute Bay. The lead zinc mine will go into operation in early 1982 and when it reaches full operation in 1984, it will process 2,050 tonnes of ore per day. Surface facilities will consist of a concentrator, storage building, accommodation facilities as well as conveyors, fuel and water tanks and fresh water and tailings pipelines.

Accommodation will be provided for 240 in 208 single rooms and 16 two-room suites. Complete kitchen, dining and recreation facilities will be included in the accommodations complex. There will be telephone, CBC television and CBC-North radio services at the site. No townsite on Little Cornwallis Island is planned.

Ore will be transported to markets during the August 15 to October 15 shipping season and at the same time 4-5000 tons of supplies will be shipped to the mine each year. An additional 200 tons of supplies each year will be shipped by air via Resolute.

Employees will be move via commercial carriers from hiring centres in Montreal, Edmonton, Yellowknife, Cambridge Bay and Coppermine. Air charter shuttle flights three times weekly will move staff to the mine. Airfare will be paid by Cominco to and from these hiring centres. Individuals will be responsible for paying their own air fares between home communities and the hiring centres.

Peak construction employment will be in 1981. The total number of on site man hours is estimated at 850,000. Northerners could fill 30 to 40 percent of the Polaris Mine construction staffing requirements.

During operations, employees will follow one of two work rotation schedules. The southern rotation schedule will involve 12 weeks on the site and three weeks paid leave. The northern rotation schedule consists of six weeks on site plus four weeks leave, partially paid and pro rated to southern leave. The northern rotation schedule is proposed for the Inuit to allow them to earn a good wage, yet be able to pursue their own lifestyle to some extent.

There will be 205 Polaris Mine positions. This does not include 20 catering positions. For the Polaris Mine to run efficiently and meet its production targets, 163 of these 205 positions are classified as essential positions. Included in the 163 essential positions are 25 positions that will be filled by senior management personnel and administrative staff. There will also be one position in Resolute for a recruiter/expediter. The remaining 137 mine positions will be filled by rotational employees either from the North or the South. For each position filled by a southern hire a multiplier of 1.68 is used to determine the number of employees required to fill the position on a year round basis, considering "leave" time. For each position filled by a northern hire, the multiplier used is 1.84.

To provide employment for the Inuit and other N.W.T. residents, Cominco plans to recruit extensively in the North for people to fill training positions. Cominco plans to hire the majority of its northern rotational staff from the Arctic coastal communities and from Resolute.

All training programs will be particularly aimed at developing and integrating the northern employee. All supervisors will be given instruction in cross-cultural differences. Cominco has established 73 pre production training positions and will provide a total of 236 training months to employees, prior to the start of mining operations.

Once the mine is fully operational in 1985, the potential number of northern employees at the site, in Resolute and in Yellowknife could range from 74 to 102. The higher number assumes that travel costs to and from all Arctic coastal communities would be paid.

All northern employees as a percentage of the total Polaris staff could range from 29 percent to 40 percent in 1985.

About $2 million or 16 percent of the mine's operating supplies of $12.3 million could be purchased from northern suppliers. The small size of these northern purchases reflects the Territories lack of a manufacturing base and the project's distance from the Territories larger centres, especially Yellowknife.

Impacts on the Northwest Territories Economy

The last decade and a half has been a period of dramatic change for the Northwest Territories economy. Much of the growth occurred in the period from 1967 to the mid 1970s. The population of the territories from 1967 to 1974 increased from 30,124 to 40,802, representing an average annual growth rate of 4.4 percent, while real growth in gross territorial product was well over 10 percent per year.

These figures give only a partial picture of the structural changes which occurred over the period. From 1967 to 1974 the value of mineral production increased five times; investment expenditures more than tripled and totally new activities especially oil and gas exploration, were introduced to the N.W.T. economy.

Over this period a growing number of Northerners became members of, and dependent upon, the Northwest Territories wage economy.

While the data for more recent years is incomplete, it appears that the rate of economic growth has moderated and that the 1974-79 period has been one of consolidation for the Northwest Territories economy.

The Polaris Mine will have a positive impact on the N.W.T. economy, but the relative impact will be quite small, reflecting the high spending leakages out of the N.W.T. economy to southern Canada. These leakages are the result of the Territories lack of an industrial base.

The employment and income effects are generally greater in the construction phase particularly in 1981, than after start up. This is typically the situation for a highly capital intensive resource project.

The Polaris Mine will have a favourable, but minor effect on the N.W.T.'s high and increasing unemployment rate. This reflects the relatively small size of the project in relation to the Territories high unemployment at the present time, and the fairly substantial increases anticipated in the size of the N.W.T. labour force during the projected life of the mine.

In 1981, during the peak construction period, there will be about 159 jobs for Northerners as a result of the Polaris Mine. Personal income from these jobs will be approximately $4.2 million. This represents a percentage increase in personal income of about 1.3 percent.

When the mine is fully operational in 1986, approximately 128 Northerners will have jobs as a result of the mine. Of this number, 74 will be Polaris Mine employees. Thirty-one indirect jobs will result from Polaris purchases of suplies and services, and 23 jobs will result from the respending effects in the Northwest Territories.

Comparing these employment statistics with a projected "surprise free" future in the N.W.T. (i.e. no major projects going ahead) they represent a 5.3 percent increase in the number of Northerners employed in mining, and a 1.3 percent increase in the number employed in the residentiary sector (i.e. services industries) in 1986.

In real 1979 dollars, total personal income to Northerners will increase by approximately $2.9 million in 1986 as a result of the Polaris Mine.

Close to one half the jobs, and more than one half the personal income benefits will be in Yellowknife. The location of the operating/administrative office in Yellowknife and increased respending effects resulting from Yellowknife's more developed economy, account for the higher employment and income benefits in Yellowknife.

If travel payments to and from the mine site were extended to employees from other Arctic coast communities (in addition to Coppermine and Cambridge Bay) total Polaris related employment in 1986 could increase from 128 to 162. This represents an additional 28 direct jobs and 7 jobs as a result of respending. In real 1979 dollars, the personal income from these 162 jobs would be about 3.5 million.

Although the economic impacts of the Polaris Mine are relatively small, at the same time it can be argued that the economic effects of the mine are quite manageable and that the economic dislocations caused by the Polaris Mine should be negligible.

Impacts of the Polaris Mine on Resolute

Resolute, the closest community to the Polaris Mine, is 60 miles southeast of the mine. Founded in 1947, Resolute experienced gradual expansion until a boom period in the early 70s when seismic work and exploration activity in the high Arctic increased the size and economic importance of Resolute.

In the latter half of the 1970s this activity declined and by March, 1980 the total population of both the base and village areas of Resolute was less than 300. The Inuit population in March 1980 was 131, down from 169 in 1976. Of the Inuit population, 20 have full time jobs, although there is a total of some 135 jobs in Resolute. Most jobs are filled by southern Canadians working in Resolute on a rotational or short term basis.

Resolute, as a result of a government plan, now abandoned, has elaborate municipal services for its size. Water and sewer services are designed to handle a much larger population. In March, 1980 there were some 20 empty houses in Resolute, approximately half reserved for residents and half for territorial government staff. There is also a number of serviced lots available.

The Inuit population of Resolute has had contact with wage employment for some 25 years. Overall, residents are pleased with their modern community, and relations with the nearby base are cordial.

Hunting and trapping activities continue in Resolute, but are no longer the sole source of income. Usually they supplement wage income, or are seasonal activities, with participants working at part time jobs when the season is over, or when jobs are available. Since the mine is in a low priority hunting area, its location is not expected to effect hunting and trapping activities. Actual employment at the mine could have some effect, but the extent will depend on whether employees use their time off to hunt and trap. Most residents felt that four weeks off was adequate time for hunting and trapping.

It is estimated that some seven to 11 residents will have permanent jobs at the Polaris Mine in 1985. Based on an estimate of the amount of money to be spent by Polaris in the community,

a further eight jobs will be created, with five of the eight likely to be filled by Resolute residents. In addition, respending of wages will create three more jobs for a minimum of 15 new jobs for community residents.

Part time, or seasonal work created by the mine (e.g. ship loading, unloading) will likely exceed the capacity of the Resolute labour force, until 1985. This could cause peak period staffing difficulties for local businesses, and may also cause in-migration to fill expected jobs.

Overall, an increase of approximately 40 to 50 people, or 10 to 12 families is expected as a result of employment caused by the mine.

Comparing current community wage income and projected income from direct, indirect and induced employment, the Polaris Mine could cause a 102 percent increase in wage income in Resolute from 1980-1985 and a 64 percent increase in the total community income.

So that the community obtains the maximum benefit from the mine and related activity, the study team recommends that priority be given to Resolute residents who are prepared to fill available jobs.

While wage income will increase dramatically, the impact of the mine on the Resolute economy is not nearly as large, since much of the money pumped in by wage earners goes elsewhere to purchase goods for resale. There will be some strengthening of the local economy, due to greater use of existing capacity in the accommodation and airline businesses, if Cominco purchases services locally. Some new business opportunities may arise, and both the government and the Inuit Development Corporation should be prepared to assist these ventures.

If the population increases as expected, there will be a need for an additional classroom for the school, and possibly some additional housing. In the meantime, excess territorial staff housing could be made available to the community to temporarily alleviate any housing shortages.

Cominco should be prepared to hire a resident to provide ongoing liaison with the community on a number of subjects, including the provision of counselling services, the recruitment of staff for the Mine, and to monitor the effects of mine employment on the community generally.

Considering Cominco's work rotation and travel policies, families from other N.W.T. communities may decide to move to Resolute to be close to jobs If this becomes the case and housing shortages occur, there are two interrelated solutions; the government can discourage in-migration by advising other communities there is no housing, and the provision of convenient and paid travel to and from the job site, combined with work rotation adjustments if needed, would encourage people to stay in home communities.

Extensive interviews with residents of Resolute revealed a high respect for money, softened by more traditional values relating to a satisfactory life today, and concern for the well being of the family.

Prosperity — a new truck or skidoo — is respected, in both the traditional culture (where it implies an improved ability to gather food) and in the modern lifestyle.

Elders, leaders and people with particular skills, traditional or modern, are respected in the community. Polaris employment will create new skills in the community, and may tend to reinforce a trend toward division between the "rich" and the "poor".

From the point of view of community services and job opportunities, the relatively sophisticated population of Resolute is likely to consider the mine and associated employment to be an improvement over the present situation. Residents are aware that the level of community services depends on the total population and although they do not want rapid growth, they are also concerned about the current declining population.

Wage income would likely be spent on food and better equipment for traditional hunting, trapping and fishing, as is presently the case.

Although money is held in high regard, the traditional Inuit values have not been superceded by southern values. The family and traditional activities are of great importance to residents. People still move regularly to be close to fa and friends. Families still move out onto the land in hunting season.

This close knit family grouping may be affected by mine rotational employment. The residents interviewed suggested long absences of the father may create problems in the family. They also suggested that the six week work period may conflict with traditional hunting seasons, particularly in the spring.

However residents appear willing to try the planned 6 weeks on the job, 4 weeks off rotation proposed by C- inco. They suggested that modifications might be made to rotations in spring hunting season.

The study team concluded that the work rotation system should be implemented as planned, but that the effects on employees' families be monitored closely.

The company should be prepared to make changes to its rotational schedule, if negative effects on family life become evident.

Mine employment may also cause a short term impact on the leadership of the community; however, increasing numbers of women will take on both jobs and leadership roles. A related impact may be a requirement for a day care centre.

Nothing in Resolute itself, or in the reports from other projects using rotational systems of this type would lead to the conclusion that there will be a dramatic increase in alcohol consumption, or in crime as a result of mine employment. The company should be prepared to work with the community agencies to resolve any incidents or problems that may occur.

The company has indicated its intention of providing orientation programs for southern staff. These programs should extend beyond the work environment, to ensure southern workers are sensitive to the Inuit community environment. In discussions with residents, a number of suggestions were made as to how this might be accomplished. These types of suggestions should be considered in planning the overall working atmosphere, and where possible encouraged.

Job satisfaction is defined by Resolute residents as having a job you like, earning good money, and having variety and opportunity to learn. There appears to be some preference for the

"better than menial" jobs, although some people are not happy with a management role when decisions inevitably affect family and close friends.

To meet these job aspirations, upgrading and training will be required. If Cominco conducts a strong and sustained campaign to upgrade Inuit employees so that they can obtain "better than menial" jobs, the team concludes that the other indicators of job satisfaction wil be met by Polaris positions.

Although concerned about the separation of families during work periods at the mine, Resolute residents are not convinced a townsite at the mine is the answer. Although it was considered as an immediate solution to the problem, Resolute residents also recognized that a townsite would likely cause a further decline in the size and services in Resolute, and could have an effect on hunting and trapping harvests in their area.

Impacts of the Polaris Mine on Arctic Coastal Communities

Residents from Arctic coastal communities (Cambridge Bay, Coppermine, Holman Island, Gjoa Haven, Spence Bay and Pelly Bay) could hold from 38 to 66 Polaris Mine positions in 1985. The high estimate would apply only if travel was paid for residents in communities other than Cambridge Bay and Coppermine. This would represent a maximum of 12 percent of the total labour force in these six communities.

Polaris employment will have a moderating effect on the current and projected high unemployment rates, but at no time will the number of jobs exceed the labour supply in the Arctic coastal communities.

In total, from 47 to 81 jobs could be created for residents of these communities including jobs created as a result of respending effects of Polaris Mine employees.

Income from these jobs in 1985, in real 1979 dollars, could be as high as $1.5 million. In Cambridge Bay the addition of job opportunities is likely to have a positive effect, since the community depends on wage employment.

Pelly Bay would feel the greatest impact of mine employment with a potential 16 percent of the labour force working at the mine in 1985, depending on transportation policies. Because Pelly Bay has so few jobs now, and so few job prospects, the mine opportunities are considered a positive impact. Similar positive impacts will also result in the other communities, since unemployment is high in all communities surveyed, but particularly in Gjoa Haven, Spence Bay and Pelly Bay.

Although mine wages will be higher than those for community jobs, residents are not concerned that key community workers will be lured by mine employment. Community contacts indicated that lower paying jobs in the community would be more attractive because of the traditional Inuit regard for the family. This leads to the conclusion that Polaris jobs will attract young people who do not have full time jobs and are generally not full time trappers.

There could be a reduction in the amount of income generated by hunting and trapping; however, the impact is considered to be relatively minor. The study team concluded that if all

potential mine employees were trappers, this would only represent about 15 percent of the Arctic coastal community trappers. Residents generally feel that the rotation allows sufficient time for trapping during the period of 4 weeks at home.

There is concern in the communities that there will not be enough jobs for people, which indicates a high interest in mine employment.

As in Resolute, the major social impact of mine employment is expected to be the separation of families. There is concern in the communities about handling family problems when the man is away from home. The study team recommends that the company hire a part time recruiter/counsellor to facilitate hiring and the flow of accurate information in each community where Polaris employment is seriously considered.

Major movements of people from a more remote community to a hiring centre such as Cambridge Bay can be avoided by the application of appropriate hiring and transportation policies. Aside from a modest increase in the use of existing airline and accommodation capacity, no major effects are foreseen in the economy of the area apart from employment effects. A need is seen for a northbound connection between Cambridge Bay and Resolute to expedite the transfer of mine-bound employees.

The possibility of a mine townsite was discussed in each community. While people felt a townsite at the mine would lessen the strain on families, they appeared reluctant to move to the site for long periods, preferring their home areas.

A positive impact on educational and job aspirations in coastal communities is foreseen as a result of mine employment. Educational levels are presently quite low in these communities. To obtain training and better job opportunities, residents must leave the community for a larger centre. The mine will provide training opportunities while preserving the home community base.

Cambridge Bay has a severe alcohol problem and a high incidence of crime. Of all the communities reviewed, Cambridge Bay may suffer the greatest increase in these problems as a result of the separation of stable family units, and the movement of transients through the community. The study team recommends strongly that the community and the government agencies work together to examine the causes of the problems in Cambridge Bay. The company should be prepared to assist these efforts where possible, and make adjustments to hiring and travel plans if it appears current plans are likely to increase these problems.

Sensitivities

In order to effectively assess the data collected, a number of options or alternative cases were considered by the study team. Some were considered at commencement of the study, others were conducted to test conclusions reached.

1. Baffin and Keewatin were considered as additional sources of manpower. If transportation policies were amended the number of Northerners employed successfully by Polaris could increase by 35 percent. Costs of employment may also rise.

2. A shorter rotation schedule was considered for Resolute. This could be expected to increase Resolute hires by 4 to 6 people.

3. If a shorter rotation was applied to other communities, there would likely be a substantial gain in numbers of northern employees and in income for the N.W.T.

4. Paid transportation from all N.W.T. communities increases the number and likelihood of success of northern employees, since it is unlikely that potential employees would want to spend much of their earnings getting to and from one of three hiring centres.

5. A townsite at the mine was considered. While the townsite might lessen the impact on families, the cost, the social problems involved in establishing a new Arctic community, and the anticipated desertion of established communities, particularly Resolute, indicate a townsite should not be considered at this time.

6. If other major projects (Arctic Pilot, Polar Gas Project) were to go ahead at the same time, there may well be a scramble for the available labour force and particularly those with skills. This would be disruptive to community life, and in the long run unprofitable for the projects. It is strongly recommended that prospective employers work together to establish a systematic and co-operative approach to hiring and training northern employees.

Summary Conclusions

The Economy

On the broad scale of the N.W.T. economy, the Polaris Mine will have a small positive impact. This will be the case for most resource development projects until the N.W.T. develops a broader industrial base.

Resolute will benefit most from the mine, to the extent that now marginal businesses could return to a profitable position and some new business opportunities could arise. The major benefit for Resolute is increased employment income.

Arctic coastal communities will also receive employment benefits. The extent of these benefits will depend on whether transportation costs to and from the mine are paid for potential employees from all Arctic coastal communities.

The mine is not likely to have a significant impact on the hunting/trapping/fishing sector of community economies, since the residents indicate employment income will be used to some extent for improved equipment and the proposed work rotation system allows sufficient time for hunting and trapping.

Peak employment during construction of the mine will cause a relatively minor bump in the total number of jobs the project offers over the life span of the mine. This is a positive effect since the transition from construction to operation will not cause major dislocations in the N.W.T. work force.

Some increase in the number of houses constructed in Resolute may be caused by the mine. This would represent a possible re-allocation of government funds from one community to another, rather than an increase in costs to the government, since housing will have to be constructed somewhere for a growing population.

Social Impacts

Since cash income has become important to N.W.T. residents, measures to increase wage employment are of benefit to the N.W.T. The Polaris Mine "transitional" rotation schemes for Inuit workers will have a positive effect socially in that it permits employees to practice both the traditional and wage earning lifestyles. A further benefit offered by the mine is the opportunity for Inuit to acquire portable skills.

On the negative side, rotational employment will cause separation of families for extended periods of time.

In addition the rotation system itself can be considered in a negative light. Simply put, the existing economic and social situation demands that the Inuit workforce at Polaris accept an employment system most southern Canadians would not accept. The southern solution to obtaining a good job is that the employee moves to the job location. At the present time this is not socially or economically acceptable in the N.W.T. A larger population may make the development of more communities possible.

The study team concludes that with regard to rotation, Cominco is attempting to create the most positive result possible under the circumstances. It is hoped that continuing efforts will be made by the company and by other employers to find tune the system for the benefit of future N.W.T. rotational employees.

Overall, the extent to which the Polaris Mine will have a positive effect on the N.W.T. will relate to whether Cominco can and does successfully implement its plans as presently outlined.

Summary of Major Study Recommendations

A townsite should *not* be established at the Polaris Mine at this time.

Although a townsite would alleviate some of the negative effects of family separation, it would not lessen the effects of separation from the extended family. At the same time, a townsite could cause new negative effects, particularly related to the hunting and trapping activities of both new residents and the Resolute people who have traditionally used this area. Rather than a townsite, the study team recommends that work rotation scheules be altered if the impacts of family separation are having negative effects on the hiring and retention of Inuit people.

Work rotation schedules for Inuit should be monitored and adjusted where necessary.

Realizing that work rotation schedules have been established to allow proper training time for Inuit employees, to ensure an efficient mine operation, and to meet operating budgets, we recommend that the 6-4 work rotation be tried, with careful monitoring of the program through the first two years of operation. If it proves unsatisfactory, then Cominco should be

prepared to adjust the work rotation schedule to more closely meet the identified needs of Inuit employees.

Transportation costs between home communities and the mine site should be paid for all N.W.T. employees.

It is unlikely that many people outside the hiring centres of Coppermine, Cambridge Bay and Yellowknife will work at the Polaris Mine if they have to pay their way to these hiring centres, since this extra cost would negate much of the positive effects of mine employment. Since payment of travel costs to all N.W.T. employees could add to the total operating costs of the mine, we suggest that an arrangement be worked out between Cominco and the government, based on the net additional costs to Cominco and the related economic gains to the N.W.T. in general and to specific communities.

The Polaris administrative/operating office should be located in Yellowknife.

Much of the economic benefit to the North will result from the location of the administrative/operating office in Yellowknife. For this reason we recommend that the office be located in Yellowknife, to maximize benefits resulting not only from direct employment, but also from employment resulting from the purchases of supplies and services and respending effects.

Cominco should implement a northern purchase policy for the Polaris Mine.

In this policy "northern preference" should be defined, and the policy should be designed in such a way, that northern businesses can be more competitive with southern businesses, and have the opportunity to submit tenders for jobs they are equipped to handle.

Government's small business development policies should take into account the requirements of proposed major resource development projects.

Many of the supplies and services of the Polaris Mine will require are simply not available in the N.W.T., although many could be developed in the territories as the market for these services expands. Small business development programs should be in tune with the needs of major resource development projects, so northern businesses can benefit from these projects.

Cominco should give recruitment and training of northern employees high priority to ensure employment benefits of the mine remain in the N.W.T.

Cominco should establish goals for employment of Northerners and should employ a co-ordinator for native recruitment/training. There should also be a full time recruiter/-counsellor in Resolute and part time recruiters/counsellors in other communities showing high interest in Polaris employment.

Where possible, Cominco should work with government to set up pre-employment training programs in home communities, or home regions. This could encourage participation. Having to attend courses at the Adult Vocational Training Centre in Fort Smith, often discourages potential trainees from taking the required courses.

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	PROJECT OVERVIEW	
2.1	General Description	5
2.1.1	Mining	5
2.1.2	Surface Facilities	5
2.1.3	Communications	6
2.1.4	Transportation	7
2.1.5	Product Marketing	8
2.2	Construction	
2.2.1	Construction Schedule	9
2.2.2	Construction Employment	9
2.2.3	Construction Expenditures and Income	11
2.3	Operations	
2.3.1	Operations Schedule	14
2.3.2	Work Rotation Schedules	14
2.3.3	Operations Employment	15
2.3.3.1	Number of Positions	15
2.3.3.2	Positions and Qualifications	20
2.3.3.3	Recruitment/Training	23
2.3.3.4	Potential Northern Staff	24
2.3.4	Operations Expenditures	27
3.0	ECONOMIC IMPACTS OF THE POLARIS MINE ON THE NORTHWEST TERRITORIES ECONOMY	
3.1	Methodology	30
3.2	Analysis of the Three Impact Scenarios	34
3.3	Analysis of the "Most Likely" Impacts of the Polaris Mine	39
3.4	Distribution of Impacts among Communities	41
	Technical Notes to Chapter 3	51
4.0	POTENTIAL SOCIO-ECONOMIC IMPACTS ON RESOLUTE	
4.1	Overview of Socio-Economic Conditions	53
4.2	Potential Employment Impacts	61
4.2.1	Direct Polaris Employment	61
4.2.2	Indirect Employment	66
4.2.3	Induced Employment	67
4.2.4	Resolute Employment Summary	67
4.2.5	Analysis of the Employment Impacts in Resolute	68
4.3	Potential Income in Resolute from the Polaris Mine	71

Page

4.4 Potential Effects on Population Growth 73
4.5 Potential Effects on the Local Economy 76
4.6 Potential Effects of "Pass Through" Traffic on Resolute 84
4.7 Potential Effects on Transportation and Communications 87
4.8 Potential Effects on Community Services/Infrastructure 90
4.9 Potential Effects on Hunting and Trapping 94
4.10 Potential Effects on Community Satisfaction 100
4.11 Potential Effects on Community Stability 104
4.12 Potential Effects on Job Satisfaction 110
4.13 Potential Effects on Social Organization 113
4.14 Potential Effects on Job and Education Aspirations 117
4.15 Attitudes Toward the Project 120

5.0 POTENTIAL SOCIO-ECONOMIC IMPACTS ON ARCTIC COASTAL COMMUNITIES
5.1 General Descriptions of Arctic Coastal Communities 122
5.2 Potential Employment Impacts 126
5.2.1 Direct Employment 126
5.2.2 Indirect Employment 133
5.2.3 Induced Employment 133
5.3 Potential Income in Arctic Coastal Communities from from the Polaris Mine 135
5.4 Potential Effects on the Economy of Arctic Coastal Communities 138
5.5 Potential Effects on Transportation and Communication 140
5.6 Potential Effects on Population Growth 141
5.7 Potential Effects on Community Services and Infrastructure 141
5.8 Potential Effects on Hunting and Trapping 142
5.9 Potential Effects on Community Satisfaction 145
5.10 Potential Effects on Social Organization 146
5.11 Potential Effects on Job and Education Aspirations 146
5.12 Potential Effects on Community Stability 147
5.13 Attitudes Toward the Project 150

6.0 SENSITIVITY ANALYSES
6.1 Extended Recruitment Area 151
6.2 Shortened Rotational Schedule for Resolute 157
6.3 Shortened Rotational Schedule for Other Communities 159
6.4 Variations in Transportation Policy 161
6.5 Development of a Townsite at the Mine 164
6.6 Other Major Projects Proceeding in the N.W.T. 166

7.0 RECOMMENDATIONS 167

LIST OF TABLES

		Page
1.	On-Site Manpower Requirements by Month during Polaris Construction	10
2.	Man Hour Requirements by Skills during Polaris Construction	10
3.	Capital Expenditures, Construction	12
4.	Capital Expenditures by Expenditure Category	13
5.	Summary of On-Site Positions by Job Category	20
6.	Pre Production Training Positions	24
7.	Potential Number of Northern Employees – Base Case	25
8.	Potential Number of Northern Employees – Alternative Case	26
9.	Annual Polaris Purchases of Goods and Services	28
10.	Community Distribution of Purchases during Operations	29
11.	Parameters Used in Model Simulations	36
12.	Impacts of the Polaris Mine on Major Economic Indicators	38
13.	Impacts of the Polaris Mine on the N.W.T. Economy	44
14.	Potential Employees from Arctic Coastal Communities – Base Case	130
15.	Potential Employees from Arctic Coastal Communities – Alternative Case	131
16.	Summary of Community Income Resulting from Polaris Mine in 1985 – Arctic Coastal Communities	136
17.	Potential Number of Northern Employees, including Baffin and Keewatin Regions – Base Case	155
18.	Potential Number of Northern Employees, including Baffin and Keewatin Regions – Alternative Case	156

LIST OF EXHIBITS

A-1	Polaris Mine Positions	18
A-2	Polaris Mine Positions – Phasing-In and Full Operation	19
B.	On Site Positions by Skill Category	21
C.	Assessment re Possible Northern On-Site Hires by Job Category Skill Requirements	22
D.	Community Distribution of Polaris Impacts in 1986 Base Case	42
E.	Community Distribution of Polaris Impacts in 1986 Alternative Case	43
F.	Community Distribution of Polaris Impacts in 1986 Including the Baffin and Keewatin Regions	163

LIST OF APPENDICES

		Page
1.	List of People Contacted/Interviewed	i
2.	List of Material Reviewed	iii
3.	Detailed Construction Schedule	iv
4.	Potential Construction Contracts for Northern Companies	vii
5.	Population Statistics — Resolute Bay	viii
6.	Summary of Responses — Resolute Questionnaire/Interviews	x
7.	The Study Team	xix
8.	Letters of Agreement	xx

ALASKA NATIVE HEALTH BOARD, INC.

RURAL RESOURCE CENTER

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INTRODUCTION

The Alaska Native Health Board (ANHB) was formed in 1968, and was made up of representatives from each of the seven Indian Health Service hospitals (service units) within Alaska. In 1973, the ANHB was reorganized to reflect the twelve Alaska Native regions formed as a result of the Alaska Native Claims Settlement Act.

The ANHB is first and foremost an advocacy agency, working to improve the health of Alaska Natives, and to improve the health services provided to Alaska Natives. In the early 1970s, the ANHB questioned the effectiveness of alcoholism services, which resulted in an indepth study of those services. Among other projects, ANHB was actively involved in the ATS-6 satellite project; examined health care delivery systems that were paying too little attention to cultural differences and geographic barriers; dealt with patient grievances; and helped form the National Indian Health Board.

In 1978, the Alaska Federation of Natives designated the ANHB as its Standing Committee on Health and, in 1979, the ANHB signed a Memorandum of Agreement with the Indian Health Service strengthening and clarifying the ANHB's leadership roles in program planning, evaluation of services and programs, procurement, budget review, and the hiring of top level IHS Area executives.

More recently, the ANHB has been actively involved in the eradication of Hepatitis B, research, evaluation, and the replacement of the Alaska Native Medical Center in Anchorage. In 1984 and 1985, the ANHB has been involved in execution of a Rural Health Issues Study and Statewide Suicide Evaluation Project for the Alaska State Legislature. It was in the conduct of these two activities that much of the information and vision contained in this document had their origins.

The final report of the 1985 ANHB Rural Health Issues Study and the Statewide Suicide Evaluation Project expressed the need for a rural health services methodology for Alaska. While that document looks at the major health problems experienced by rural Alaskans, it especially identifies the underlying connection of behavioral health problems, to the majority of physical health issues. As a direct result of the analysis of those physical and behavioral health problems the ANHB has developed the concept of the Rural Resource Center.

Several action proposals have been developed to address the proposed changes in services delivery (especially in behavioral health areas) in rural Alaska. New program models containing innovative philosophies and methodolgies are in various stages of development. In attempting to correct deficits in rural behavioral health services delivery, the ANHB Rural Resource Center contains nine interrelated components/functions which represent practical strategies for ameliorating those deficits.

ALASKA NATIVE BEHAVIORAL HEALTH CONCERNS: CULTURAL DISLOCATION

Changing Lifestyles: Rural Alaska villages are moving from a subsistence lifestyle toward a cash economy. All forms of technology are changing rapidly, creating difficult challenges to the more traditional Native culture. The revolution in communication systems and the advent of modern media have changed expectations among residents, creating depression and a wide variety of negative health problems.

Negative Changes in Native Culture: Several generations of Native people have gone through the boarding school process which took people from villages to schools "outside," creating a schism between Native elders and youth. A major result of this has been the loss of parenting skills.

Rural Alaska residents, and especially Alaska Natives, suffer inordinately high rates of suicide and other forms of violence and abuse. Death and illness associated with injuries from external causes (snowmachines, three-wheelers, boats, airplanes and automobiles) are extremely high. The rates are many times higher than for Americans generally, and also for urban Alaskans. Rural Alaska Natives suffer greatly from all forms of substance abuse, with the abuse of alcohol designated by virtually every state and federal health agency as the most serious health problem in Alaska.

Many of the Native villages in Alaska are psychologically depressed in the sense that they suffer from a general malaise resulting in the negative health status described above. At present, health promotion and disease prevention strategies are virtually non-existent in most villages. Because state and federal treatment and prevention resources are becoming more difficult to secure and, even if there were unlimited resources, the vast geographic reality of Alaska would make delivery of those services difficult under the best of circumstances. Local resources must be explored, developed and used, with local health promotion and prevention capability being developed through work with elders and possible resurrection of traditional Native health philosophies and behaviors.

THE CONCEPT OF COMMUNITY

It is important to assess and evaluate rural health service delivery within the context of rural attitudes and value systems. Too frequently assessment and evaluation are derived from standards developed for urban communities. Rural value systems tend toward wholistic approaches to life. The community and its members are perceived as a unified entity. Rural Alaskan communities have been described as a family of families.

Improvements in the health of villagers will require an active searching with all members (elders, adults, youth) of their physical, emotional, intellectual, spiritual and interpersonal lives for causes and symptoms of disease.

Economic, health and social development are interrelated. The expansion of one without the other may lead to greater dependency and destroy efforts aimed at self-sufficiency. During 1985, the ANHB surveyed all villages in Alaska regarding suicide prevention, adolescent health needs, major rural health issues and the roles of various governmental entities. As a primary suicide prevention strategy, villages recommended the development of additional economic opportunities at the village level.

It is imperative that the community enhancement process include the improvement of health of all residents. Once they feel more in control of the health of themselves and their families, community leaders will feel capable and supported to tackle the outside negative forces on their communities, such as bootlegging, environmental destruction of traditional lands, drug trafficing, etc. Healthy, non-abusive residents will be more capable of making realistic decisions regarding economic opportunities as well as community health and social issues.

The community must be seen as both the client and the agent of support and sanction in rural Alaska. A community wellness model that allows for positive preventive and educational tasks is more consistent with rural values than is a treatment model that focuses primarily upon illness.

ETHNIC AND MINORITY CONCERNS

The specific problems of rural Alaskan ethnic groups vary with region, economic circumstances, and rate of social change. These populations often experience heightened stresses as a result of poverty and lack of power.

Rural Alaskans are typically subjected to both urban and majority cultural biases in planning and implementation of health services. An issue affecting the delivery of quality behavioral health services to rural communities is that of non-local control of planning. The cross-cultural, bilingual and socio-economic components of behavioral health problems demand a flexibility and a sensitivity to local needs that is difficult to achieve in any centralized, bureaucratic system of medical care.

Today the dominant health issues among Alaska Natives are behavioral. It is important to realize that health problems are as much a function of the context in which they occur as they are of the person.

Capacity Building for Policy Boards:

Boards of Directors of regional corporations are rapidly gaining experience in working within western corporate models. However, these models of doing business are vertical, linear constructs which were, prior to the Alaska Native Claims Settlement Act (ANCSA), somewhat alien to rural and Native ways of doing business.

Additionally, regional and community policy boards typically must represent vast geographic areas and are able to meet infrequently, due to the high cost and great distances involved. It is paramount that, when such boards assemble, they be able to conduct business within the bounds defined by appropriate corporate rules.

The regional and community policy boards, because they have been in the "trenches" almost from the start, have had little formal training in the "how to" of being effective boards. Even non-profit boards situated in urban areas of the United States, populated by persons steeped in Western lore, find they must dedicate a certain amount of board meeting time to training on how to conduct meetings, communications and decision-making, board/staff relationships, and planning and problem-solving. For rural Native boards, unfamiliar with corporate expectations, training is essential.

FUNCTIONS OF THE ANHB RURAL RESOURCE CENTER

CLEARINGHOUSE:

A. Information Exchange:

The Rural Resource Center serves as a "clearinghouse" for information on programs and treatment to be disseminated to people working in the field; provides information about current programs being conducted elsewhere, as well as direct consultation on program design; shares written information and makes staff available for presentations to groups (e.g. regional staff, community leaders, professional groups, etc.).

Program resource sharing among the regions is facilitated by the ANHB Rural Resource Center:

Example:

-Suicide prevention workshop components:

- Existing programs in various Alaskan communities.
- Overview of working program models for suicide prevention and intervention.
- Methods for community discussion and self-assessment.
- Methods for developing local resources, informal responses.
- Special youth oriented approaches.

  Methods for utilizing the expertise of elders in designing programs.
- Facts on developing crisis lines, survivor groups and attempter groups.
- Literature searches for worldwide responses to similar behavior problems.

- Maintain resource directory: Identify program models, resource people, agency resources.

- Help to connect communities/regions into existing networks.

- Serve as an umbrella organization to coordinate the large number of statewide resource groups.

- Identify contractors and job categories that are hard to fill (e.g., planners and certain types of professionals, such as MCH nurse practitioners).

- Promote the use of student interns -- coordinate with University of Ala etc.

- Facilitation of resource sharing among the regions, e.g., bring region A's substance abuse coordinator to region B lacking resources and information.

- Consultant file -- recommendations; matching expertise to needs to respond to rural agency requests.

- Keep track of funds: What is available for what programs; applicability to regional/community needs.

- Pursue alternate funding resources for rural program enhancement.

- Use newsletter (ANHB village link) to advertise resource bank.

EDUCATION AND SUPPORT:

A. Capacity Building

Regional Training: Boards of Directors of regional corporations are generally not well versed in linear, western corporate models of doing business. Board training is designed to educate Native board members in non-Native worldview and corporate procedures.

MEETINGS
- How to run meetings (parliamentary procedure)
- Setting agendas, taking minutes
- Legal obligations/liabilities of corporate members
- How to get more out of meetings (productivity)

The manpower development component seeks to achieve the integration of behavioral health programs at the village level based on an understanding of the concept of wellness as it exists within the cultures inhabiting rural Alaskan communities.

This function is concerned with both professional training opportunities and continuing education and learning experiences for those already working in the field. The Center's purpose in this function is to influence the production and development of staff suitable for work in rural areas. Specific attention will be paid to the development of manpower pools drawn from populations that are ethnically representative of specific communities.

It is recognized that this function must be realized through collaborative efforts with accreditation bodies, with federal and state funding agencies.

The importance of recruiting indigenous persons to work in rural health programs cannot be overemphasized. People familiar with local customs are needed as "care givers" at all levels of specialization.

It is necessary, practicable and feasible to involve in the service delivery system those persons who form a bridge between traditional ways and current concepts in the delivery of services. Cross-cultural training is provided to non-Native employees of regional and community agencies, who must both serve Native patients as well as work with Native co-workers.

When feasible, training is to be provided in local settings, for the removal of the trainees to urban settings may change the very qualities for which they were selected. Training in urban settings may work a severe hardship on that person, in terms of surviving in an urban setting through the duration of the training.

The training of rural residents within local settings in techniques appropriate for their communities is very desirable and the Rural Resource Center advocates a mechanism for such training.

C. Community Resource Development

The Rural Resource Center will develop innovative approaches in adapting and integrating health and human service methodolgies with traditional cultures and practices.

Current Village and Regional Leaders:

- Individuals are cross-trained in a number of related skill areas, such as Natural Helpers trainers, and in methods for developing a cross-intervention plan for their community.

- After trainers are trained, they will do training in their communities and will work with the rest of the adult community to develop their own prevention plan.

Region-specific Activities:

- Development of Cross-Training Manual: covering sexual assault, domestic violence, suicide, substance abuse, anger therapy, counseling skills, assessment skills and referrals. Regional-level training would then take place.

- Development of Wellness Indicators: to assist the people to develop their own wellness assessments.

- Role of Regional Health Corporations: serve as T.A. to the residents of the communities within the regions.

COORDINATION:

A. Project Facilitation

The Rural Resource Center, given its resources on program models, rural resource personnel and elder cultural consultants, as well as linkages with various government and nonprofit health and social services agencies, may effectively serve as a facilitator for demonstration projects.

Given its direct linkage with rural Alaskan communities, the RRC can assist funding agencies in the provision of technical assistance to remote grant sites. Cultural communications and often "trust" barriers may be eliminated thereby enhancing the local community program efforts.

The RRC can also provide the village generated input, planning and coordination activities necessary for statewide rural health conferences, cross-cultural training, and resource reallocation studies.

PROPOSAL FOR FUNDING THE ANHB RURAL RESOURCE CENTER

GOALS:

A. IMPROVE THE HEALTH STATUS OF ALASKAN COMMUNITIES THROUGH PREVENTION AND HEALTH PROMOTION ACTIVITIES:

Objective 1: Coordination of existing programs.

Action 1.1: Distribute program models to regional agencies.

Action 1.2: Maintain Resource Bank.

Action 1.3: Maintain ongoing survey of recent literature and share with regional agencies.

Objective 2: Public education.

Action 2.1: Develop media relevant to rural Alaska.

Action 2.2: Maintain and upgrade data.

Action 2.3: Workshops: Consult on, plan for and assist villages and regions to conduct.

B. REDUCE DEPENDENCY OF RURAL COMMUNITIES ON OUTSIDE AGENCIES:

Objective 1: Build local capacity.

Action 1.1: Train regional and community trainers in community development, crisis intervention, board/council training, assessment techniques, resource identification techniques, counseling techniques, Natural Helpers.

C. ESTABLISH FOUR PILOT PROJECTS IN THE VILLAGES OF MANOKOTAK, TOGIAK, LEVELOCK, AND NEW STUYAHOK IN THE BRISTOL BAY REGION: (See addendum, "Community Empowerment in the Bristol Bay Region")

- Community development techniques for community empowerment
- Natural Helpers
- Crisis line and counseling techniques
- Policy board training

ADDENDUM

COMMUNITY EMPOWERMENT IN THE BRISTOL BAY REGION

SUMMARY:

Many rural Alaska villages are suffering from a dramatic rise in problems related to alcohol and other substance abuse. These problems include vehicular injuries, suicide, homicide, family abuse and child neglect, loss of parenting skills, high dropout rates among school age children, increasing teen pregnancies, and so forth.

Many of these communities can be characterized as profoundly "depressed," with repeated expression of the above conditions not unusual. Reasons for these conditions may be varied and so complex as to defy rational explanation. Some researchers lay blame on the explosion in mid-Twentieth Century media and communications, which has the effect of weakening the traditional Native language base. Others lay blame on encroachment by the cash economy of the world mono-culture upon an ever weakening subsistence economy. Regardless of the particular cause to which one is wed, most researchers agree that rural Native Alaska is undergoing severe cultural dislocation, and that as this cultural dislocation has resulted in the severe erosion of "informal" responses to community problems that characterized the traditional Native lifestyle, there is a dangerous and growing dependence by Native Alaskans upon "formal" systems. That is to say, there is growing expectation that the federal government, state government, or regional corporations will "provide a program" to solve problems.

Governmental response to the negative health status outlined above has been to impose treatment (and even prevention) programs upon communities that were designed in urban, western European/American locales that are, for the most part, inappropriate for use by rural Alaska Natives. Quite simply, the governmental programs are not even marginal in their impact upon the problems of alconol abuse and related issues, and may in many cases be making the situation for the community worse because of the tendency that these programs have of actually increasing the dependency mind set of the community.

The action being proposed here is designed to reinvest the community with the power to decide its own destiny. It is an empowerment activity designed to return to the community the authority to define its own problems, and not to be told by any outside agency what its problems are. Second, this proposed action would assist the community in inventorying its own local resources, to the end that this tells the community in a more precise way what resources will actually be needed from outside

BRIEF DESCRIPTION OF THE BRISTOL BAY REGION:

Bristol Bay is a shallow body of water in the eastern Bering Sea, bordered on the south and east by the Alaska Peninsula and the Aleutian Islands, and on the north by the Alaska mainland.

The climate is relatively mild, with higher precipitation from inland areas. Summer temperatures range from 50 to 70+ degrees F to winter temperatures usually in the 10 to 20 degree F range, with occasional drops to as low as -30 degrees F.

The majority of the permanent population of approximately 6,000 people is concentrated in the Dillingham and Naknek/King Salmon areas. The other 29 communities have populations ranging from less than 50 to 500+. The population of the villages outside Dillingham is 90% Alaska Native (Tanana, Athabascan, Yupik and Segstun Aleut). Population breakdown is approximately 53% male, and 47% female, and 68% Alaska Native and 32% non-Native.

The region is the world's largest salmon fishery and, in the summer commercial season, the population may double. The communities that have canneries attract the bulk of the summer transient population, as well as residents from other villages within the region.

While there is an increasing "cash economy centered around the seasonal summer fishing, the subsistence lifestyle is still very much alive. Living conditions and amenities, while much improved, are still very depreseed when compared to the urban centers of Alaska and elsewhere. The dependence on fishing leaves villages vulnerable to the effects of poor salmon runs and the price of salmon in the world market. Isolation and total dependence on air travel and summer water travel keep transportation costs high. There are less than 60 miles of interconnecting village roads in the entire region, and all forms of transportation are subject to weather inclemency year round.

MAJOR PROBLEMS IN THE BRISTOL BAY REGION:

A. Cultural Dislocation

1. Changing Lifestyles: Rural Alaska villages are moving from a subsistence lifestyle toward a cash economy. All forms of technology are changing rapidly, creating difficult challenges to the more traditional Native culture. The revolution in communication systems and the advent of modern media have changed expectations among residents, creating depression and despair.

is often not much enthusiasm or support for programs. They often have a poor understanding of what the programs can actually do. The service agencies continue to be frustrated because when they do get programs out to the villages they might not "work" the way they are supposed to. This is especially true of the behavioral programs that are supposed to deal with what is considered the source of so many other problems.

2. Social, health and other state and federal agencies are for the most part available to the communities, but often only at the regional level, requiring costly travel. Even then, they might not be in forms that are useful to those villages. These programs (alcohol treatment and prevention, mental health, law enforcement, economic development, etc.) tend not to reflect Native values or worldview. They tend to have been developed in urban settings for a non-Native population. They remain difficult to access.

C. Educational System: Not preparing Native people for village life

1. Schools are not preparing residents for life in the village, but emphasize dominant society career expectations which encourage out-migration of youth and encourage deep divisions between elders and youth. Currently, Alaska Natives experience a very high school dropout rate.

2. Very little "non-formal" training for village work and activities is sponsored by the modern schools.

3. There are not enough Alaska Native teachers.

D. Employment

1. The Bristol Bay region is similar to the rest of "Bush" Alaska, in that it is a single industry region. Salmon fishing comprises the vast majority of job opportunities, with government employment running a close second. The problem here is that fishing is seasonal, and the industry is governed through a "limited entry" system which severely restricts entry by younger Natives into that system. Limited Entry Permits run well over $100,000 for the aspiring new young fisherman.

2. There has been virtually no formal development of local, cottage type industry in the region.

each of the 32 member villages in the Bristol Bay region. The primary instrument of BBAHC in the villages is the Community Health Aide, an employee of BBAHC who lives in the village, and delivers primary health care. In addition, BBAHC conducts such programs as alcohol treatment and prevention, mental health, safety and risk reduction, sanitation, maternal and child health, eye and dental.

BBAHC has identified approximately $15,000 for use in this project. The primary role of BBAHC will be to identify (with BBNA) appropriate village assistants for the project and coordinate their training. Additionally, BBAHC will assist ANHB and BBNA in conducting a regional workshop to explore the village Plans once they are developed. Additionally, BBAHC will respond to proposed field service program changes expressed in the village Plans. At the village level, and as an outcome of the regional workshop that brings the village Plans into the open for discussion and application, outside health and social services agencies such as BBAHC will integrate their own program objectives to meet the realistic needs of the villages.

Should the village Plans and the regional workshop so indicate, BBAHC may initiate a "trainer of trainers" program as a major activity at the regional level, in order to maintain service delivery capability as close to the village as possible.

C. Bristol Bay Native Association (BBNA): BBNA represents the same area as does BBAHC, except that BBNA operates programs in the areas of economic development, housing, education, child protection, etc. BBNA staff capability relevant for this project are in Family Services, Employment and Training, Elderly Nutrition, and Social Services. The role defined for BBAHC applies also for BBNA.

D. Villages of Manokotak, Togiak, Levelock and New Stuyahok will provide the following resources: Governing Council meeting time, elders and youth as key informants, Community Health Aides (CHAs), Community Health Representatives (CHRs), Village Public Safety Officers (VPSOs), school officials, religious groups in the key informant process and in the community meetings. Additionally, each village will establish a Project Action Committee to oversee the project.

E. State of Alaska: Several agencies of state government will participate in the project: State Office of Alcohol and Drug Abuse, Division of Mental Health, Division of Public Health, Department of Public Safety, Division of Corrections. These agencies will make themselves available to the village planning process as "consultants" and will participate in the regional conference which looks at the village Plans and suggests ways of implementing those plans.

alcohol abuse and its related problems (suicide, violence, family abuse, accidents, etc.) will be a major issue to be considered. Alcohol abuse is the most serious health hazard facing Alaska Natives. It is a community issue and must be treated wholistically. A wholistic approach will strive to upgrade the economic, social, educational and health conditions of each community. Given the tools provided by structured community assessment and resource identification, the community will develop a plan to meet its own needs.

The fourth step is the development of the village's Project Action Plan. It will be the task of the ANHB, as coordinator of the process, to identify and make available to the communities resources needed to finalize the Plan. Representatives of the Native regional organizations (BBNA and BBAHC) will be involved in the formation of the Plan.

The Project Action Plan will identify the following:

A. Needs/Issues

B. Available Village Resources

C. Priority Issues Appropriate for Village Resource Use

D. Priority Issues Needing Resources of Outside Agencies:

Regional
State
Federal
Other

MANAGEMENT AND ADMINISTRATIVE CAPABILITIES:

The ANHB has managed a basic IHS administrative contract since 1979. Additionally, the ANHB currently manages a contract with IHS which is evaluating the IHS system in Alaska; another, which provides Hepatitis B screening and immunization services to Natives at the Alaska Native Medical Center; and another which has brought Alaska Native elders into the examination of the high suicide rate among Alaska Natives.

The ANHB also recently conducted a major Rural Health Issues Study ($75,000) and a Statewide Suicide Evaluation Study ($100,000) for the State. The ANHB has conducted sundry workshops, conferences and studies since 1969.

A major activity of ANHB has been that of "capacity builder" among the 12 regional constituent agencies that form the membership of the agency. Training has been provided in board function, staff development, cross-cultural training, planning, suicide prevention and community development.

BUDGET

BRISTOL BAY PILOT EMPOWERMENT PROJECTS

Personnel		
Four (4) Village Project Assistants @ $1,000 p/mo	$48,000	
Elder Consultants @$100 p/d X 30 days	3,000	
Fringe @ 23.2% (BBAHC rate)	11,832	
		$62,832
Travel		
Resource Coordinator, Anchorage/ Dillingham Air Fare, 9 X $320	2,880	
Per diem 9 X 3 days @$103 p/d	2,781	
Village Project Assistants		
Levelock/Dillingham (2 trips X $100)	200	
New Stuyahok/Dillingham (2 trips X $50)	100	
Togiak/Dillingham (2 trips X $80)	160	
Manokotak/Dillingham (2 trips X $40)	80	
Per Diem (8 trips X 3 days X $103 p/d)	2,472	
Consultant Travel (Resource people from other regions)		
Anchorage/Dillingham (4 trips)	1,280	
Dillingham/Levelock (RT)	100	
" /New Stuyahok (RT)	50	
" /Togiak (RT)	80	
" /Manokotak(RT)	40	
Per Diem (16 days @ $35 p/d)	560	
		$10,783
Office Expenses		
Telephone ($50 p/mo. X 4 X 12 mo)		$ 2,400
Other		
Consultant Services		
Alaska Native Technical Resource People (4 consultant visits X 16 days X $150 p/d	2,400	
Conference Costs		
Meeting Space (Dillingham)	150	
Refreshments (@ $3 per/person)	300	
		$ 5,250
	TOTAL	$78,715

from the current western/urban oriented medical model approach to the behavioral health issues which lie at the root of so many of the health problems suffered by rural Alaskans. Behavioral health issues, such as alcohol abuse and family dysfunction, are among the disorders being addressed.

The singlemost important feature of the NPR field test component is that communities must own the intervention strategies initiated to deal with these important issues. The communities become active participants in the processes that lead toward community health.

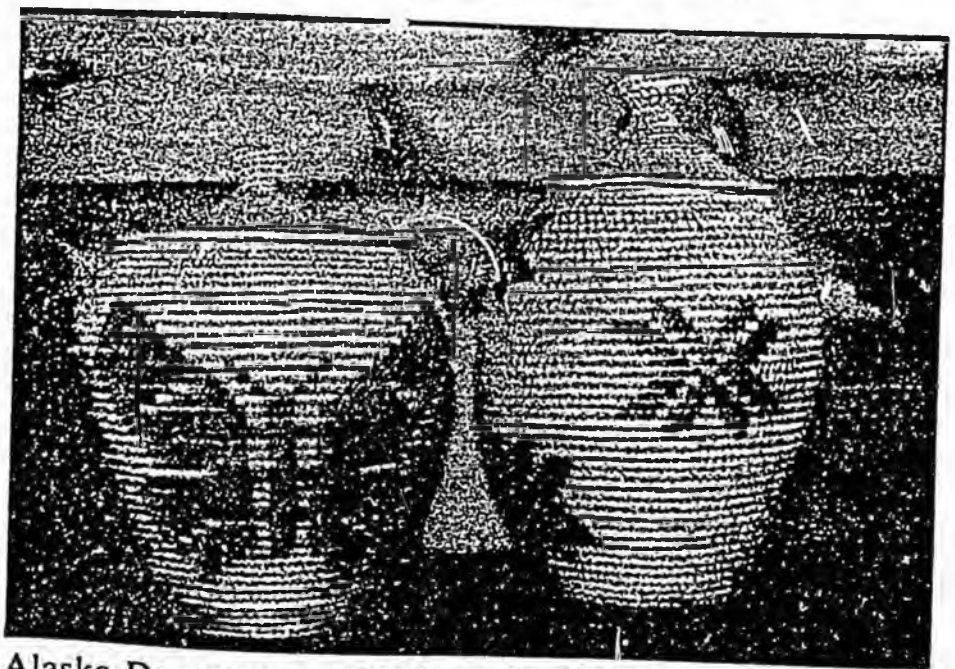
COST OF THE PROJECT

The North Pacific Rim field test and evaluation component is expected to cost $75,000.

LOWER YUKON-KUSKOKWIM REGION LABOR MARKET ANALYSIS







Alaska Department of Labor Jay S. Hammond, Governor State of Alaska

JULY, 1981



Lower Yukon-Kuskokwim Region Labor Market Analysis

STATE OF ALASKA Jav S. Hammond, Governor

ALASKA DEPARTMENT OF LABOR Edmund N. Orbeck, Commissioner
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Table of Contents

Introduction 1
Summary 2

PART I EMPLOYMENT AND INCOME IN THE LOWER YUKON-KUSKOKWIM 4
- Employment and Outlook by Industry 8
- Summary of Employment and Income 22

PART II RURAL UNEMPLOYMENT — A CLOSER LOOK ... 24
- Current Employment and Unemployment Definitions and Estimating Process 25
- Labor Force Estimates: Comparison to a Household Survey 30
- Detailed Survey Findings 37

PART III FEASIBILITY OF EMPLOYMENT SERVICE LOCAL OFFICES IN THE LOWER YUKON-KUSKOKWIM REGION.... 52

INTRODUCTION

For many years the Alaska Department of Labor has received criticism for its release of unemployment rates which severely understate the "real" level of unemployment. The bulk of this criticism comes from rural areas of the state where the problem of unemployment is quite visible and levels are very high. In recent years there has been an increasing reliance on area unemployment rates as a mechanism for allocation of Federal and State funds to direct resources to those areas most in need. In spite of continuing criticism of published unemployment rates and the increasing use of such statistics for resource allocation, the question of "real" unemployment had never been effectively studied. Last year, the second session of the eleventh Alaska Legislature funded ". . . a study of real unemployment, employment opportunities and the feasibilty of establishing an employment security office in the Lower Yukon-Kuskokwim region."

This report presents detailed findings of a labor market analysis for the Lower Yukon-Kuskokwim region. Employment opportunities within the region are first discussed then followed by a thorough treatment of the question of "real" unemployment. Finally, a brief analysis concerning the rationale for establishment of employment security offices is presented.

Many individuals contributed to the successful completion of this study. Although too numerous to name, those individuals who conducted the many household interviews made possible the analysis concerning "real" unemployment. Most importantly, these interviewers provide direct proof that a talented, eager and able labor pool exists throughout the area. Likewise, a special thanks is due Bruce Day, AVCP Employment and Training and his staff who graciously offered (and quite effectively provided) assistance in obtaining, training and managing the interviewer teams. Research and analysis staff deserving a special thanks include Melanie Wilhelm, Administrative Assistant; Linda Carroll, Typist; Ingrid Zaruba, Statistical Clerk; and Jim Fowler, who did the research on crafts marketing and whose graphics greatly improve the quality and appearance of all Research and Analysis publications.

SUMMARY

The Lower Yukon-Kuskokwim region is comprised of the 1980 Bethel and Wade Hampton census areas. Per capita income estimates for 1978 show that income levels in this area are the lowest within all Alaska. Employment opportunities are extremely limited and labor force participation rates are among the lowest within the state. A thorough labor market analysis reveals that the region lacks a strong (let alone diversified) economic base. Thus, vital employment opportunities needed to provide the cash income required to purchase basic goods and services are few. Of those jobs that do exist, three quarters are in the government and service sectors. In fact it can be said that the region's economic base is its people. Almost all jobs that exist within the area are directly related to providing services to people. Education, health care, employment and training programs and other governmental services account for a large proportion of area employment. Also in support of the region's population is the distributive sector; the transportation and sales of consumer goods, petroleum products for heating and electrical power generation, fishing gear, etc. Currently, there is no significant activity in hardrock mining, petroleum, timber or manufacturing. By traditional standards, the only economic base that exists in the area is fisheries. Although fishing provides a vital source of cash income, it more importantly provides a direct source of food for much of the area's population. Near term prospects for a more diversified economy and new employment opportunites within the region are not encouraging.

By standard definitions, unemployment in the Lower Yukon-Kuskokwim region is high, but not necessarily the highest within the state. By nonstandard definitions, "unemployment" is extremely high, perhaps the highest within the entire state. Data collected through a household survey within nine Wade Hampton communities shows that much of the unemployment in rural areas is "hidden". That is to say, much of the area's unemployment is not apparent because many people do not actively seek jobs in recognition that employment opportunities are extremely limited. By standard definitions such people are not considered a part of the labor force. In effect, it is assumed that non-jobseekers are unavailable for or unwilling to work. This study shows the opposite to be true. A large proportion of those considered out of the labor force under standard labor force concepts did indeed show a great deal of interest in working and stated that they intended to actively look for work when economic conditions improved. What needs to be emphasized is that those areas where labor force participation rates are low (which is especially typical of rural Alaska) "official" unemployment rates will definitely understate the degree of economic hardship and estimates of unemployed will understate the number of people available for and wanting employment. The survey conducted in the Wade Hampton area to generate information needed for this study showed that there may be significant weaknesses in the current methods used to derive labor force estimates at the census division level. Preliminary estimates for January 1981 yield an unemployment rate of 13.2 percent for Wade Hampton. Survey data using similar labor force concepts produced an unemployment rate of 24.7 percent for that month. Survey results were useful n pinpointing potential methodological changes which if implemented, should improve the monthly labor force estimates for sub-regional areas in Alaska. A request will be made of the Bureau of Labor Statistics to adopt these changes. It should be remembered, however, that this study concerns only one area at only one point in time.

The survey also provided sufficient information to develop a broader definition of unemployment. By using this broader definition, unemployment in Wade Hampton for January reaches a rate of 48.8 percent. Thus, a significant gap exists between "official" unemployment rates and rates that could be developed by using broader labor force concepts.

Bringing people and jobs together is a major function of Job Service Offices. Our analysis of the Lower Yukon-Kuskokwim labor market reinforces our belief that there are severe limitations as to what could be accomplished with additional full service offices in the studied region. A large potential labor force exists within the region, however, employment opportunities and job matching possibilities are very limited.

PART I

EMPLOYMENT AND INCOME IN THE LOWER YUKON-KUSKOKWIM REGION

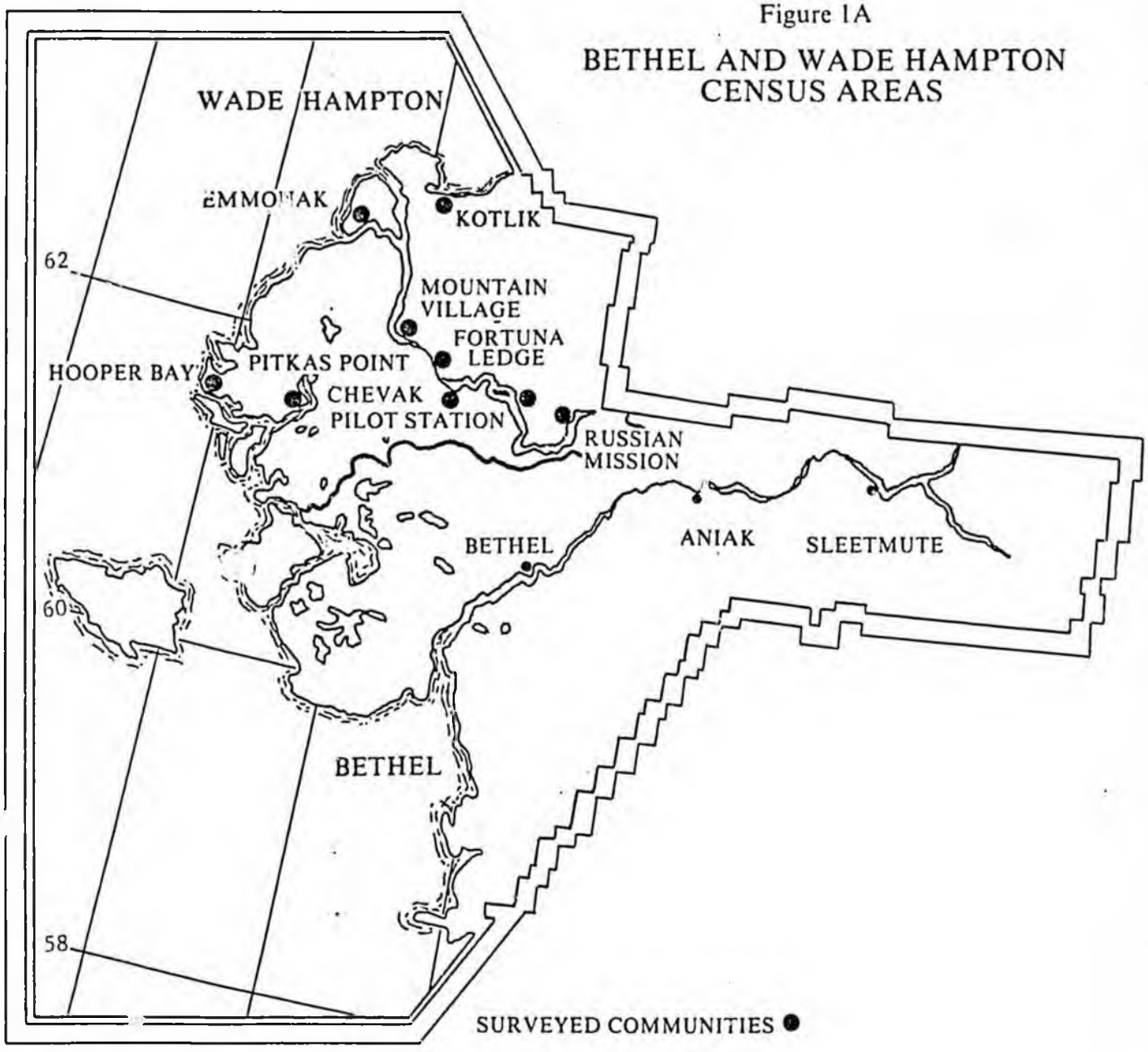
In any analysis of employment and income in a regional economy the underlying basis of the economy must be determined in order to understand its functioning and to make predictions about the potential that the region might have. In the Bethel and Wade Hampton census areas, which have been examined for this report, the region's industry employment categories can be disaggregated into two classifications, (1) those jobs in industries that are the result of dollars brought in from outside the economy, often called basic industry employment and (2) those jobs that serve local demands, often called nonbasic, induced or secondary employment. Basic industry employment is very important to the surveyed region since it provides the income required to purchase goods that cannot be produced in the area, i.e., automobiles, snowmobiles, and other consumer goods.

The Bethel and Wade Hampton census areas receive most of their funds from outside the region from direct and indirect government expenditures and fish related income. Government expenditures and government related employment far surpass any other category of employment, comprising at least 50 percent of total wage and salary employment covered by unemployment insurance programs. Most of the government employment is in the federal and state categories but a great deal is included in the service occupations through CETA funded programs. Much of the construction employment is also directly funded through government appropriations making that category significantly dependent on dollars from outside the region.

The nonbasic sector would include transportation; trade; finance, insurance and real estate; some construction; some service and some government employment. These sectors respond to the driving force of the basic sector and are very dependent upon the health of that portion of the economy. Growth in the nonbasic sector results from increased activity in the basic sector as well as from a more "mature" or developed economy.

Figure 1A

BETHEL AND WADE HAMPTON CENSUS AREAS

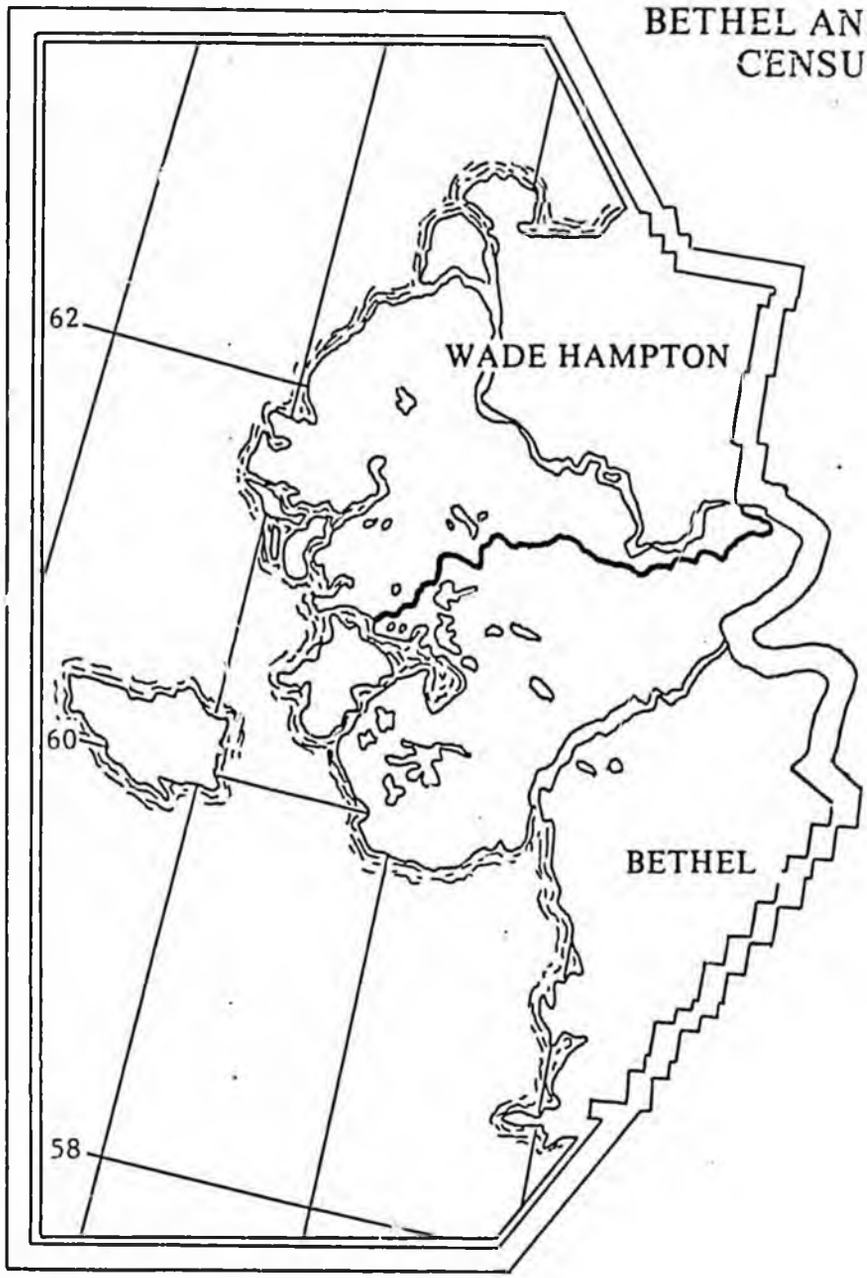


The Lower Yukon-Kuskokwim region has a very active noncash economy which must be considered in order to have an understanding of the area. Fishing for personal consumption or for commercial sale is not included in Alaska Department of Labor statistics. Subsistence hunting and trapping are additional sources of goods for personal consumption. Trapping for profit also provides a source of cash income. In addition the manufacture of crafts (baskets, carving, etc.) occupies the time of many individuals, according to our survey.

In analyzing the employment data of the entire region it must be kept in mind that the city of Bethel area comprises a major portion of the total employment of

Figure 1B

BETHEL AND WADE HAMPTON CENSUS DIVISIONS



the region. The surrounding hinterland relies on Bethel as its trade and service center. What may be true for Bethel may not be true for the smaller villages from an employment standpoint.

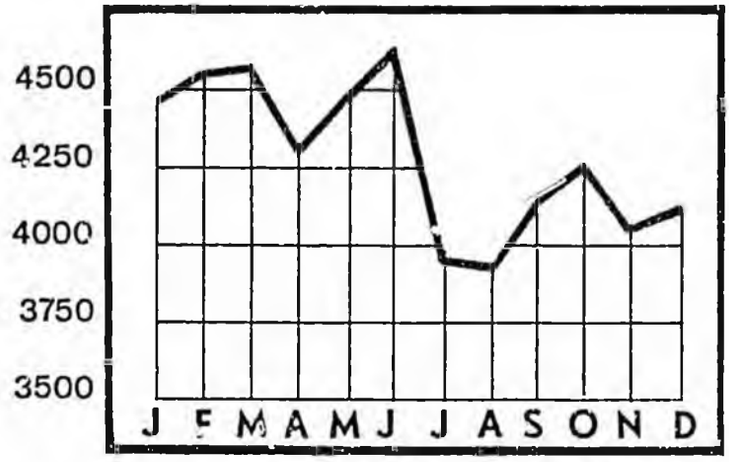
The following employment data was derived from employer reports to the Alaska Department of Labor. Some industry totals could not be published due to confidentiality requirements. Employment which is referred to as "covered" is only that employment which is covered by state or federal unemployment insurance programs. Nonagricultural wage and salary employment includes all covered workers plus estimates for some other categories. Excluded from all definitions are the self-employed, unpaid family help, domestics and those engaged in fishing

(other than processing) and subsistence activities. The industry categories are mining, construction, manufacturing, transportation, communications, public utilities; trade; finance, insurance, and real estate; services, federal government, state government, and local government. Some employment data is for the Bethel and Wade Hampton census areas while some is for the Bethel and Wade Hampton census divisions (see figure 1). The Bethel census division is a smaller geographic area than the Bethel census area. Census division data should be compared with data for the same geographic area.

Data is by place of work so statistics may include workers flown in for special construction projects from other areas of the state.

TOTAL EMPLOYMENT

Figure 2



1979 Total Covered Employment
Bethel and Wade Hampton
Census Areas

-Average monthly total employment region	4293
-Average monthly total employment Alaska	166406
-Average monthly wage Bethel and Wade Hampton census divisions 1979	$ 995
-Average monthly wage Alaska 1979	$1741

Employment in the Lower Yukon-Kuskokwim region in 1979 was very stable. The seasonal downturn occurred during the third calendar quarter in contrast to statewide employment which peaked during the summer. Because fishing is an important economic activity in the region many choose to forego wage and salary employment and engage in activities not covered by our employment statistics. Employment was up over 1978 partly in response to increased reporting by newly covered government employees.

The Region has the lowest average monthly wage of any region within the state suggesting low paying and short term jobs, many of which are funded through government programs. Short term and intermittent employment is typical of the area as it often is in areas where wage employment opportunities are limited and subsistence activity relatively important.

The Bethel and Wade Hampton census areas, although combined in many of the statistics contained in this report, are different in many respects. Bethel Census area has a major city that contains a large proportion of the total jobs available. Wade Hamption has about 30% of the region's population but only 20% of the region's covered employment.

The average monthly covered employment as a percentage of the working age population for the region is about 55 percent, which is lower than the 80 percent experience by the state as a whole. Although economic activity is increasing in the Bethel and Wade Hampton area, the region is not approaching parity in terms of income or labor force participation rates with the rest of the State.

The impact of fishing in terms of income and employment can only be guessed at, as is the case for the rest of the state. It can be said with certainty that for the longterm resident of the area the fisheries resource provides a substantial source of income and sustenance.

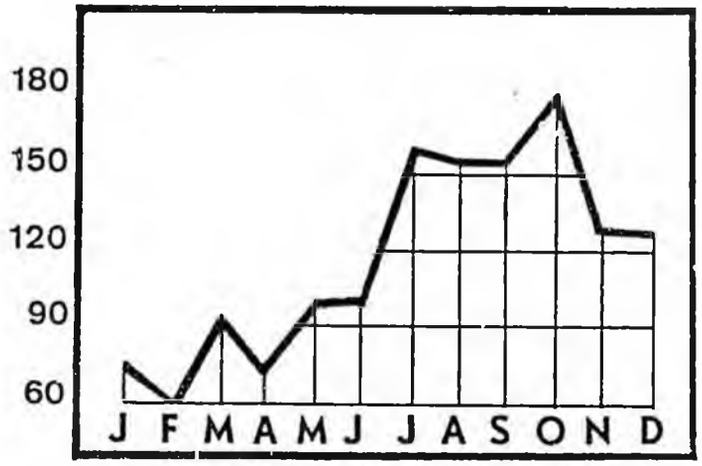
EMPLOYMENT AND OUTLOOK BY INDUSTRY

MINING

Mining industry employment is a very insignificant portion of total employment in the Lower Yukon-Kuskokwim region. Recent announcements have been made regarding exploration activity in the Yukon Delta area. AMOCO in a joint venture with the Calista Regional Corporation, is gathering information about potential oil and gas deposits. Current activity is having little impact on the economy and will not have a major impact in the foreseeable future. Because the increased cost of energy is expected to hit rural Alaska the hardest during the coming decade a local energy source could be very beneficial. Indigenous sources of energy would provide employment opportunities and a buffer against rising energy costs. No major metal mining activities are anticipated during the near term.

CONSTRUCTION

Figure 3



1979 Covered Construction
Employment Bethel and Wade Hampton
Census Area

-Average monthly construction employment for the region	118
-Construction employment as a percentage of total covered employment for the region	2.7%
-Average monthly construction wage for Bethel and Wade Hampton census divisions	$2036.
-Construction wages as a percentage of total wages for Bethel and Wade Hampton census divisions	5.6%
-State construction wages as a percentage of total wages for the state	10.1%
-State construction employment as a percent of total employment	6.1%

Construction employment has increased greatly in the Lower Yukon-Kuskokwim region since 1970. In 1970 there were 55 covered construction workers while in 1979 there were, on the average, 118 monthly workers. Yearly construction employment has varied in response to state capital expenditures and other public projects. Recent appropriations for airport construction and improvements for Bethel, Chevak, Emmonak, Alakanuk, and other towns in the region represent significant construction employment opportunities. Since employment statistics measure employment by place of work, the actual number of local residents employed cannot be determined from available data.

Construction employment exhibits a clear seasonal pattern with highest employment levels during the third calendar quarter. Winter weather requires that most work, especially road and airport construction, be completed during the short building season. September is typically the month with highest construction employment levels.

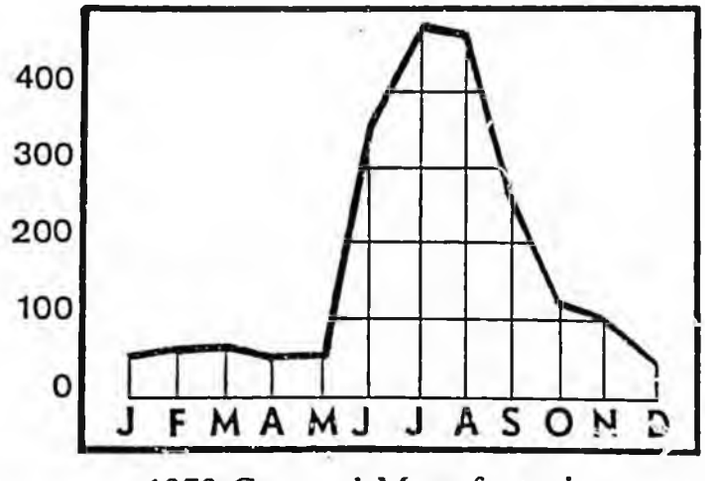
The average monthly wage for construction workers in the Bethel and Wade Hampton census divisions in 1979 was over $2000., the highest monthly wage of any industry sector in that area. This is over twice the average monthly wage for all employment for this region. Clearly, construction employment is an important source of seasonal income to residents.

Since much construction employment is financed through government expenditures this sector represents a significant inflow of dollars into the regional economy and so a large part of this sector can be classified as a basic industry. This dependence on government funds makes predictions of future expenditure levels difficult. The ability of the state to fund needed infrastructure in the rural areas would suggest that future public projects will not be overlooked and that additional employment opportunities in the construction trades will result.

Private construction is a function of population size, economic wealth, and currently, interest subsidies. The Association of Village Council Presidents is expected to start an active housing construction project. Availability of capital is an important factor in the determination of construction levels. Higher levels of construction employment are anticipated for the near term.

MANUFACTURING

Figure 4



1979 Covered Manufacturing Employment Bethel and Wade Hampton Census Area

-Average monthly manufacturing employment for the region	180
-Manufacturing employment as a percentage of total covered employment for the region	4.2%
-Average monthly manufacturing wage for Bethel and Wade Hampton census divisions	$820
-Manufacturing wages as percentage of total wages for the Bethel and Wade Hampton census divisions	3.5%
-State manufacturing wages as a percentage of total wages for the state	7.7%
-State manufacturing employment as a percentage of total employment	7.7%

Manufacturing employment in the Lower Yukon-Kuskokwim region is primarily fish processing related. Employment in this basic industry is evenly distributed between the Bethel and Wade Hampton census areas. Salmon processing is very seasonal, as might be expected, with peak employment occurring during July and August. Historically, fish processing has been fairly stable providing substantial cash income to residents of the region. Average monthly wages were $820 in 1979. The average monthly wage for Wade Hampton was higher than that in the Bethel census division.

Fish processing is a major employing industry and, in this region, provides the greatest opportunity for private employment. This employment is an indicator as to the substantial number of people involved in fishing directly who are not counted in our statistics. The potential exists for additional local fish processing, although there is no real additional harvest potential. Some cooperatives have been established with some being successful and some not.

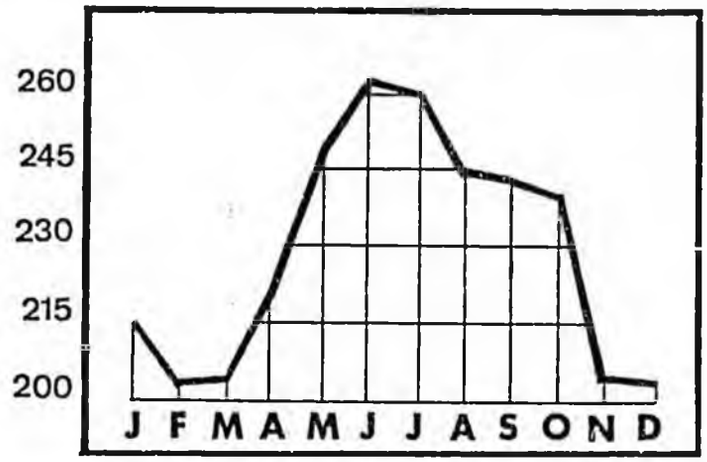
The size of the investment required, the need for proper management, and the risk of price and annual catch make for a rather speculative investment.

There is some additional potential for herring catches in the Nelson Island area and some bottomfish processing potential, but again, markets need to be developed and a large investment will be necessary.

Subsistence use of the fish is an important part of the total fishery, with subsistence catches exceeding 25 percent of total catch in many areas. Chum and king salmon subsistence catches totalled more than 220,000 in the Kuskokwim area in 1980.

TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES

Figure 5



1979 Covered Transportation,
Communication and Public Utilities Employment
Bethel and Wade Hampton Census Areas

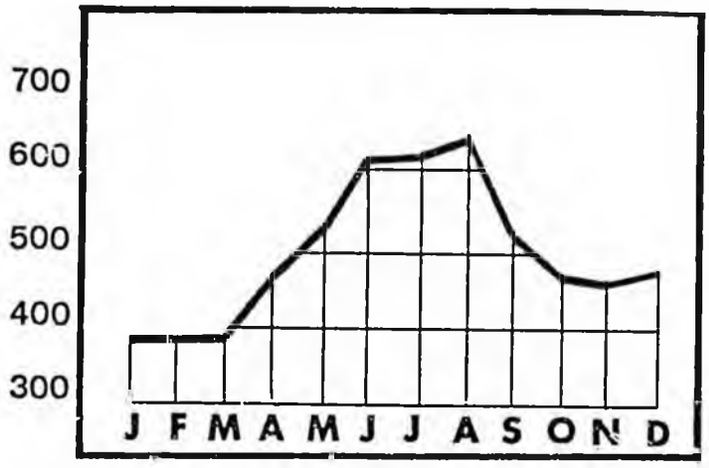
-Average monthly transportation, communication and public utilities employment for the region.	230
-Transportation, communications and public utilities employment as a percentage of total covered employment for the region.	5.3%
-Average monthly transportation communication and public utilities wages for Bethel and Wade Hampton census divisions	$1258
-Transportation, communication and public utilities wages as percentage of total wages for the Bethel and Wade Hampton census divisions	6.5%
-State transportation, communication and public utilities wages as a percentage of total wages for the state	13.0%
-State transportation, communications and public utilities employment as percentage of total employment	10.0%

Transportation, communications and public utilities employment is predominately in Bethel, which serves as the trading and transportation center for the lower Yukon-Kuskokwim region. The rural communities in the surrounding hinterland depend upon Bethel as a transshipment point for supplies and for provision of services. Transportation employment has increased by more than 150% since 1970 indicating increased business activity, growing economic interdependence of the region and increased communication and public utility availability.

Transportation employment exhibits a marked summer upswing mirroring the general seasonal increase in economic activity. The average monthly wage was $1258 in 1979 for Bethel and Wade Hampton, the third highest industry wage for the region. Major employers are air carriers, telephone companies, electrical utilities and barge lines. The highest wages were paid in the Bethel area.

TRADE

Figure 6



1979 Covered Trade Employment
Bethel and Wade Hampton Census Areas

-Average monthly trade employment for the region	501
-Trade employment as a percentage of total covered employment for the region	11.7%
-Average monthly trade wage for Bethel and Wade Hampton census divisions	$814
-Trade wages as a percentage of total wages for the Bethel and Wade Hampton census divisions	9.3%
-State trade wages as a percentage of total trade wages	12.6%
-State trade employment as a percentage of total employment	17.7%

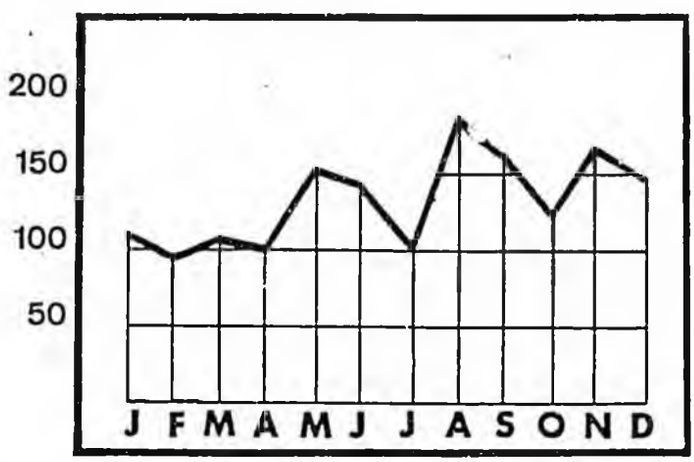
Covered trade employment has exhibited a marked increase since 1970. In 1970 a monthly average of 197 people were employed in trade occupations while 495 were employed in trade occupations in 1979. Trade employment included wholesale and retail establishments such as stores, warehouses, general merchandise sales, apparel shops, etc.

Trade employment exhibits a strong seasonal pattern in response to increased economic activity The average monthly wage for trade employment is $814. The bulk of employment and the highest wages paid are in the Bethel area. Trade employment constitutes a much smaller percentage of total employment than the rest of the state highlighting the less developed status of the region, low per capita income, high cost of goods sold and the limited range of products available.

Trade employment, a nonbasic sector, depends upon the level of income generated from the basic industries, although some of the retail activity is related to tourist expenditures. Increased levels of activity will depend upon higher incomes, less dependence upon subsistence, and possibly, more government expenditures.

FINANCE, INSURANCE, AND REAL ESTATE

Figure 7



1979 Covered Finance, Insurance and Real Estate Employment
Bethel and Wade Hampton Census Areas

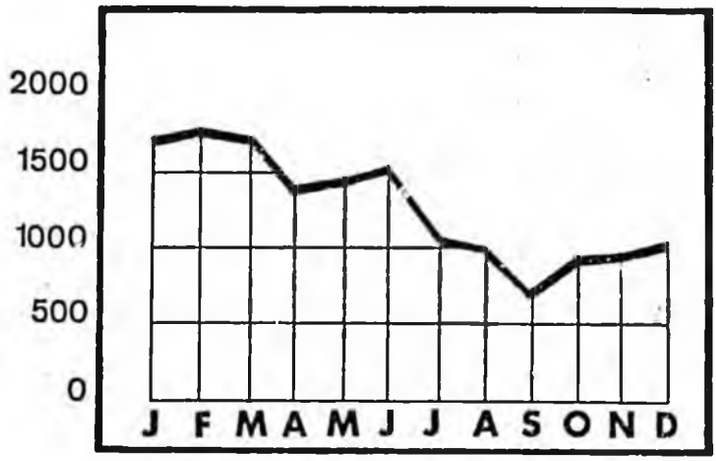
-Average monthly finance, insurance and real estate employment for the region	134
-Finance, insurance and real estate employment as a percentage of total employment for the region	3.8%
-Average monthly finance, insurance, and real estate wage for Bethel and Wade Hampton census divisions	$632
-Finance, Insurance and real estate wages as a percentage of total wages for the Bethel and Wade Hampton census divisions	1.9%
-State finance, insurance and real estate wages as a percentage of total wages for the state	4.0%
-State finance, insurance and real estate employment as a percentage of total employment	4.8%

Finance, insurance, and real estate employment has increased significantly over the last ten years. Banking and insurance employment have become much more important in the region in reponse to a growing economy. The average monthly wage for the industry is about $632, with a smaller percentage of total wages than overall employment would indicate.

With the continuing shift to a cash economy, the increasing level of business activity, the influx of government expenditures and the presence of the Calista Regional Corporation, increased financial and insurance activity is anticipated. The industry should grow proportionately with the increase in employment and earnings.

SERVICES

Figure 8



1979 Covered Service Employment
Bethel and Wade Hampton Census Areas

-Average monthly services employment for the region	1264
-Services employment as a percentage of total covered employment for the region	29.2%
-Average monthly services wage for Bethel and Wade Hampton census divisions	$341
-Services wages as a percentage of total wages for the Bethel and Wade Hampton census divisions	15.1%
-State services wages as a percentage of total wages for the state	12.4%
-State services employment as a percentage of total employment	17.0%

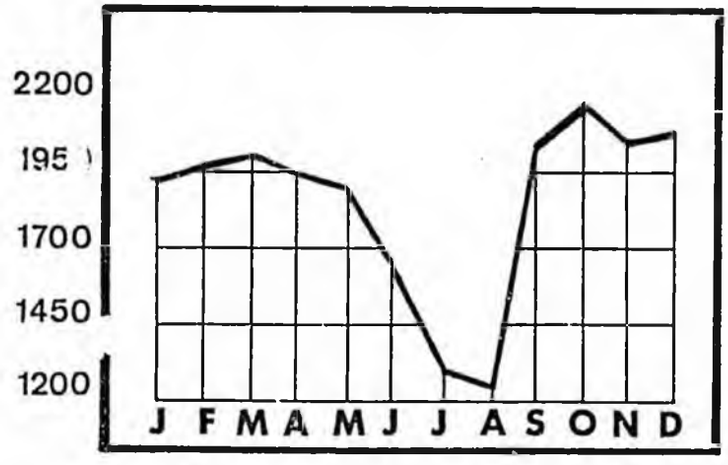
Service employment in the Lower Yukon-Kuskokwim region includes business and professional services, hotels, recreation, social services, and native corporations, most notably the Association of Village Council Presidents. The service employment sector is the largest employment sector in the region with 1769 employees during February of 1979. Much of this employment is federally funded through programs such as CETA or through other government programs or grants. The low average monthly wage figure of $341.00 indicates short term or intermittent employment with relatively low wages. This sector accounts for over 15% of the wage income received in the region.

Because much of this employment is federally funded the future outlook is uncertain. Current federal budget proposals call for elimination of CETA employment programs in fiscal year 1982. Other budget reductions for housing programs or economic development could infringe on service sector employment.

Service employment provides an important source of income to young workers and others as our survey indicates. Cutbacks in this sector will affect the nonbasic sector, especially trade and transportation employment.

FEDERAL, STATE AND LOCAL GOVERNMENT

Figure 9



1979 Government Employment
Bethel and Wade Hampton Census Areas

-Average monthly government employment for the region	1860
-Government employment as a percentage of total covered employment for the region	43.3%
-Average monthly government wage for Bethel and Wade Hampton census divisions	$1260.50
-Government wages as a percentage of total wages for the Bethel and Wade Hampton census divisions	56.5%
-Alaska government wages as a percentage of total wages for the state	32.9%
-Alaska government employment as a percentage of total employment	32.7%

Government employment provides the bulk of wages and salaries in the Lower Yukon-Kuskokwim region. Education, health and social services and administrative functions are the primary activities of this sector. Most of the revenue for support of these function comes from outside the area in the form of federal employees, state employees, and state and federal revenue sharing funds for support of local governments. The state and federal governments participate in local government funding through state and federal revenue sharing and the municipal assistance program through the Alaska Department of Revenue (see table 1). Current legislative proposals for fiscal year 1982 call for large increases in the Municipal Assistance program making this the largest source of local government funding. The government sector is, to a great extent, the basis of the entire economy. The majority of government employment is local government employment, much of this funded through CETA funds. During the first quarter of 1980 nearly 400 employees were funded through CETA funds.

TABLE 1
LOCAL GOVERNMENT REVENUE SOURCES FOR SELECTED COMMUNITIES IN THE BETHEL AND WADE HAMPTON CENSUS DIVISIONS FOR FISCAL YEAR 1980

	Communities	Local Revenues	State Revenue Sharing	Municipal Assistance Fund	Federal Revenue Sharing
W A D E H A M P T O N	Alakanuk	$77,120	$35,835	$6,296	$9,571
	Chevak	53,510	22,297	1,146	4,282
	Emmonak	135,727	27,082	4,146	30,802
	Fortuna Ledge	7,290	22,839	1,032	1,712
	Hooper Bay	35,980	13,481	3,643	4,874
	Kotlik	24,975	11,940	*	6,000
	Pilot Stat.	28,548	14,270	858	2,291
	Russian Mission	4,635	-0-	368	1,454
B E T H E L	Akiachak	15,817	33,311	1,131	4,111
	Akalmiut	32,334	87,340	1,552	19,102
	Bethel	959,645	312,768	73,460	125,799
	Kwethluk	26,239	19,341	2,274	2,852
	Napaskiak	-0-	13,208	479	3,580
	Quinhagak	24,647	18,994	1,559	8,223
	Nightmute	3,140	4,056	281	2,148

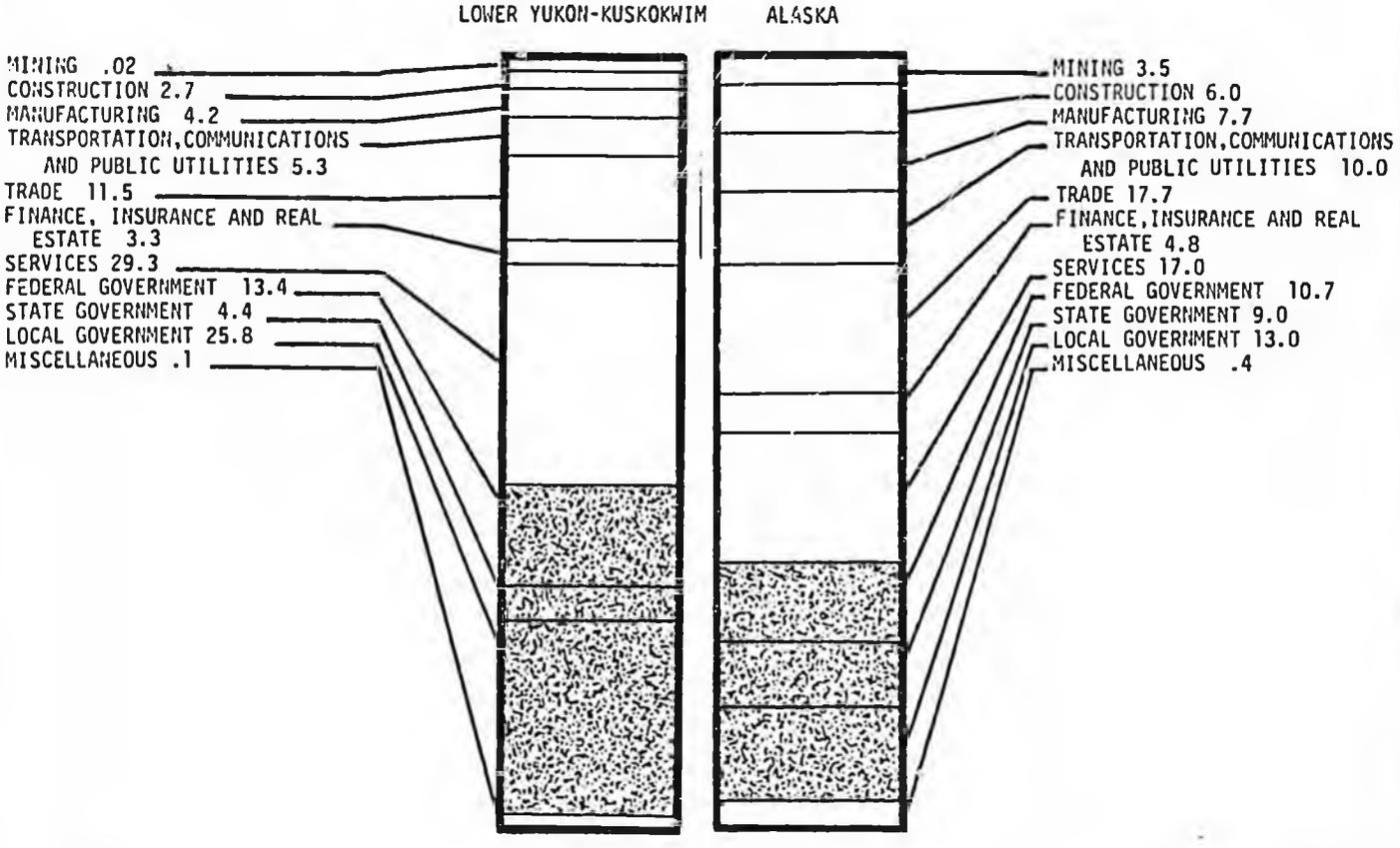
Source: Alaska Department of Community and Regional Affairs

Federal and state government employment remains very stable during the year in contrast to local government employment which declined significantly during the summer fishing season of 1979. Some positions have been funded with the intention that participation in fishing is an important part of the regional lifestyle and economy. The average monthly wage for state and federal positions is much higher than that for local government jobs since the state and federal positions tend to be long term positions while local government positions tend to be shorter term.

The availability of government funded positions provides the most important source of income for the region. The expectation is that as long as the need exists for the provision of health, social and educational services, this sector will continue to grow. The dependence on one source of income creates concern, however, since state and federal funds may be more restricted in the future. Government employment provides one of the few growth opportunities in the basic sector, but a more diversified economy is recognized as a desirable and necessary goal.

Figure 10

1979 Covered Industry Employment as a Percentage of Total Employment for the Lower Yukon-Kuskokwim Region and Statewide



CRAFTS INDUSTRY POTENTIAL AS A SOURCE OF INCOME

In an area with a scattered population, an industry which enhances village life and utilizes the regions best resource -- its people -- would be uniquely attractive. The traditional arts and crafts of this area are currently of significant interest to collectors and students of Alaskan cultures. An effort to enhance the production and distribution of these traditional art forms, with the intent of establishing a more stable economic base in the villages, merits serious consideration.

The typical village craftsperson is adapting the traditional skills, born of necessity and cultural influence, to production of a commodity in a cash economy. There is a difference in emphasis and time commitment between producing utilitarian, subsistence implements and producing a steady, marketable supply of goods to meet the needs of ones family. Village craftspeople today do not generally fall into either the category of creating solely for their own needs or solely to provide a steady money source. As with most elements of life in the villages today, the craftspeople are in transition, attempting to bridge the "culture gap" created by the accelerating changes in their area. Marketing difficulties arise directly out of this transition factor, and must be examined sensitively and with an appreciation of the fact that to encourage mass production of these crafts is to diminish their value to both creator and purchaser. Nonetheless, it is necessary to examine what some of the difficulties are in attempting to stabilize the village economies through production and sale of native arts and crafts.

Many village craftspeople expect and even need payment for their goods immediately. Shipping works to galleries, which mainly handle items on consignment, does not offer a very workable option to most of these craftspeople. However, consumer traffic through most of the villages is not heavy enough to provide consistently good prices for the work, nor do many villagers have the opportunity or resources to spend extended periods of time in population centers which would expand the number of consumers. Because the options open to the artist or craftsperson are so recognizably limited, prices are often much lower than their market value in one of the urban centers (absurdly lower in many cases). However, the craftsperson is often more willing to take cash for an item, even very little cash, than to wait for galleries in urban centers to sell the item and then send the money owed. Due to the remoteness of most of these villages, a craftsperson has little control over transactions with galleries or merchants and so the risk of sending work out seems high.

There are today several organizations which are focusing attention on the value and importance of encouraging Alaska native craftspeople. Although their concern is the arts and crafts themselves rather than marketing, they are important because of the financial and professional support they provide native arts and craftspeople who are involved in establishing themselves professionally.

The Institute of Alaska Native Arts, Inc. a nonprofit corporation formed

in 1976, is a statewide advocacy and education organization located in Fairbanks. They provide technical assistance geared toward the business of being an artist.

The Alaska State Council on the Arts is initiating a pilot apprenticeship program in traditional native arts. Four apprenticeships have been awarded at this time. The Alaska State Council on the Arts, with the Alaska State Museum, also sponsors the Native Art Competition. Cash awards are given and purchases are made, recognition is given through articles and newsletters, and the competition winners are included in a traveling exhibit.

While these kinds of support are necessary and important in stimulating interest, pride and awareness of the arts the problem of marketing the work of the many village craftspeople remains. Recognizing this problem, the State Legislature during the 1980 session funded a grant for a Native arts and crafts marketing program.

The program was funded through the Department of Commerce and Economic Development, which awarded the one year contract on a competitive bid basis. The Alaska Native Foundation was awarded a $150,000 sum in early FY 81 to carry out a marketing program.

A.N.F. has targeted Mekoryuk, Chevak, and Hooper Bay as pilot villages. After an extensive survey of the communities to identify the artists, over 1000 photographs were taken documenting the artists, their environment and processes used. From these resources promotional material is being developed. Some works have been purchased for exhibit to stimulate interest in the craftspeople and in the public. A collection of traditional and contemporary native work has been tentatively scheduled for exhibit next year at the Nordjylands Kunstmuseum in Aalborg, Denmark.

The project director attended the annual meeting of the Canadian Arctic Co-operative Limited in Frobisher Bay, N.W.T. This Canadian cooperative has been evolving for 25 years and is now internationally known. The A.N.F. staff has studied their efforts and prior efforts in Alaska to identify reasons for successes and failures. In the process of marketing crafts the Canadian Cooperative has created other jobs related to the Co-op. The Cape Dorsett co-op currently employs 50 people.

The A.N.F. program has targeted the collector as the primary purchaser, rather than the impulse or casual tourist buyer, reasoning that these crafts will not be "low end" items in the price spectrum. A.N.F.'s plan is to form a village co-op based on the Canadian program. The co-op would serve as focal point for buyers and sellers. The Canadians, having found that lack of local support and cohesion contributed to failure of earlier programs, has a manager in each co-op. The manager handles quality control and problems related to the co-op in the village. Membership in the co-op is through donation of one piece of work which is purchased providing working capital and thus immediate cash flow within the co-op.

The importance of long term commitment of the Canadian government with local control and the success of Canadian Arctic Co-operative Limited are inseparable. Programs of this type take a great deal of time to mature

but in the end may be the perfect vehicle for preserving village life and individual integrity. These help provide an economically and environmentally sound industry which fits easily into the social network of the community. A.N.F. believes that such a program will work in Alaska if approached with patience and adequate suport.

As pointed out earlier economic opportunity is highly limited in the culturally rich Lower Yukon-Kuskokwim region. Wage employment is an important but relatively minor source of livelihood for the regions population. A partial solution to the short range economic problems of the area may well lie with the promotion and further development of culturally based craft activities.

SUMMARY OF EMPLOYMENT AND INCOME

Figure 10 shows the relative importance of each industrial sector clearly showing the importance that government plays in the wage and salary portion of the economy. Wages and salaries comprise about 70 percent of the total personal income in the Bethel census division and 75 percent of personal income in the Wade Hampton census division. Additional sources of income include self-employed income (such as from fishing, crafts, trapping, rents), social security payments, unemployment compensation, state and Bureau of Indian Affairs cash assistance and the food stamp program.

TABLE 2

Statewide rank out of 29	Per Capita Personal Income 1979	
26	Bethel Census Division	$5772
29	Wade Hampton Census Divsion	2737
28	Kuskokwim Census Division	3929
	Alaska	$11152

Source: U.S. Department of Commerce
Bureau of Economic Analysis

Total wages for the Bethel and Wade Hampton census divisions, which exclude certain portions of the Lower Yukon-Kuskokwim region, were approximately $51 million in 1979. It has been estimated that at least $8 million per year is distributed in the form of Association of Village Council Presidents social services funds, Bureau of Indian Affairs Assistance, State public assistance through the Department of Health and Social Services and the food stamp program. Unemployment insurance payments for 1979 in Bethel and Wade Hampton totalled more than $920,000.

Fishing for commercial and subsistence use provides additional income and nutritional support to the region. Total commercial harvest earnings for the Kuskokwim area of the Arctic-Yukon-Kuskokwim Region was over $2.7 million in 1980 from a commercial catch of over one million fish. The subsistence harvest was more than 225,000 fish for this same region, according to the Alaska Department of Fish and Game, Division of Commercial Fisheries. Hunting, trapping and crafts are additional activities that provide some income and provide for personal needs.

Nearly one half of all jobs and nearly 60 percent of all reported earnings are directly associated with the government sector. Most other employment is the result of the economic activity generated from the government employment. The other major sources of income and livelihood are fishing, fish processing, crafts and subsistence activity.

The economy is geared toward provision of services to a low income, relatively densely populated region. The needs of the region will continue and the services provided are expected to continue as long as there are still unmet social, health and educational needs.

Growth in the economy depends upon the resources available. Expansion of the fish processing industry is possible but is limited by the available resource and the cost. The harvesting of underutilized species of fish is a possibility but the full potential of the bottomfish industry has not been realized in even the most resource plentiful and efficient locations.

Perhaps the area's greatest resource has been its least utilized. That resource is a large, unemployed, fairly well educated labor force which has displayed a great interest in participating in the cash economy. Given the lack of major unexploited natural resources, realizing the full potential of the population will be a major challenge for Alaska's policy makers.

PART II RURAL UNEMPLOYMENT — A CLOSER LOOK

The Alaska Department of Labor - Research and Analysis section develops current estimates of employment and unemployment on a monthly basis. These estimates are produced in accordance with strict methodological procedures established by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). From these "official" labor force estimates, rates of unemployment are calculated which allow direct comparisons of economic conditions for various areas within a state or between states. Even though area unemployment rates published by Research and Analysis are carefully developed, periodically reviewed and sanctioned by BLS; their accuracy has been seriously questioned by various individuals and organizations. The most severe criticism comes from rural areas of the state and is usually based on the contention that the published rates far understate the "real" level of unemployment.

Until State funding was provided this year to allow an on-site investigation of rural unemployment, it was impossible to conduct a field study needed to document the accuracy (or inaccuracy) of published labor force estimates. This project has not only allowed such an analysis, but has provided sufficient information to partially determine where problems areas lie and possible methods of improving upon existing labor force estimating techniques.

This section of the report contains three distinct parts. The first part describes the labor force estimating process, including definitions of labor force components; a description of data sources used, and presentation of a set of estimates for Alaska. The second part compares the findings of a January household survey conducted in the Wade Hampton census division to independent estimates as routinely prepared for monthly publication. It also offers and describes an alternative definition of unemployment which may be more appropriate for Alaska, particularly in rural areas. Finally, detailed survey findings which are generally not available outside of decennial census reports are briefly discussed and presented.

CURRENT EMPLOYMENT AND UNEMPLOYMENT DEFINITIONS AND ESTIMATING PROCESS

It is obvious that the terms "employment" and "unemployment" mean different things to different people. Many grant applications to Federal and State agencies for funding of various local projects contain not one, but several unemployment rates for a given area. The usual practice is to cite the most current "official" Department of Labor unemployment rate (for most Federal grants and contracts this is the only acceptable rate), and then go on to explain that "actual" unemployment rates go much higher than "official" estimates indicate. Unofficial estimates, usually put forth by the applicants themselves, are often pegged as high as 80 to 90 percent. There is no doubt that pockets of extremely high unemployment do exist and rates of unemployment for small geographic areas are much higher than levels estimated for the overall region in which they are contained. But much of the confusion and disagreement over rates of unemployment centers on the concept of unemployment itself. To some, and in the broadest sense, unemployed may mean anyone who is not working at a paying job. As discussed below the estimates of unemployment produced in accordance with BLS guidelines uses a much narrower definition.

The Bureau of Labor Statistics is responsible for providing technical assistance and methodological structure for state agencies who prepare labor force estimates. In recent years, the labor force estimating methodology provided by BLS has been modified to make estimates prepared by the individual states more comparable and internally consistent. The revised methodology contains two parallel techniques for estimating employment and unemployment. The first is a "Handbook" method using administrative U.I. claimant data and place of work employment survey data. The second is a household survey producing statewide employment and unemployment estimates. This household data is provided by the U.S. Bureau of Census which conducts a nationwide (by state) household survey known as the Current Population Survey (CPS). This survey contains questions relating to the labor force status of the working age population (persons age 16 or older). The BLS estimating methodology is designed to incorporate standard labor force concepts and definitions used in the CPS. In their labor force classification scheme, a person 16 years of age or older is considered "employed", if she/he did any work for pay or profit in a business or farm during the reference week, or worked 15 hours or more as an unpaid family worker, or had a job from which she/he was temporarily absent because of illness, bad weather, vacation, or labor-management dispute;

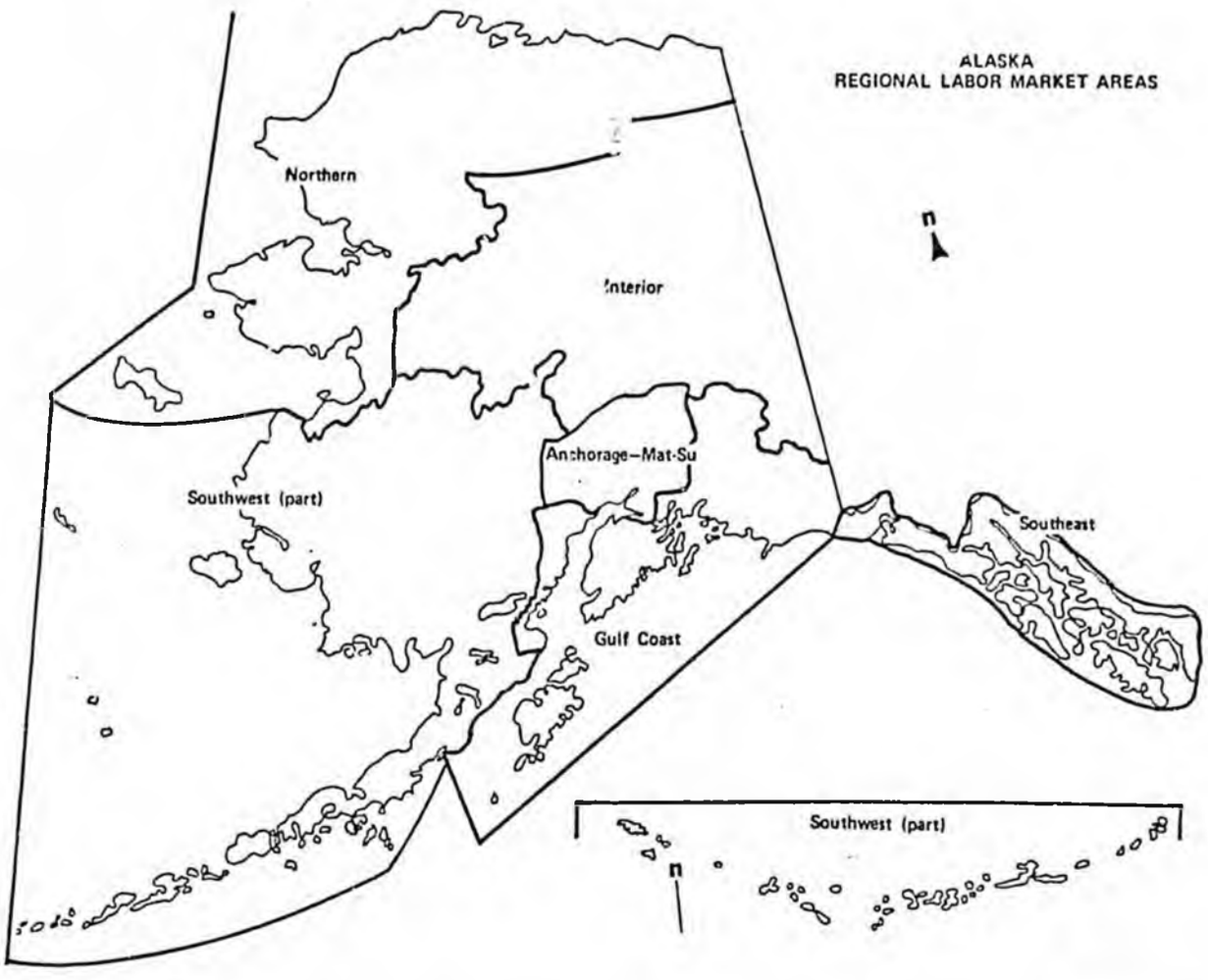
"unemployed", if she/he had no employment during the reference week, was available for work, and actively sought work at any time in the past 4 weeks, was waiting to be called back to a job from which she/he was laid off, or was waiting to report to a new wage or salary job scheduled to start within the next 30 days;

not in the labor force, if neither "employed" nor "unemployed". The unemployment rate is the proportion of the labor force that is unemployed (i.e. unemployment divided by the total labor force, where the labor force is the employed plus unemployed). The monthly labor force estimates published by the Alaska Department of Labor are based upon the foregoing definitions.

Thus, employment figures reflect estimates of the number of people who worked for 1 hour or more during the reference week, while unemployment estimates concern primarily those who actively sought work within the last four weeks.

Those persons who have not actively sought work (even though they may have wanted to work) are considered out of the labor force and therefore would not appear within the estimates of unemployed persons. It is this fairly narrow

Figure 11



definition of unemployed that accounts for much of the perceived difference between published rates of unemployment and the proportion of people not gainfully employed to which some refer to as "unemployed". This difference is most pronounced in areas where there are few employment opportunities and large segments of the working age population don't bother to actively seek work. This will become more clear through the discussions of survey findings contained in the next sections.

TABLE 3

LABOR FORCE BY REGION AND CENSUS DIVISION

	Labor Force			Unemployment			Rate			Employment		
	p/ 1/81	r/ 12/80	1/80	p/ 1/81	r/ 12/80	1/80	p/ 1/81	r/ 12/80	1/80	p/ 1/81	r/ 12/80	1/80
ALASKA STATEWIDE	177101	182009	167588	19458	18075	16689	11.0	9.9	10.0	157643	163934	150899
ANCHORAGE-MATSU REGION	86980	89356	84016	7611	7103	7065	8.8	7.9	8.4	79369	82253	76951
ANCHORAGE	78216	80408	75468	6265	5842	5709	8.0	7.3	7.6	71951	74566	69759
MATANUSKA-SUSITNA	8764	8948	8548	1346	1261	1356	15.4	14.1	15.9	7418	7687	7192
GULF COAST REGION	20443	20819	18973	3120	2762	2361	15.3	13.3	12.4	17323	18057	16612
CORDOVA	1084	1098	1002	152	126	108	14.0	11.5	10.8	932	972	894
KENAI	10406	10560	9861	1659	1443	1473	15.9	13.7	14.9	8747	9117	8388
KODIAK	4524	4694	4073	578	581	289	12.8	12.4	7.1	3946	4113	3784
SEWARD	1541	1536	1356	311	254	177	20.2	16.5	13.1	1230	1282	1179
VALDEZ	2888	2931	2681	420	358	314	14.5	12.2	11.7	2468	2573	2367
INTERIOR REGION	23878	24729	22827	3264	3230	3098	13.7	13.1	13.6	20614	21499	19729
FAIRBANKS	19398	20085	18556	2561	2524	2441	13.2	12.6	13.2	16837	17561	16115
SOUTHEAST FAIRBANKS	1979	2033	1885	272	253	253	13.7	12.4	13.4	1707	1780	1633
UPPER YUKON	564	578	527	126	122	108	22.3	21.1	20.5	438	456	419
YUKON-KOYUKUK	1937	2033	1858	305	331	296	15.7	16.3	15.9	1632	1702	1562
NORTHERN REGION	8108	8035	7413	817	673	669	10.1	8.4	9.0	7291	7362	6744
BARROW-NORTH SLOPE	2113	2095	1950	149	111	133	7.1	5.3	6.8	1964	1984	1817
KOBUK	2545	2540	2343	280	252	247	11.0	9.9	10.5	2266	2288	2096
NOME	3449	3400	3120	388	310	289	11.2	9.1	9.3	3061	3090	2831
SOUTHEAST REGION	27969	28703	25557	3542	3291	2637	12.7	11.5	10.3	24427	25412	22930
ANGOON	392	394	350	84	74	61	21.4	18.8	17.4	308	320	289
HAINES	956	980	816	188	181	95	19.7	18.5	11.6	768	799	721
JUNEAU	9708	10035	9020	832	799	687	8.6	8.0	7.6	8876	9236	8333
KETCHIKAN	6037	6139	5465	867	761	612	14.4	12.4	11.2	5170	5378	4853
OUTER KETCHIKAN	733	747	638	154	145	95	21.0	19.4	14.9	579	602	543
PRINCE OF WALES	1368	1398	1255	234	218	190	17.1	15.6	15.1	1134	1180	1065
SITKA	3981	4112	3684	402	389	324	10.1	9.5	8.8	3579	3723	3360
SKAGWAY	1459	1513	1359	201	205	179	13.8	13.5	13.2	1258	1308	1180
WRANGELL-PETERSBURG	3335	3385	2980	580	519	394	17.4	15.3	13.2	2755	2866	2586
SOUTHWEST REGION	9723	10367	8792	1104	1016	859	11.4	9.8	9.8	8619	9351	7933
ALEUTIAN ISLANDS	2346	2543	2179	133	142	142	5.7	5.6	6.5	2213	2401	2037
BETHEL	3149	3354	2795	452	428	313	14.4	12.8	11.2	2697	2926	2482
BRISTOL BAY BOROUGH	355	371	328	43	33	41	12.1	8.9	12.5	312	338	287
BRISTOL BAY	1456	1544	1322	134	110	105	9.2	7.1	7.9	1322	1434	1217
KUSKOKWIM	886	926	816	140	117	130	15.8	12.6	15.9	746	809	686
WADE HAMPTON	1531	1629	1352	202	186	128	13.2	11.4	9.5	1329	1443	1224

p/=Preliminary r/=Revised 1980 Benchmark

Federal guidelines require the use of unrounded labor force data, adjusted to be consistent with the Current Population Survey (CPS) in formulas used to allocate federal funds. Comparisons between different time periods are not as meaningful as other time series published by the Alaska Department of Labor; because Alaska's CPS sample size is inadequate to accurately indicate monthly changes in level. The sampling errors are random in nature; meaning that the unemployment rates, in any given month, are as likely to be high as frequently as they are low. The official definitions of unemployment, currently in place, exclude anyone who has made no attempt to find work in the four week period up to and including the week that includes the twelfth of each month. Most economists feel that Alaska's bush localities have proportionately more of these discouraged workers.

The methodologies used to develop monthly employment and unemployment estimates are quite detailed, very involved and extremely difficult to explain in simple terms. Employment and unemployment is estimated separately for the state as a whole and six regions that geographically exhaust the state (see table 3 and figure 11). These estimates are derived following the BLS Handbook procedures and are "adjusted" by Current Population Survey (CPS) results.

Several sources of data are used to develop the monthly employment estimates (see table 4). The primary source is information collected through a monthly survey of employers by the Current Employment Statistics (CES) program. Through this program, employers report the number of employees on their payroll during the reference week (other related information is collected as well). While this is the most comprehensive and current source of employment information available, it is sample data and as such is subject to limitations. For example, only recently has the sample been strong enough to allow development of employment estimates for regions other than Anchorage and Fairbanks. The CES data is extrapolated and augmented with 1970 Census of Population employment ratios needed to estimate some catagories of employment not obtained through the CES survey (e.g. self-employed individuals, domestic workers, etc).

Unemployment estimates are developed by using unemployment insurance claims data and 1970 Census of Population characteristics information (see table 4).

The claims data provides current information regarding numbers of unemployed who have had fairly recent employment experience. The Census data is used to estimate the numbers of unemployed who do not qualify or file for unemployment insurance benefits. In the Handbook procedures, the estimates of unemployed are built up from claims information which concerns the "experienced unemployed" and BLS/CPS data which provides relationships which help identify levels of "new and reentrants" to the labor force (e.g. former students, those temporarily withdrawn from the labor market for health or other personal reasons etc.)

In addition to the data sources used to develop the Handbook estimates of employment and unemployment, monthly household survey data is provided through the Current Population Survey (CPS). In Alaska, CPS data is gathered from both urban and rural areas through a sample of approximately 750 households. The monthly labor force characteristics obtained through this survey are applied to an annual estimate of total statewide population to derive "control totals" of statewide employment and unemployment. At the statewide level, the monthly Handbook estimates of employment and unemployment are adjusted to the CPS control totals. This adjustment process was introduced into to the estimating process in order to "....establish consistent labor force estimates from state to state and comparability with the national measure of employment and unemployment."

The six regional estimates for Alaska are summed and proportionately adjusted such that their sum matches the adjusted state totals. Estimates for Alaska's census divisions are derived through a disaggregation process. That is, the employment estimate for a region is allocated to the census divisions that comprise that region on a direct population ratio basis. In Alaska, each region's estimated unemployment is currently allocated to individual census divisions on the basis of their respective population levels (for new and re-entrants to the labor force) and unemployment insurance claims in the case

of experienced unemployed. This is a very simplified description of the process used to develop monthly labor force estimates similar to those shown in table 3 for the month of January 1981.

TABLE 4
DATA SOURCES USED TO DEVELOP CURRENT LABOR FORCE ESTIMATES

Data Sources	Frequency	Time Lag	Data Provided by this Source	Limitations of the Data Source
EMPLOYMENT:				
-Current Employment Statistics (CES)	Monthly	one month	Employment by place of work	Subject to sample limitations. Useful at Statewide and 6 regions only.
-Employer U.I.contributions reports	Quarterly	6-9 months	Wage and salary Employment by place of work.	Contains only employment covered by state and Federal Unemployment Insurance laws. May contain double counts. Dated information.
-Census of Populations	Decennial	1970 data	Employment by place of residence. Contains all employment whether or not covered by State U.I. Laws. Social and economic characteristics of the employed. Used in conjunction with place of work statistics, provide insights to work commuting patterns.	Extremely dated information.
-Current Population Survey	Monthly	one month	Estimate of statewide employment.	Subject to sample limitations. Benchmarked to an annual estimate of total population. Statewide data only.
UNEMPLOYMENT:				
-Unemployment Insurance claims data	Monthly	one month	Individual count of claimants by detailed area.	Concerns only those individuals who have had covered employment Does not contain information on those monetarily ineligible, delayed filers, nonfilers, exhaustees, new entrants or reentrants to the labor force.
-Census of Population	Decennial	1970 Data	Age of population-used to infer levels of new and reentrants to the labor force.	Extremely dated information.
-Current Population Survey	Monthly	one month	Estimate of Statewide Unemployment.	Subject to sample limitations Benchmarked to an annual estimate of total population. Statewide data only.

NOTE: In addition to these data sources, the Bureau of Labor Statistics periodically provides factors used in the estimating process (some of these factors are derived from national data sources).

LABOR FORCE ESTIMATES: COMPARISON TO A HOUSEHOLD SURVEY

OVERVIEW

In the previous section the process currently used by the Department of Labor to estimate employment and unemployment was described and the most current set of labor force estimates was presented (Table 3). As noted before, there are disparate views as to the levels of unemployment that exists in Alaska, especially with regard to the more remote areas of the state. What accounts for the vast differences between published unemployment rates and the extremely high unofficial rates quoted by local agencies? This question can largely be answered by taking a closer look at an area for which estimates have been developed and comparing those estimates to actual counts for the area. The comparison of data from an exstensive household survey of the Wade Hampton Census Division to independent labor force estimates for Wade Hampton is the subject of this section.

Other than the Decennial Censuses there is no ongoing source of information which provides detailed labor force characteristics for sub-state areas in Alaska. As outlined in the last section, there are data series which have been developed explicitly for the purposes of estimating current employment and unemployment (e.g. the current employment statistics program and the current population survey). Other sources utilized are administrative data, population estimates and census information. As also noted in the previous section, all of these information sources are used to build estimates which conform to standard labor force concepts and definitions. It was suggested that the standard concept of "unemployed" is quite narrowly defined. The principal assumption used in our investigation of "real unemployment" were that divergent views regarding the extent of unemployment was largely based upon differing opinions as to what unemployment was. If this was a definitional problem what was needed was sufficient information on the labor force status, characteristics, and attitudes of the working age population such that alternative definitions of unemployed could be developed and quantitatively measured. In addition, specific information would be needed to measure the accuracy of the existing labor force estimating procedures. The only avenue for generating the required information was through the conduct of a household survey.

Although the Lower Yukon-Kuskokwim region is comprised of the Bethel, Wade Hampton and lower part of the Kuskokwim census divisions, Wade Hampton was selected as the ideal area for in-depth study. The Kuskokwim division contained a vast amount of area and communities which could not be efficiently surveyed. In addition, the Kuskokwim census division is undergoing boundary changes for the 1980 census. The Bethel division contains the city of Bethel which by its comparatively urban nature would have offered less revealing information than a predominately rural area for which labor force estimates are the most difficult to accurately develop.

SURVEY METHODOLOGY

Characteristic data from the 1970 census showed that approximately 50 percent of Wade Hampton's total population was of working age (16 years and over). Using this relationship and 1980 census information the working age population for the census division was estimated to be 2,300. Due to time constraints and logistical problems expected in trying to select and survey a random sample of households in all Wade Hampton communities a decision was made to instead comprehensively survey all households in a few selected locations . The goal was to obtain a usable sample equal to approximately 50 percent of the census division's working age population (about 1,200 individuals). In all, nine communities were surveyed; three small, three medium and three large.

Nineteen bilingual interviewers were hired through a contractual agreement with the Association of Village Council Presidents (AVCP) headquartered in Bethel. In addition to locating and hiring interviewers, AVCP Employment and Training staff provided information, planning and project management assistance. The interviewers were residents of the communities they were to survey. They were brought to Bethel for one day of intensive training and immediately returned to begin their interviews.

Two AVCP staff members also attended the training sessions to provide assistance and, if necessary, to act as alternate interviewers.

The survey instrument used by the interviewers was a one page form which the interviewers filled out as the respondent answered their questions. Since the purpose of the survey was to gather information needed to determine the labor force status of the working age population, questions were asked (and reinforced) in a manner which automatically classified individuals as employed, unemployed or out of the labor force according to standard Current Population Survey (CPS) definitions (a sample survey form is shown on page 51). In fact, the questionnaire was closely patterned after the CPS survey form. Due to the use of a different questionnaire, minimally trained interviewers and a different data tabulation process; results from the Wade Hampton survey are not strictly comparable to the CPS. By contrast, interviewers of the Census Bureau receive long term and continuous training and the official CPS questionnaire is a highly sophisticated document developed with over 40 years of experience. Further, the Alaska Department of Labor survey was conducted neither under the auspices of or with the official sanction of the U.S. Census Bureau. However, the Census Bureau did provide extremely useful information which greatly aided in the conduct of the survey.

Summary statistics showing the population of the communities surveyed and the proportion of the working age population for which data was collected is displayed in table 5. Useable responses were obtained for a total of 1,412 individuals. The respondents comprised roughly 86 percent of the working age population of the nine communities surveyed. Over 90 percent of the estimated working age population was accounted for in six of those communities. This indicates that, in general, the interviewers were quite thorough. In terms of the entire census division, 61 percent of the estimated working age population was represented in the sample.

TABLE 5
SUMMARY STATISTICS - SURVEY OF WORKING AGE POPULATION

Surveyed Communities	Total 1980 Population	Percent of Census Div.	Population 16 + Yrs.*	Survey forms Completed		
				Number	% of Total Village Pop.	% of Working Pop. Age
Hooper Bay	624	13.5%	312	314	50.3%	100.0%
Emmonak	530	11.5%	265	149	28.1%	56.2%
Alakanuk	523	11.3%	261	165	31.5%	63.2%
Chevak	466	10.1%	233	223	47.9%	95.7%
Pilot Station	330	7.1%	165	141	42.7%	85.5%
Kotlik	291	6.3%	146	154	52.9%	100.0%
Fortuna Ledge	261	5.6%	130	147	56.3%	100.0%
Russion Mission	169	3.7%	85	79	46.7%	92.9%
Pitkas Point	88	1.9%	44	40	45.5%	90.9%
Total Surveyed Communities	3,282	71.0%	1,641	1,412	43.0%	86.0%
Wade Hampton Census Div.	4,622	100.0%	2,311	1,412	30.6%	61.0%

* Estimated assuming 50% of total census division population is age 16 and over.

GENERAL SURVEY FINDINGS

Data tabulations for all survey respondents indicate that Wade Hampton residents were predominately Eskimo (93 percent). Whites accounted for 5.5 percent of the respondents. American Indians and Aleuts accounted for less than one percent. Males numbered 746 (53 percent) and Females 651 (46 percent). By comparison, 1970 Census information shows this area's working age population was comprised of 55 percent males and 45 percent females. Preliminary 1980 Census counts show that Alaska Natives comprised 93.2 percent of Wade Hampton's total population while Whites accounted for 6.3 percent.

Census data for 1970 showed Wade Hampton's total labor force participation rate (i.e. the proportion of the working age population that is in the labor force) to be 30.5 percent. Survey data indicate an increase in the participation rate to 49.2 percent. Using standard labor force definitions, 696 of the survey respondents were in the labor force and 719 were classified as not in the labor force. Individual counts of respondents may not total 1,412. In some cases individuals did not respond to some questions. Similarly, minor key entry errors created a few double counts. Of the total labor force of 696, those employed totaled 524 while those unemployed numbered 172; which yields an unemployment rate of 24.7 percent. As shown in table 3, the official preliminary unemployment rate estimated for the Wade Hampton census division for January 1981 is 13.2 percent. This rate is based upon an estimated labor force of

1,531, with 1,329 of the labor force employed and 202 unemployed. Thus, the official unemployment rate estimated for Wade Hampton is roughly half that found through an extensive household survey of the area. Why does such a difference exist when both methods used the standard labor force concepts and definitions? Part of the difference could be a result of weaknesses in the survey process itself. However, if random errors exist in the survey process, it is just as likely that the survey understated the true level of unemployment as overstated it. The most reasonable suggestion is that there are major weaknesses in the method used to derive labor force estimates at the census division level.

If survey data is extrapolated to reflect labor force estimates for the Wade Hampton census division, the number of people in the labor force would total 1,141; with 859 being employed and 282 unemployed. (Since employment and unemployment are increased proportionately, the unemployment rate remains at 24.7 percent.) Table 6 compares Wade Hampton's January 1981 preliminary labor force estimates to the survey findings.

TABLE 6
COMPARISON OF LABOR FORCE ESTIMATES TO EXTRAPOLATED SURVEY RESULTS
FOR WADE HAMPTON CENSUS DIVISION - JANUARY 1981

	Labor Force	Employment	Unemployment	Unemployment Rate
Official Labor Force Estimates (Preliminary)	1,531	1,329	202	13.2%
Survey Findings	1,141	859	282	24.7%
Difference	390	470	-80	
Percent Difference	+34%	+55%	-28%	

This comparison indicates an overestimate of employment and an underestimate of unemployment, which has a depressing effect on the unemployment rate. As discussed previously, employment and unemployment at the census division level is derived through a disaggregation process. Employment being allocated on the basis of population only, assumes equal proportions of the population are employed throughout an entire region. Intraregional differences in labor force participation rates and unemployment rates suggest that this is a faulty assumption. Employment to population ratios based upon 1970 census data is perhaps a more logical allocator of regional employment estimates. If the regional employment were allocated on the basis of employment to population ratios (applied to the most current population estimates) the difference between estimated employment and survey findings is significantly narrowed. Table 7 presents revised labor force estimates for Wade Hampton if employment were allocated by this alternative process.

TABLE 7
COMPARISON OF LABOR FORCE ESTIMATES TO EXTRAPOLATED SURVEY DATA (USING ALTERNATIVE EMPLOYMENT DISAGGREGATION METHOD) - WADE HAMPTON CENSUS DIVISION, JANUARY 1981

	Labor Force	Employment	Unemployment	Unemployment Rate
Preliminary Labor Force Estimates	1,203	1,001	202	16.8%
Survey Findings	1,141	859	282	24.7%
Difference	62	142	-80	
Percent Difference	+5%	+17%	-28%	

This shows that the allocation of regional employment estimates can be improved upon fairly easily. However, since labor force estimates must to be prepared in strict accordance with BLS approved methodologies, any changes to existing methods require BLS authorization. Initial consultations with BLS indicates that such a variance, supported with strong documentation provided through this study, may be granted.

It appears that there remains a significant problem with the estimated level of unemployment for Wade Hampton. The regional disaggregation of employment is a much simpler process than that used for unemployment. Since both claims data and detailed population data is needed to effectively allocate unemployment, additional study and consideration is needed in this area. Detailed 1980 Census characteristics may enable the development of such a process.

It is important to keep in mind that in spite of the extremely useful data provided, the Wade Hampton survey concerns only one geographic area at one point in time. Additional studies of a similar nature could go a long way toward providing essential information needed to improve upon present labor force estimating techniques.

A BROADER DEFINITION OF UNEMPLOYMENT

The foregoing discussion presented general survey findings including a thorough comparison of total labor force characteristics to published official labor force estimates. A methodological change was offered which appears to have the potential for improving upon existing estimating procedures. But as indicated in the beginning of this section, there still remains a wide discrepancy between published and unofficial unemployment rates. At this point we will depart from the conventional or standard labor force definitions and introduce a broader definition of unemployed.

The standard definition of "unemployed," by focusing primarily upon only those individuals who have actively sought work, excludes from the count of unemployed those people who are commonly referred to as "discouraged." This group of people have not actively sought work because they feel no jobs are available or they lack requisite skills or abilitites required by the job market. In rural areas of the state where job opportunities are limited, the discouraged may comprise a large component of the working age population. In addition, in the smaller communities those interested in working may not need to actively seek work since the informal informational network is quite effective. The people are often well aware of job opportunities in their local communities before they become available.

A strong case can be made for broadening the standard definition of unemployed to include discouraged individuals, particularly in rural Alaska. Even though individuals may not actively seek work where tight labor market conditions exist, they do represent an available worker pool and an under utilized resource. For those survey respondents who were initially considered not in the labor force, the question was asked "Does....want a regular job now, either full or part-time?" Based on the respondent's answer; the count of unemployed, and the number in the labor force, can be increased to include those who said they wanted a job. Table 8 shows labor force characteristics of survey respondents using the standard definition of unemployed as compared to the broader definition of unemployed.

TABLE 8
WADE HAMPTON LABOR FORCE CHARACTERISTICS BY CONVENTIONAL AND BROAD DEFINITIONS OF UNEMPLOYED JANUARY 1981 SURVEY RESULTS*

	Labor Force	Employment	Unemployment	Unemployment Rate
Conventional	1,141	859	282	24.7%
Broad	1,679	859	820	48.8%
Difference	538	0	538	
Percent Difference	47%	0%	191%	

*Survey results extrapolated to represent entire Wade Hampton census division.

The unemployment rate rises from 24.7 percent under the standard definition to 48.8% if broadly defined. The broad definition of unemployed could conceivably be expanded further by also including those individuals who responded "maybe - it depends" and "don't know" to the above question. If those people were also counted as unemployed the unemployment rate would rise slightly to a level of 54.3 percent. This broadest definition of unemployed is not well founded,

however. While 85 percent of those who said, "yes" they wanted a job, intended to look for work within the next 12 months; less than half those saying "maybe" and "don't know" intended to look for work within the next 12 months (see table A-12).

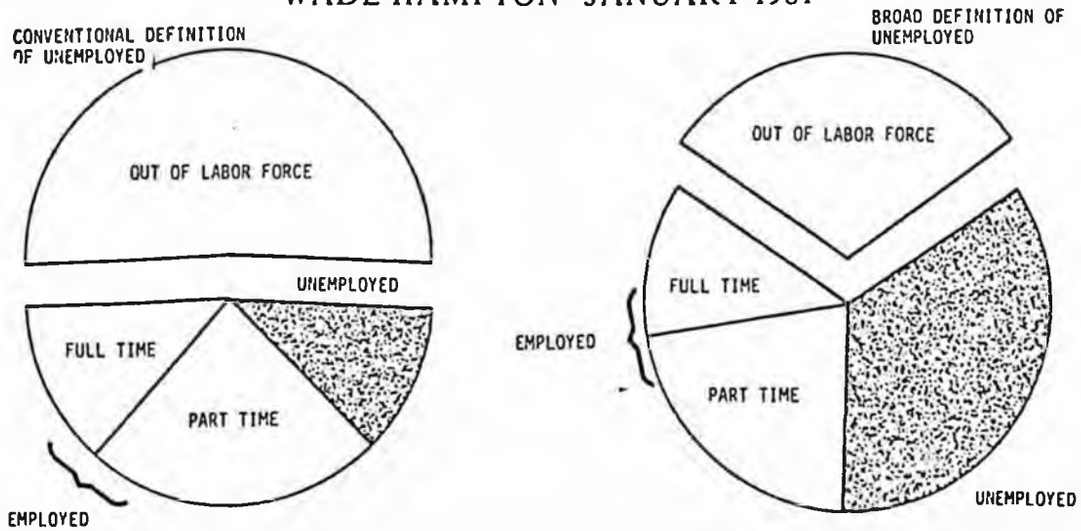
The broad definition of unemployed as described above may overstate the number of people who might actually take a job if one were available. There is probably a reluctance on the part of those surveyed to respond negatively to the inquiry, "Do you want a regular job now, either full time or part time?" This reluctance on the part of respondents is related to an awareness of the expectations of surveyors which may create an upward bias in the number of people included in our broad definition of unemployed.

In addition, the importance of subsistence activity should not be overlooked with regard to interest in employment and work attitudes. 82 survey respondents (5.8% of all those surveyed) said they spent most of the survey week engaged in subsistence activities in general with an additional 2.3% specifically listing trapping and craftsmaking as their major activity. Over one half of those engaged in subsistence activities who had not sought work during the last four weeks stated that they would accept a regular job, supporting the results of other studies which have found intermittent work patterns an important part of the lifestyle in many rural areas. Over one half of those unemployed or out of the labor force were keeping house or going to school.

As a final note, those interested in assessing the extent of underutilization of human resources should also consider the high proportion of individuals who work less than full time. (Recall, a person is considered employed if they worked one hour or more.) Obviously, some individuals desire part time work, such as those in school or individuals with family responsibilities. Table A-2 shows count of respondents by the reason they worked less than 35 hours during the survey week.

Figure 12

LABOR FORCE CHARACTERISTICS OF THE
WORKING AGE POPULATION
WADE HAMPTON JANUARY 1981



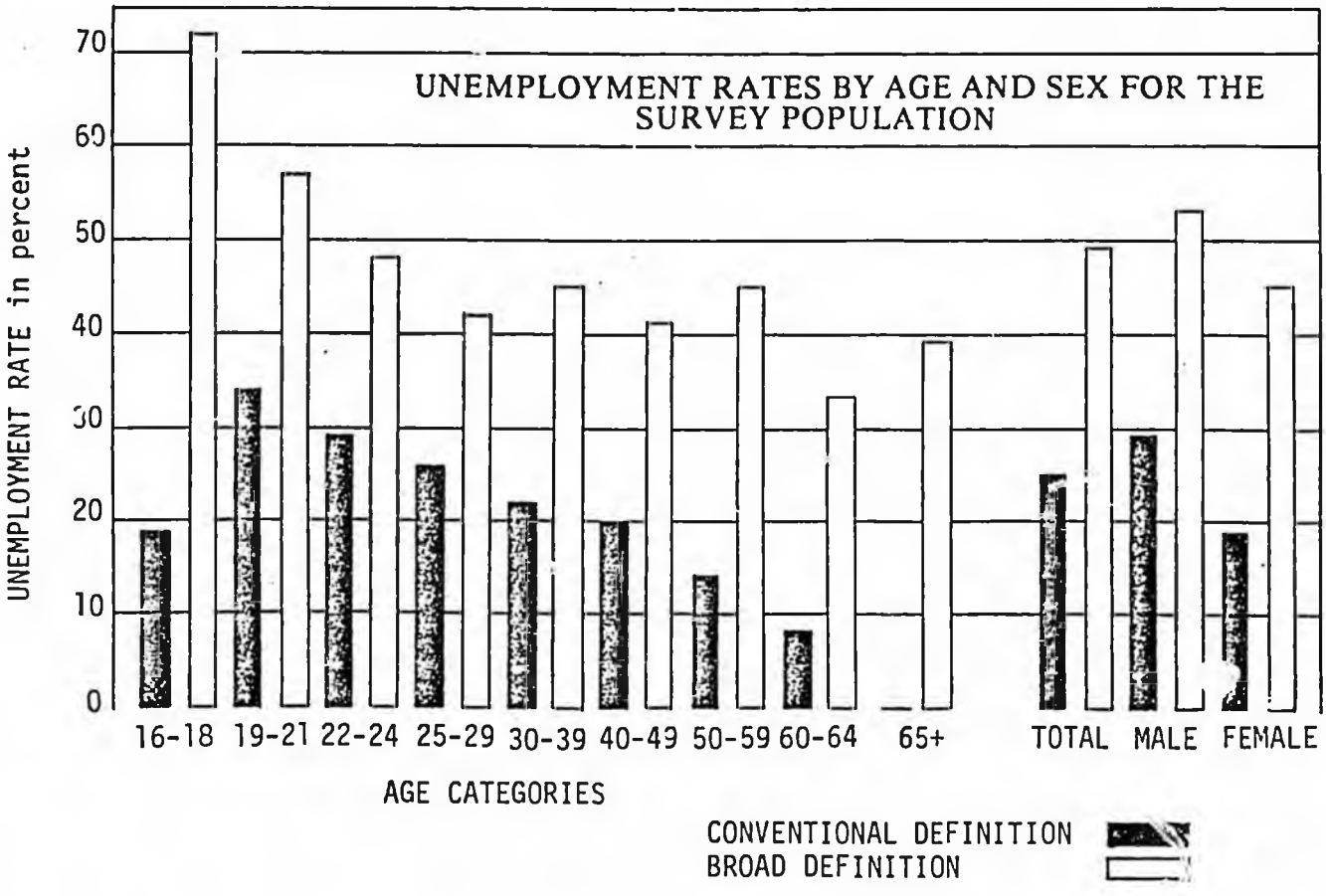
In sum, there is indeed a significant difference between unemployment rates which are developed using the standard definition of unemployed and using a broader definition which encompasses the "discouraged". Figure 12 pictorially represents the labor force characteristics of the working age population. Note that the broader definition of unemployed reduces the number of people considered not in the labor force by an amount equal to the increase in the number considered unemployed.

In the next section, detailed survey findings are presented. Comparisons of unemployment, using both the conventional and broad definitions, for different age groups and by sex are also included.

DETAILED SURVEY FINDINGS

The rural unemployment survey of 1412 household members over the age of sixteen in nine villages of the Wade Hampton census area provides a great deal of information regarding current activities and interest in working by sex and age groups of the working age population. All information provided on the survey

Figure 13



*If additional survey data would be helpful to information users, please contact Alaska Department of Labor, Research and Analysis.

form was encoded and entered by the Alaska Department of Labor on the University of Alaska Computer Network. Analysis of the data was made more meaningful and comprehensive through the use of cross tabulations which were necessary in order to determine, for example, the level of unemployment for males and females and for different age groups. The figures and tables included in this section are by no means a comprehensive selection but do provide some of the more interesting highlights from the survey.*

The conventional definition of unemployment used in this study considers as unemployed only those who are out of work and who have sought work during the last four weeks. Table 9 provides conventional unemployment rates for males and females and by age group as determined from survey results. Clearly, the unemployment rate for men is higher than that for women in the survey population due primarily to lower female laborforce participation rates

TABLE 9
CONVENTIONAL DEFINITION
SURVEY DATA

	Labor Force	Employed	Unemployed	Unemployment Rate	Out of Labor Force
Total Respondents	696	524	172	24.7%	719
Male	384	271	113	29.4%	366
Female	308	249	59	19.2%	351
Age Groups					
16-18	52	33	19	18.8%	108
19-21	101	67	34	33.7%	91
22-24	100	71	29	29.0%	47
25-29	116	86	30	25.9%	64
30-39	134	105	29	21.6%	91
40-49	95	76	19	20.0%	83
50-59	57	49	8	14.0%	103
60-69	13	12	1	7.7%	31
65+	8	8	0	0%	81

TABLE 10
BROAD DEFINITION
SURVEY DATA

	Labor Force	Employed	Unemployed	Unemployment Rate	Out of Labor Force
Total Respondents	1024	524	500	48.8%	391
Male	571	271	300	52.5%	179
Female	449	249	200	44.5%	210
Age Groups					
16-18	117	33	84	71.8%	43
19-21	154	67	87	56.5%	38
22-24	136	71	65	47.8%	11
25-29	147	86	61	41.5%	33
30-39	191	105	86	45.0%	34
40-49	128	76	52	40.6%	50
50-59	89	49	40	44.9%	71
60-69	18	12	6	33.3%	26
65+	13	8	5	38.5%	76

(i.e., less job seeking by those women without work). The highest level of unemployment is for the 19-21 age group with steady declines in the level of unemployment for the older members of the labor force. This is due to more work available for more skilled workers, greater interest in employment by younger members of the population and lower labor force participation rates for older members of the population.

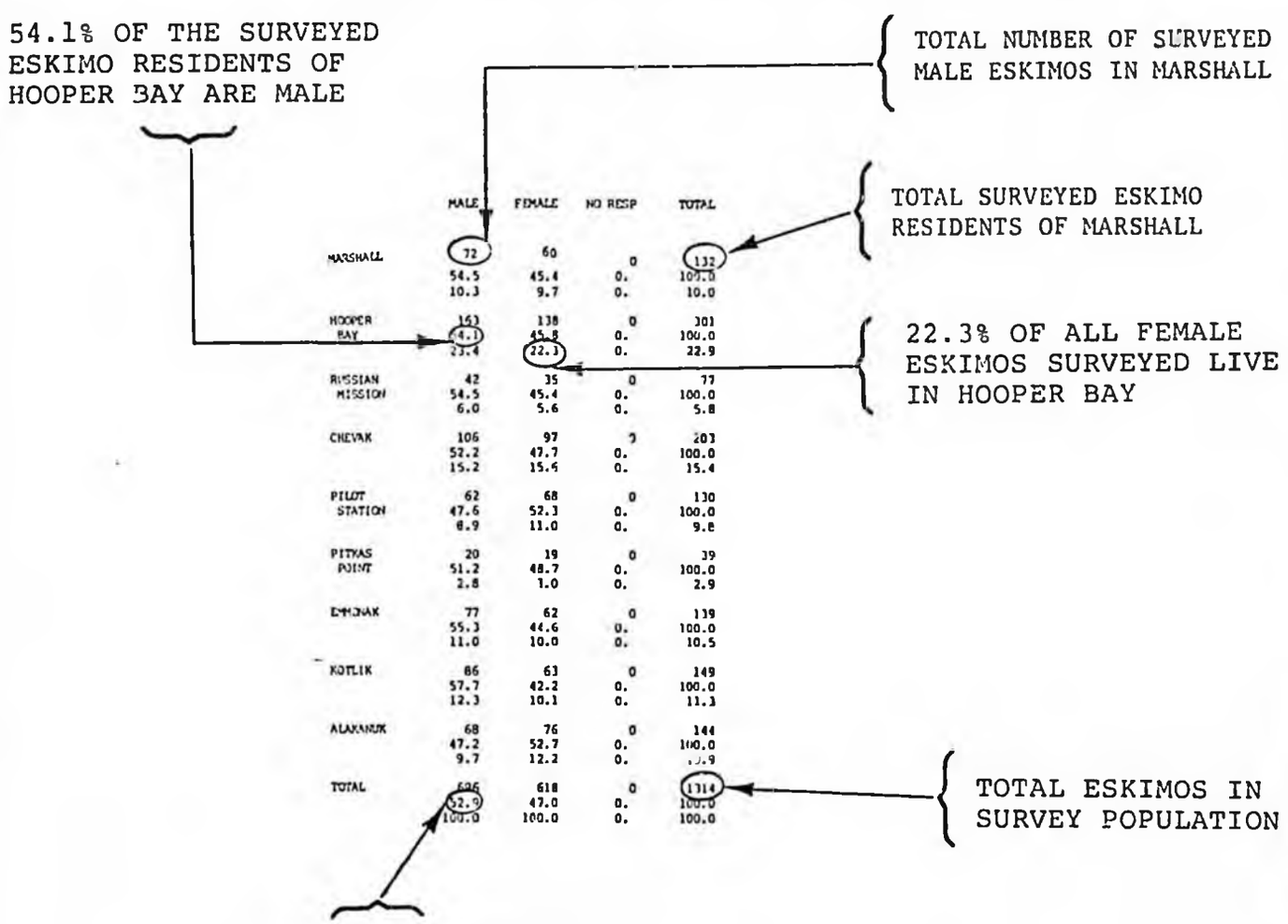
The broad definition of unemployment includes as unemployed those who have not sought work during the last four weeks but do want a job. The unemployment rate for all respondents jumps dramatically with the inclusion of what might be called "discouraged workers". (see table 10 and figure 13).

The unemployment rates for the youngest and oldest members of the population jump the most with the inclusion of those discouraged workers. The same general trend of lowering unemployment rates as the survey population ages is exhibited under both definitions, but is tempered to a certain degree in the broader definition. There is a great interest in work among the older population. These people are also the most discouraged or perhaps they are the most aware that few opportunities exist.

HOW TO READ A CROSS-TABULATION

When using a survey of this nature, far more meaningful results may be obtained by performing cross tabulations than can be produced by merely summing up the responses to individual questions. Cross tabulations enable relationships to be determined between different pieces of information. In addition, a third dimension may be added by controlling for a particular characteristic such as sex. The first cross tabulation in this appendix will serve as an example for the interpretation of tables A-2 through A-14.

TABLE A-1
FOR ALL SURVEYED ESKIMOS: VILLAGE OF RESIDENCE BY SEX OF RESPONDENTS



	MALE	FEMALE	NO RESP	TOTAL
MARSHALL	72	60	0	132
	54.5	45.4	0.	100.0
	10.3	9.7	0.	10.0
HOOPER BAY	163	138	0	301
	54.1	45.8	0.	100.0
	23.4	22.3	0.	22.9
RUSSIAN MISSION	42	35	0	77
	54.5	45.4	0.	100.0
	6.0	5.6	0.	5.8
CHEVAK	106	97	0	203
	52.2	47.7	0.	100.0
	15.2	15.6	0.	15.4
PILOT STATION	62	68	0	130
	47.6	52.3	0.	100.0
	8.9	11.0	0.	9.8
PITKAS POINT	20	19	0	39
	51.2	48.7	0.	100.0
	2.8	1.0	0.	2.9
EMMONAK	77	62	0	139
	55.3	44.6	0.	100.0
	11.0	10.0	0.	10.5
KOTLIK	86	63	0	149
	57.7	42.2	0.	100.0
	12.3	10.1	0.	11.3
ALAKANUK	68	76	0	144
	47.2	52.7	0.	100.0
	9.7	12.2	0.	10.9
TOTAL	696	618	0	1314
	52.9	47.0	0.	100.0
	100.0	100.0	0.	100.0

HIGHLIGHTS OF CROSS TABULATIONS

- 37% of those working were working full time with women comprising 48% of those who were working. (see table A-3)
- 26% of working women were working full time while 47% of working men were working full time. (see table A-3)
- Participation in terms of hours worked per week increases up to age 40-49 then declines. (see table A-4)
- 65% of unemployed job seekers (those actively looking for work) are men while 35% of unemployed job seekers are women. (see table A-5)
- 43% of male unemployed job seekers are looking for full time work while only 29% of female unemployed job seekers are looking for full time work. (see table A-6)
- 65% of unemployed job seekers are under 30. (See table A-5)
- Of those who want a job now, but aren't looking, 56% are under 30. (see table A-8)
- Of those who do not want a job now and are not looking, 70% are over 40. (see table A-8)
- Of those who do not want a job now and are not looking, 56% have not worked in over 5 years. (see table A-9)
- Of those not currently looking for work, 70% of those that want a job have worked during the last two years. 62% of this group are men. (see tables A-9 and A-10)
- Of those not currently looking for work, 56% of those who do not want to work now have not worked in at last 5 years. (see table A-9)
- Of those who do not want a job now and are not looking and have not looked for over 5 years, 42% are male. (see tables A-9 and A-10)
- Of those not currently looking for work, 26% do not want a job now and do not intend to look for work this year. (see table A-12)
- 39% of those not currently looking for work want a job now and intend to look for work during the next year. (see table A-12)

TABLE A-2
FOR ALL RESPONDENTS WHO WORKED JANUARY 11-17: HOURS WORKED AT ALL JOBS BY WHAT RESPONDENT WAS DOING MOST OF THE WEEK

	1-10	11-20	21-30	31-35	36-40	41+	NO RESP	TOTAL
WORKING	64	40	73	64	147	42	19	449
	14.2	8.9	16.2	14.2	32.7	9.3	4.2	100.0
	64.6	71.4	92.4	98.4	99.3	97.6	90.4	87.8
NOT AT WORK	0	1	0	0	0	0	0	1
	0.	100.0	0.	0.	0.	0.	0.	100.0
	0.	1.7	0.	0.	0.	0.	0.	0.1
LOOKING FOR WORK	1	0	0	0	0	0	0	1
	100.0	0.	0.	0.	0.	0.	0.	100.0
	1.0	0.	0.	0.	0.	0.	0.	0.1
KEEPING HOUSE	4	5	2	0	0	0	1	12
	33.3	41.6	16.6	0.	0.	0.	8.3	100.0
	4.0	8.9	2.5		0.	0.	4.7	2.3
GOING TO SCHOOL	19	7	4	0	0	0	1	31
	61.2	22.5	12.9	0.	0.	0.	3.2	100.0
	19.1	12.5	5.0	0.	0.	0.	4.7	6.0
UNABLE TO WORK	0	0	0	0	0	0	0	0
	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.
RETIRED	1	0	0	0	0	0	0	1
	100.0	0.	0.	0.	0.	0.	0.	100.0
	1.0	0.	0.	0.	0.	0.	0.	0.1
SUBSISTNCE ACTIVITY	0	0	0	0	0	0	0	0
	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.
OTHER	10	3	0	1	1	1	0	16
	62.5	18.7	0.	6.2	6.2	6.2	0.	100.0
	10.1	5.3	0.	1.5	0.6	2.3	0.	3.1
NO RESPONSE	0	0	0	0	0	0	0	0
	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL	99	56	79	65	148	43	21	511
	19.3	10.9	15.4	12.7	28.9	8.4	4.1	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-3
FOR ALL RESPONDENTS WHO WORKED JANUARY 11-17
HOURS WORKED AT ALL JOBS BY SEX OF RESPONDENT

	1-10	11-20	21-30	31-35	36-40	41+	NO RESP	TOTAL
MALE	48	25	34	24	95	29	9	264
	18.1	9.4	12.8	9.0	35.9	10.9	3.4	100.0
	48.4	44.6	43.0	36.9	64.1	67.4	42.8	51.6
FEMALE	51	31	45	40	52	13	11	243
	20.9	12.7	18.5	16.4	21.3	5.3	4.5	100.0
	51.5	55.3	56.9	61.5	35.1	30.2	52.3	47.5
NO RESP	0	0	0	1	1	1	1	4
	0.	0.	0.	25.0	25.0	25.0	25.0	100.0
	0.	0.	0.	1.5	0.6	2.3	4.7	0.7
TOTAL	99	56	79	65	148	43	21	511
	19.3	10.9	15.4	12.7	28.9	8.4	4.1	100.0
	100.0	100.0	100.0	00.0	100.0	100.0	100.0	100.0

TABLE A-4
FOR ALL RESPONDENTS WHO WORKED JANUARY 11-17: HOURS WORKED BY AGE OF RESPONDENT

	1-10	11-20	21-30	31-35	36-40	41&OVER	NO RESP	TOTAL
16-18	25	5	1	0	0	0	1	32
	78.1	15.6	3.1	0.	0.	0.	3.1	100.0
	25.2	8.9	1.2	0.	0.	0.	4.7	6.2
19-21	12	9	9	11	18	4	2	65
	18.4	13.8	13.8	16.9	27.6	6.1	3.0	100.0
	12.1	16.0	11.3	16.9	12.1	9.3	9.5	12.7
22-24	7	11	15	8	22	6	1	70
	10.0	15.7	21.4	11.4	31.4	8.5	1.4	100.0
	7.0	19.6	18.9	12.3	14.8	13.9	4.7	13.6
25-29	3	12	13	18	27	8	4	85
	3.5	14.1	15.2	21.1	31.7	9.4	4.7	100.0
	3.0	21.4	16.4	27.6	18.2	18.6	19.0	16.6
30-39	15	7	22	14	34	8	2	102
	14.7	6.8	21.5	13.7	33.3	7.8	1.9	100.0
	15.1	12.5	27.8	21.5	22.9	18.6	9.5	19.9
40-49	13	5	12	10	22	11	2	75
	17.3	6.6	16.0	13.3	29.3	14.6	2.6	100.0
	13.1	8.9	15.1	15.3	14.8	25.5	9.5	14.6
50-59	10	7	3	2	14	5	5	46
	21.7	15.2	6.5	4.3	30.4	10.8	10.8	100.0
	10.1	12.5	3.7	3.0	9.4	11.6	3.8	9.0
60-64	4	0	2	1	4	0	0	11
	36.3	0.	18.1	9.0	36.3	0.	0.	100.0
	4.0	0.	2.5	1.5	2.7	0.	0.	2.1
65+	6	0	0	0	1	1	0	8
	75.0	0.	0.	0.	12.5	12.5	0.	100.0
	6.0	0.	0.	0.	0.6	2.3	0.	1.5
NO RESPONSE	4	0	2	1	6		4	17
	23.5	0.	11.7	5.8	35.2	0.	23.5	100.0
	4.0	0.	2.5	1.5	4.0	0.	19.0	3.3
TOTAL	99	56	79	65	148	43	21	511
	19.3	10.9	15.4	12.7	28.9	8.4	4.1	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-5
FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO LOOKED FOR WORK DURING THE PAST FOUR WEEKS: AGE AND SEX OF RESPONDENT

	MALE	FEMALE	NO RESP	TOTAL
16-18	11	8	0	19
	57.8	42.1	0.	100.0
	10.3	14.2	0.	11.7
19-21	24	9	0	33
	72.7	27.2	0.	100.0
	22.6	16.0	0.	20.3
22-24	14	14	0	28
	50.0	50.0	0.	100.0
	13.2	25.0	0.	17.2
25-29	17	8	0	25
	68.0	32.0	0.	100.0
	16.0	14.2	0.	15.4
30-39	17	11	0	28
	60.7	39.2	0.	100.0
	16.0	19.6	0.	17.2
40-49	14	4	0	18
	77.7	22.2	0.	100.0
	13.2	7.1	0.	11.1
50-59	7	1	0	8
	87.5	12.5	0.	100.0
	6.6	1.7	0.	4.9
60-64	0	1	0	1
	0.	100.0	0.	100.0
	0.	1.7	0.	0.6
65+	0	0	0	0
	0.	0.	0.	0.
	0.	0.	0.	0.
NO RESPONSE	2	0	0	2
	100.0	0.	0.	100.0
	1.8	0.	0.	1.2
TOTAL	106	56	0	162
	65.4	34.5	0.	100.0
	100.0	100.0	0.	100.0

TABLE A-6

FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO HAVE LOOKED FOR WORK DURING THE PAST FOUR WEEKS: TYPE OF WORK WANTED (PART TIME, FULL TIME) BY SEX OF RESPONDENT

	MALE	FEMALE	NO RESP	TOTAL
FULL TIME	46	16	0	62
	74.1	25.8	0.	100.0
	43.3	28.5	0.	38.2
PART TIME	26	22	0	48
	54.1	45.8	0.	100.0
	24.5	39.2	0.	29.6
EITHER	31	16	0	47
	65.9	34.0	0.	100.0
	29.2	28.5	0.	29.0
NO RESPONSE	3	2	0	5
	60.0	40.0	0.	100.0
	2.8	3.5	0.	3.0
TOTAL	106	56	0	162
	65.4	34.5	0.	100.0
	100.0	100.0	0.	100.0

TABLE A-7

FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY SEX OF RESPONDENT

	MALE	FEMALE	NO RESP	TOTAL
YES	187	141	0	328
	57.0	42.9	0.	100.0
	51.0	40.1	0.	45.7
MAYBE	31	36	0	67
	46.2	53.7	0.	100.0
	8.4	10.2	0.	9.3
NO	116	137	0	253
	45.8	54.1	0.	100.0
	31.6	39.0	0.	35.2
DON'T KNOW	23	33	0	56
	41.0	58.9	0.	100.0
	6.2	9.4	0.	7.8
NO RESPONSE	9	4	0	13
	69.2	30.7	0.	100.0
	2.4	1.1	0.	1.8
TOTAL	366	351	0	717
	51.0	48.9	0.	100.0
	100.0	100.0	0.	100.0

TABLE A-8

FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY AGE OF RESPONDENT

	16-18	19-21	22-24	25-29	30-39	40-49	50-59	60-64	65+	NO RESP	TOTAL
YES	65	53	36	31	57	33	32	5	5	11	328
	19.8	16.1	10.9	9.4	17.3	10.0	9.7	1.5	1.5	3.3	100.0
	60.1	58.2	76.5	48.4	62.6	39.7	31.0	16.1	6.1	55.0	45.6
MAYBE	10	8	2	8	15	12	6	3	1	2	67
	14.9	11.9	2.9	11.9	22.3	17.9	8.9	4.4	1.4	2.9	100.0
	9.2	8.7	4.2	12.5	16.4	14.4	5.8	9.6	1.2	10.0	9.3
NO	21	17	5	17	11	29	56	21	72	5	254
	8.2	6.6	1.9	6.6	4.3	11.4	22.0	8.2	28.3	1.9	100.0
	19.4	18.6	10.6	26.5	12.0	34.9	54.3	67.7	88.8	25.0	35.3
DON'T KNOW	9	10	4	7	5	8	9	1	2	2	57
	15.7	17.5	7.0	12.2	8.7	14.0	15.7	1.7	3.5	3.5	100.0
	8.3	10.9	8.5	10.9	5.4	9.6	8.7	3.2	2.4	10.0	7.9
NO RESPONSE	3	3	0	1	3	1	0	1	1	0	13
	23.0	23.0	0.	7.6	23.0	7.6	0.	7.6	7.6	0.	100.0
	.7	3.2	0.	1.5	3.2	1.2	0.	3.2	1.2	0.	1.8
TOTAL	108	91	47	64	91	83	103	31	81	20	719
	15.0	12.6	6.5	8.9	12.6	11.5	14.3	4.3	11.2	2.7	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-9

FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY WHEN LAST WORKED FOR PAY AT A REGULAR JOB OR BUSINESS

	LAST 12 M	1-2YRS	2-3YRS	3-5YRS	5+YRS	NEVER WKD	NO RESP.	TOTAL
YES	149	80	36	14	30	17	2	328
	45.4	24.3	10.9	4.2	9.1	5.1	0.6	100.0
	60.8	56.3	58.0	28.8	23.2	17.8	20.0	45.6
MAYBE	27	16	3	3	10	8	0	67
	40.2	23.8	4.4	.4	14.9	11.9	0.	100.0
	11.0	11.2	4.8	8.3	7.7	8.4	0.	9.3
NO	52	25	16	14	84	59	4	254
	20.4	9.8	6.2	5.5	33.0	23.2	1.5	100.0
	21.2	17.6	25.8	38.8	65.1	62.1	40.0	35.3
DON'T KNOW	15	18	7	5	4	7	1	57
	26.3	31.5	12.2	8.7	7.0	12.2	1.7	100.0
	6.1	12.6	11.2	13.8	3.1	7.3	10.0	7.9
NO RESPONSE	2	3	0	0	1	4	3	13
	15.3	23.0	0.	0.	7.6	30.7	23.0	100.0
	0.8	2.1	0.	0.	0.7	4.2	30.0	1.8
TOTAL	245	142	62	36	129	95	10	719
	34.0	19.7	8.6	5.0	17.9	13.2	1.3	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-10

FOR ALL MALES NOT WORKING JANUARY 11-17 WHO HAVE NOT WORKED DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY WHEN LAST WORKED FOR PAY AT A REGULAR JOB OR BUSINESS

	LAST 12 M	1-2YRS	2-3YRS	3-5YRS	5+YRS	NEVER WKD	NO RESP.	TOTAL
YES	96	46	22	8	8	5	2	187
	51.3	24.5	11.7	4.2	4.2	2.6	1.0	100.0
	64.4	63.0	64.7	47.0	13.7	17.8	28.5	51.0
MAYBE	18	9	1	0	1	2	0	31
	58.0	29.0	3.2	0.	3.2	6.4	0.	100.0
	12.0	12.3	2.9	0.	1.7	7.1	0.	8.4
NO	24	10	5	7	49	15		116
	20.6	8.6	7.7	6.0	42.2	12.9	1.7	100.0
	16.1	13.6	26.4	41.1	84.4	53.5	28.5	31.6
DON'T KNOW	9	8	2	2	0	2	0	23
	39.1	34.7	8.6	8.6	0.	8.6	0.	100.0
	6.0	10.9	5.8	11.7	0.	7.1	0.	6.2
NO RESPONSE	2	0	0	0	0	4	3	9
	22.2	0.	0.	0.	0.	44.4	33.3	100.0
	1.3	0.	0.	0.	0.	14.2	42.8	2.4
TOTAL	149	73	34	17	58	28	7	366
	10.7	19.9	9.2	4.6	15.8	7.6	1.9	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-11

FOR ALL FEMALES NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY WHEN LAST WORKED FOR PAY AT A REGULAR JOB OR BUSINESS

	LAST 12 M	1-2YRS	2-3YRS	3-5YRS	5+YRS	NEVER WKD	NO RESP.	TOTAL
YES	53	34	14	6	22	12	0	141
	37.5	24.1	9.9	4.2	15.6	8.5	0.	100.0
	55.2	50.0	51.8	31.5	30.9	17.9	0.	40.1
MAYBE	9	7	2	3	9	6	0	36
	25.0	19.4	5.5	.3	25.0	16.6	0.	100.0
	9.3	10.2	7.4	15.7	12.6	8.9	0.	10.2
NO	28	14	7	7	35	44	2	137
	20.4	10.2	5.1	5.1	25.5	32.1	1.4	100.0
	29.1	20.5	25.9	36.8	49.2	65.6	66.6	39.0
DON'T KNOW	6	10	4	3	4	5	1	33
	18.1	30.3	12.1	9.0	12.1	15.1	3.0	100.0
	6.2	14.7	14.8	5.7	5.6	7.4	33.3	9.4
NO RESPONSE	0	3	0	0	1	0	0	4
	0.	75.0	0.	0.	25.0	0.	0.	100.0
	0.	4.4	0.	0.	1.4	0.	0.	1.1
TOTAL	96	68	27	19	71	67	3	351
	27.3	19.3	7.6	5.4	20.2	19.0	0.8	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-12

FOR ALL THOSE NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY RESPONDENT'S INTENT TO LOOK FOR WORK DURING THE NEXT 12 MONTHS

INTEND TO LOOK	YES	MAYBE	NO	DON'T KNOW	NO RESP.	TOTAL
YES	279	33	42	23	4	381
	73.2	8.6	11.0	6.0	1.0	100.0
	85.0	49.2	16.5	40.3	30.7	52.9
IT DEPENDS	12	13	6	5	0	36
	33.3	36.1	16.6	13.8	0.	100.0
	3.6	19.4	2.3	8.7	0.	5.0
NO	17	12	189	10	3	231
	7.3	5.1	81.8	4.3	1.2	100.0
	5.1	17.9	74.4	17.5	23.0	32.1
DON'T KNOW	19	8	15	19	0	61
	31.1	13.1	24.5	31.1	0.	100.0
	5.7	11.9	5.9	.3	0.	8.4
NO RESPONSE	1	1	2	0	6	10
	10.0	10.0	20.0	0.	60.0	100.0
	0.3	1.4	0.7	0.	46.1	1.3
TOTAL	328	67	254	57	13	719
	45.6	9.3	35.3	7.9	1.8	100.0
	100.0	100.0	00.0	100.0	100.0	100.0

TABLE A-13

FOR ALL MALES NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY RESPONDENT'S INTENT TO LOOK FOR WORK DURING THE NEXT 12 MONTHS

INTEND TO LOOK	YES	MAYBE	NO	DON'T KNOW	NO RESP	TOTAL
YES	164	21	21	11	2	219
	74.8	9.5	9.5	5.0	0.9	100.0
	87.7	67.7	18.1	47.8	22.2	59.8
IT DEPENDS	6	6	3	1	0	16
	37.5	37.5	18.7	6.2	0.	100.0
	3.2	19.3	2.5	4.3	0.	4.3
NO	11	2	86	3	2	104
	10.5	1.9	82.6	2.8	1.9	100.0
	5.8	6.4	74.1	13.0	22.2	28.4
DON'T KNOW	5	1	5	8	0	19
	26.3	5.2	26.3	42.1	0.	100.0
	2.6	3.2	4.3	34.7	0.	5.1
NO RESPONSE	1	1	1	0	5	8
	12.5	12.5	12.5	0.	62.5	100.0
	0.5	3.2	0.8	0.	55.5	2.1
TOTAL	187	31	116	23	9	366
	51.0	8.4	31.6	6.2	2.4	100:0
	100.0	100.0	00.0	100.0	100.0	100.0

TABLE A-14

FOR ALL FEMALES NOT WORKING JANUARY 11-17 WHO HAVE NOT LOOKED FOR WORK DURING THE PAST FOUR WEEKS: INTEREST IN HAVING A REGULAR JOB BY RESPONDENT'S INTENT TO LOOK FOR WORK DURING THE NEXT 12 MONTHS

INTEND TO LOOK	YES	MAYBE	NO	DON'T KNOW	NO RESP	TOTAL
YES	115	12	21	11	2	161
	71.4	7.4	13.0	6.8	1.2	100.0
	81.5	33.3	15.3	33.3	50.0	45.8
IT DEPENDS	6	7	3	4	0	20
	30.0	35.0	15.0	20.0	0.	100.0
	4.2	19.4	2.1	12.1	0.	5.6
NO	6	10	102	7	1	126
	4.7	7.9	80.9	5.5	0.7	100.0
	4.2	27.7	74.4	21.2	25.0	35.8
DON'T KNOW	14	7	10	11	0	42
	33.3	16.6	23.8	26.1	0.	100.0
	9.9	19.4	7.2	33.3	0.	11.9
NO RESPONSE	0	0	1	0	1	2
	0.	0.	50.0	0.	50.0	100.0
	0.	0.	0.7	0.	25.0	0.5
TOTAL	141	36	137	33	4	351
	40.1	10.2	39.0	9.4	1.1	100.0
	100.0	100.0	100.0	100.0	100.0	100.0

RURAL UNEMPLOYMENT STUDY
ALASKA DEPARTMENT OF LABOR
P. O. BOX 1149
JUNEAU, ALASKA 99811

[Complete a separate form for each household member Age 16 and over]

Reference Week — January 1981

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

First Name of Household Member:

Age

Race
- Eskimo ..... O
- American Indian ..... O
- Aleut ..... O
- White ..... O
- Other ..... O

Sex
- Male ..... O
- Female ..... O

What was ... doing most of week of Jan. 11-Jan. 17

Working, Keeping house, Going to school or something else?		Go To Item
Working	O	2A
With a job but not at work	O	2
Looking for work	O	2
Keeping house	O	2
Going to school	O	2
Unable to work	O	5
Retired	O	2
Subsistence Activity	O	2
Other (explain)	O	2

2 Did ... do any work at all that Week, not counting work around the house?

Yes O Go to 2A — No O Go to 3

2A How many hours did ... work that Week at all jobs?

_____ hours

(If more than 34 hours skip to 2C)

2B Does ... Usually work 35 hours or more a week at this job?

Yes O — What is the reason ... worked less than 35 hours that Week?

No O — What is the reason ... Usually works less than 35 hours a week?

(Mark the appropriate reason)

Slack work	O
Material shortage	O
Plant or machine repair	O
New job started during week	O
Job terminated during week	O
Could find only part time work	O
Holiday (Legal or religious)	O
Labor dispute	O
Bad weather	O
Own illness	O
On vacation	O
Too busy with housework, school, personal business, etc.	O
Did not want full time work	O
Full time work week under 35 hours	O
Other reason (Specify)	O

2C Did ... lose any time or take any time off that Week for any reason such as illness, holiday or slack work?

Yes O

No O

How many hours did ... take off?

2D Did ... work at more than one job that Week?

Yes O — No O

(Skip to 3B and enter job held)

3 Did ... have a job or business from which he/she was temporarily absent or on layoff all Week?

Yes O Go to 3A — No O Go to 4

3A Why was ... absent from work that Week?

Own illness	O
On vacation	O
Bad weather	O
Labor dispute	O
New job to begin within 30 days	O
Temporary layoff (under 30 days)	O
Indefinite layoff (30 days or more or no definite recall date)	O
Other (explain below)	O

3B For whom did ... work? (Name of company, business, or other organization)

What kind of work was ... doing? (For example, teacher, janitor, clerk)

END QUESTIONS

4 Has ... been looking for work during the past 4 weeks?

Yes O Go to 4A — No O Go to 5

4A What has ... been doing in the last 4 weeks to find work? (Mark all methods used, do not read list)

Checked with: public employ agency	O
private employ agency	O
employer directly	O
friends or relatives	O
Placed or answered ads	O
Nothing (Skip to 5)	O
Other (specify methods e.g., CETA, union or prof. registers, etc.)	O

4B Has ... been looking for full time or part time work?

Full O — Part O

Either O

4C Is there any reason why ... could not take a job the week of Jan. 11

Yes O — No O

Already has a job	O
Temporary illness	O
Going to school	O
Other (explain below)	

4D When did ... last work at a full time job or business lasting 2 consecutive weeks or more?

Within last 12 months (note month)

Month _____

One to five years ago	O
More than 5 years ago	O
Never worked full time 2 wks or more	O
Never worked at all	O

END QUESTIONS

5 When did ... last work for pay at regular job or business, either full or part time?

Within past 12 months	I
1 up to 2 years ago	O
2 up to 3 years ago	O
3 up to 5 years ago	O
5 or more years ago	O
Never worked	O

(Go to 5A)

(Skip to 5B)

5A Why did ... leave that job?

Personal, family (incl. pregnancy) or school	
Health	O
Retirement or old age	O
Seasonal job completed	O
Slack work or business conditions	O
Temporary nonseasonal job completed	O
Unsatisfactory work arrangements (Hours, pay, etc.)	O
Other	O

5B Does ... want a regular job now, either full or part time?

Yes O

Maybe, it depends (explain below) O (Go to 5C)

No O

Don't know O (Skip to 5D)

5C What are the reasons ... is not looking for work? (Mark each reason mentioned)

Believes no work available in line of work or area	O
Couldn't find any work	O
Lacks nec. schooling, training, skills or experience	O
Employers think too young or too old	O
Other pers. handicap in finding job	O
Can't arrange child care	O
Family responsibilities	O
In school or other training	O
Ill health, physical disability	O
Other (explain below)	O
Don't know	O

5D Does ... intend to look for work of any kind in the next 12 months?

Yes	O
It depends (explain below)	O
No	O
Don't know	O

END QUESTIONS

PART III FEASIBILITY OF EMPLOYMENT SERVICE LOCAL OFFICES IN THE LOWER YUKON—KUSKOKWIM REGION

Before exploring the possibility of establishing one or more Employment Service (ES) Local Offices - also known as Job Service Offices- in the region under study, it would be well to state the fuctions of an ES office. Some history of ES may also be useful.

FUNCTIONS OF THE EMPLOYMENT SERVICE

The depression of the 1930's resulted in a vast reduction of employment opportunities. In 1933, as one measure to assist this unemployed population, Congress passed the Wagner-Peyser Act which established the U.S. Employment Service and its state employment service partners. The states are responsible for the actual client services through their network of ES local offices (Job Service offices). The federal partner is responsible for funding state functions and for providing regulations and assuring uniformity throughout the various states' ES operations.

ES client services address the needs of two major groups: the unemployed or underemployed job seeker; and the employers seeking workers. To this end, ES accepts and lists job openings from employers, registers for work those persons seeking employment (applicants), and attempts to match the two, based upon job requirements and applicant qualifications. Other services are offered to applicants (i.e. employment counselling and testing, referral to supportive services, and addministration of the work test for both the Unemployment Insurance and the Food Stamp program). Through administrative regulation, ES conducts the work registration requirements of Alaska's General Relief program.

Since the early 1970's, the Employment Service in Alaska has experienced a steady growth (see table 3-1) in number of applicants and in services provided, even with staffing cuts (i.e., reduced federal grants) in recent years.

Due to the President's budget cuts, Alaska's employment service will be cut by 17 percent (about 27 Staff Years) for FY'82. The U.S. Employment Service evaluates the viability of a state's program based upon how many placements (matches between employer's openings and job seekers) were accomplished versus the number of staff year equivalents (at X number of dollars per staff year equivalent) allocated or granted to each state.* This ratio inhibits the use of ES grants dollars to establish and fund an office with low productivity potential.

* The federal grant for Employment Services is transmitted to each state in the form of Staff Years (SY) funded at a certain level of funding per Staff Year. This method allows for a common transmittal and measuring form adjusted to the actual dollar amount needed to fund the Staff Year equivalent in each state. I.e., Alaska's cost per SY is the highest in the nation while those states in the Southeast are among the lowest. The number of SY's received does not directly convert into the number of state positions useable.

TABLE B-1
PROGRAM ACCOMPLISHMENTS

	New Applicants and Renewals	Individuals Placed	Placement Transactions	Individuals Placed Per Staff Year
FY '74	39,334	11,362	15,358	126.9
FY '75	52,290	17,623	24,945	129.1
FY '76	51,839	18,400	25,687	144.7
FY '77	61,545	21,584	29,277	138.8
FY '78	61,790	22,602	30,802	165.3
FY '79	66,976	22,895	31,199	158.1
FY '80	68,040	22,813	31,632	160.8
FY '81		23,667	33,745	

New Applicants and Renewals - an individual is counted only once, no matter how many times they registered for work (New Application) or renewed an existing registration (Renewal).

Individuals Placed - an individual is counted only once, no matter how many times they went to work (Placed) in a job listed with ES.

Placement Transactions - the total number of job openings filled by ES.

One person in this region to cover the non-Bethel areas would not be able to maintain the minimum number of placements necessary to justify the position from a federal standpoint. These federal requirements also specify, in addition to placements, that there must be at least 50 employers employing 10 or more workers in a local office service area.

VIABILITY OF AN EMPLOYMENT SERVICE LOCAL OFFICE IN THE LOWER YUKON-KUSKOKWIM REGION

While the employment statistics in Part II indicate some jobs are available in the Lower Yukon Kuskokwim Region, many of them are low paying and of short duration. About 70 percent of the employment (and therefore potential job opportunities) and about 36 percent of the population (and therefore potential job seekers) of the study region are located in or within 100 miles of Bethel. The balance of the job opportunitites (30 percent) and potential job seekers (64 percent) are spread between more than 24 small villages (pop. 55 to 626).

This relatively large number of populated sites are separated by considerable distances in many cases. Even in those cases where the villages are fairly close together, no road network exists and inter-community movement is not convenient or is expensive. Those seasonal employment opportunities which do arise in these communities tend to compete with other summer activities such as commercial and subsistence fishing activities.

As stated in Part I, there is very little likelihood for growth in long-term, stable, basic-sector employment in the region. This means any change in the employment picture involving the population of the region must be accompanied by a relocation to a point of employment outside the region. This would be one condition in which the Employment Service could be of assistance. Employment Service personnel or their representatives (through contractural agreement) could make local residents aware of employment opportunities in other areas of the state and arrange for applicants to be referred to these opportunities.

The success of this effort would be entirely dependent upon an applicant's willingness to move out of his/her traditional area leaving behind the lifestyle in which they had grown up or to which they had become accustomed. There has been at least one study made which indicates many people residing in rural Alaska are not willing to move even to another community let alone move out of their region. Agency staff located in the area may not have significant influence in altering this attitude.

FEASIBILITY AND OTHER CONSIDERATIONS

The Employment Service has an ES local office in Bethel which is the major population center and has the widest range of job opportunities in the region under consideration. All other communitites are widely disbursed, with limited employment opportunities. There is a large segment of the area's population who would like to be employed (i.e., job seekers) however many of them are unwilling to relocate for employment in different regions of the state.

Choosing one site in which to locate an ES office within the region would be difficult. Factors in this decision include the lack of inexpensive and convenient transportation between communities and lack of prospects for economic growth. Such an office(s) would not be viable from a federal funding standpoint, so would need to be supported with state funds.

According to the 1980 census preliminary release, there are several cities with more population and potentially more economic activity than exists in the Lower Yukon-Kuskokwim region. ES offices in these areas would be more viable and serve a fairly concentrated client population of both employers and job seekers.

TABLE B-2
COMMUNITIES WITH POPULATION GREATER THAN 600 WITHOUT AN ES LOCAL OFFICE

CITY	POPULATION	SERVED BY
Valdez	3,173	
*Soldotna	2,320	Kenai ES
Wrangell	2,174	
*Palmer	2,143	Wasilla ES
Cordova	1,959	
*Unalaska	1,301	Dutch Harbor ES
Haines	996	
*Delta Junction	942	Tok ES
Skagway	769	
Galena	766	
*North Pole	719	Fairbanks ES
Hoonah	677	
Akolmiut	626	
Hooper Bay	624	
Sand Point	619	
Unalakleet	615	
Fort Yukon	612	

* Indicates presence of ES Office within commuting distance.

Only two of these towns (Akolmiut and Hooper Bay) are within the subject region and the five largest range from three to five times as large as either of them. Except for Tok, and Glennallen which serve well traveled road systems covering several towns, and Dutch Harbor which services the seafood industry, there are no ES offices in towns of fewer than 1500 population.

ALTERNATIVES AND CONCLUSIONS

From the statistics quoted in the previous chapters and information provided above, there is a recognized group of people who are underemployed or unemployed residing in the study region. However, part of the reason for this situation is the relative shortage of employment opportunities extant in the region outside the Bethel area and the fact that much of the work available is seasonal and competes with traditional summer fishing activities.

The Employment Service requires two factors to be effective in an area: (1) an available supply of workers; and (2) a supply of jobs for which the workers are qualified. If one of these is missing the labor exchange function ceases to operate. The labor supply exists in the region, albeit widely distributed, but jobs in the region are in short supply, and while many of the people could be referred to jobs outside the region, many of them are unwilling to relocate for this employment. An Employment Service office would not create jobs in the region (other than those to fill the staff of the office), and therefore may not be effective in reducing the number of unemployed people.

There are, however, several viable alternatives to a full scale Employment Service office which could be explored. Because these offices could not be supported with federal funds, state general funds would be needed and state reporting criteria should be implemented to measure the effectiveness of the operation. A different emphasis could be used and a pilot project implemented.

CORE OFFICES

These offices would have full-time staff, would be new hubs of communication, and would be contact points recruiting local workers for jobs both in the area and outside the region. These village recruitment activities could operate through other state agencies' local offices on a contract basis, such as: Military Affairs; Community and Regional Affairs, CETA Division; Health and Social Services, Public Assistance Division; or non-profit arms of native corporations (village or regional).

An information network tied to local media and educational outlets could be used to make job information available. The network would also be used to publicize itinerant visits and information about the long-range outlook in the labor market.

One key element of such a pilot program would be establishing and operating a rotating worker program with employers in more populous areas of the State. The local office would be the contact point for the workers and the participating employer. While studies show most people residing in remote areas would not relocate permanently for employment, some would for short durations. This program would provide them with a new opportunity. The workers would return to their homes following periods of employment.

This program is counter to a typical employer need, that is, a stable workforce. To resolve this mismatch of desires, a system could be established whereby two or more remote area job seekers would band together to share a given job opening. One person could work for a length of time; then another person would take over the responsibilities, and the first person would return home. The employer and employees would both have what they need: a steady workforce and steady employment for a period of the year. This job sharing approach has worked successfully in the seafood industry and in some state government jobs.

The state funded rural office Employment Service (ES) staff would play a key role in establishing this job sharing system. ES would identify job seekers with skills necessary to perform the job, negotiate the hiring of the team with the employer, and make job seeker travel arrangements. ES would utilize urban staff to negotiate with employers.

In order to sell this approach to employers, some incentives could be made available. One such incentive might be to subsidize the extraordinary costs of training more than the one person in the job opening. Other incentives might include a "new job grant" or tax credits (although state tax credits for small businesses are more or less meaningless at the time of this writing).

"OPERATION HITCHHIKE"

"Operation Hitchhike" which the Employment Service operated successfully in the early 1970's could be reestablished. The Alaska "Operation Hitchhike" was a special project in which the Employment Security Division was the prime contractor for the U.S. Department of Labor, ETA, formerly the Manpower Administration. The Alaska agency subcontracted the major portion of the funds to the State Department of Military Affairs (National Guard). The National Guard furnished facilities in up to 13 remote rural communities in westward and northern Alaska for use in locating indigenous Guardsmen who could function as part-time Village Manpower Aides. The Aides provided job information and training information. They also arranged job referral for selected residents who were interested and available for regular employment in other locations. These job sites were primarily away from their homes and, in most cases, in or adjacent to urban areas. A particular advantage of this program was that transportation for the Aides on recruiting trips was provided by the National Guard.

The Aides were selected, assigned, and supervised by the subcontractor and were given basic Employment Service training and assistance by two "Hitchhike" positions contracted to the Employment Service. These two positions consisted of a half-time Hitchhike Supervisor and a half-time Rural Services Coordinator and were funded by ES federal funds. A full-time Job Developer and a halftime Aide worked in the Anchorage area along with the subcontractor's Hitchhike Coordinator and the clerical support. They coordinated activities of the Village Aides and constituted the primary Employment Service and placement mechanism for the "Hitchhike Project" since most significant employers of rural workers were headquartered in the Anchorage area. All of the Village Aides were minority group members.

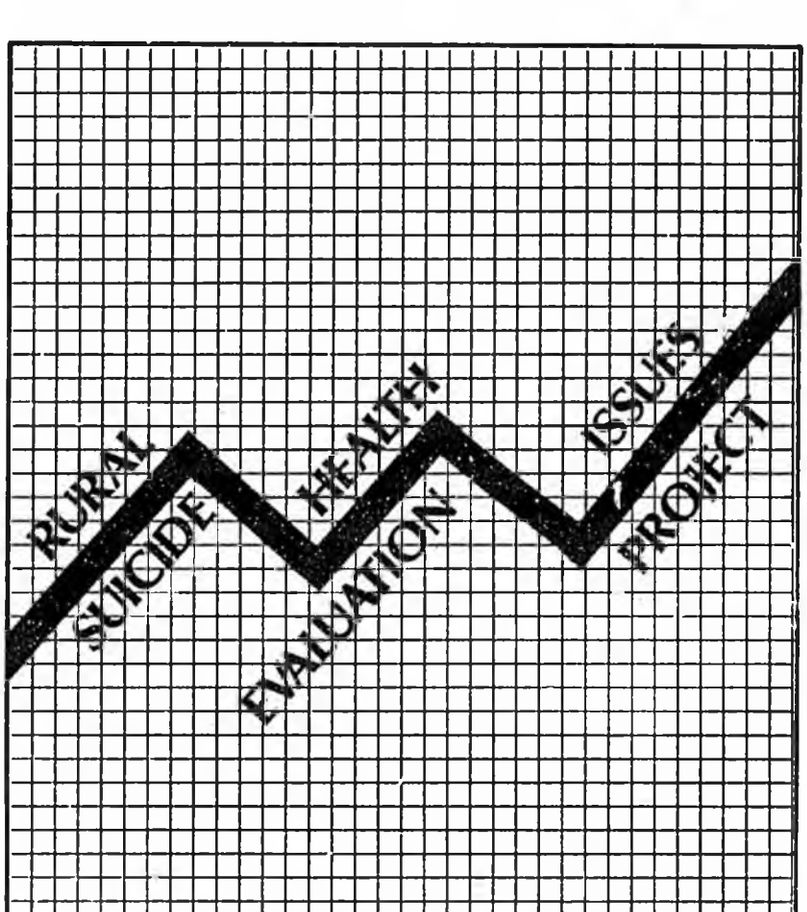
Since no federal funds are available for the supervisory and coordinator positions in Anchorage and other urban areas, state funds would be needed for these as well.

OTHER ALTERNATIVES

The provision of job information can be accomplished in many different ways, perhaps incorporating some of the facets of the previously mentioned alternatives. There is probably no one program that can meet all of the employment needs of all of rural Alaska. It is necessary to remain flexible by responding to conditions as they exist in the local areas. For instance, "Operation Hitchhike" might best be handled through the non-profit arms of local or regional native corporations under certain circumstances.

It is clear that unemployment is a serious problem in rural Alaska and that conventional Employment Security offices cannot be justified under federal guidelines. If the problem is not to be ignored alternative ways of providing information should be implemented by the State. The suggested alternatives by no means exhaust the options available but are offered as a starting point for devising ways of filling the gap in service to rural Alaska.

For Copy of Complete document see Legislature Reference Library
LLIB document no. 8501440



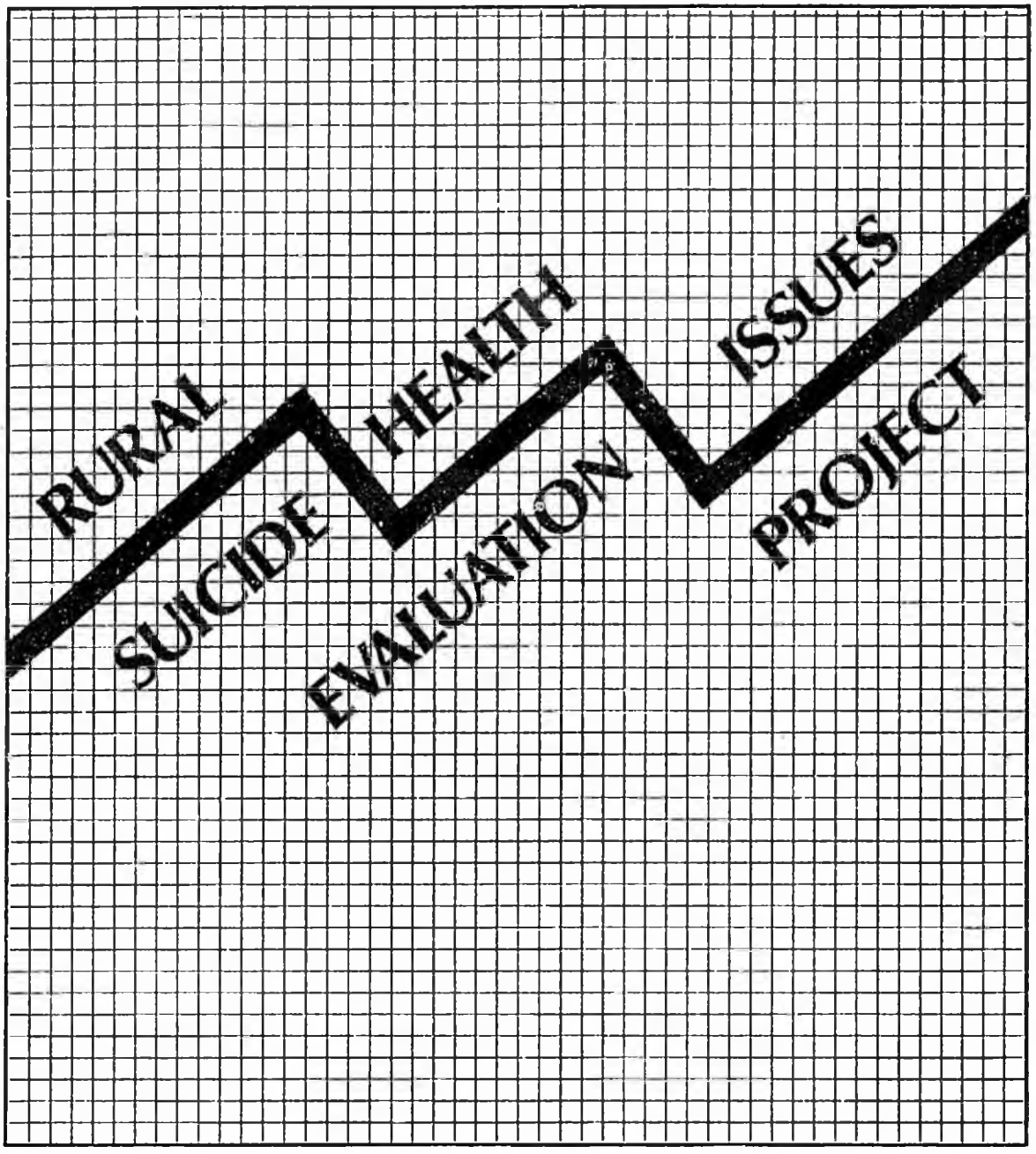
EXECUTIVE SUMMARY

Prepared by:

Alaska Native Health Board, Inc.

November 1985

For copy of complete document see Legislative Reference Library
LLB document no. 8501440



A RESOURCE DOCUMENT

Prepared by:

Alaska Native Health Board, Inc.

November 1985

Alaska Native Health Board

1135 W. 8th AVENUE, SUITE 2, ANCHORAGE, ALASKA 99501 PHONE (907) 276-8989

Reference #A86-0226

February 21, 1986

Representative "Red" Boucher
Attention: Mr. Roger Loppe
Alaska State Legislature
Post Office Box V (MS 3100)
Juneau, Alaska 99811

Dear Roger:

Your letter requesting information on the impact of unemployment on behavioral health arrived yesterday. By coincidence, we were already in the process of assembling the enclosed materials to be forwarded to your office. We do hope you will find information in the Resource Document useful.

Additional information will be supplied to you by Ms. Joan Hamilton Cannelos, ANHB Substance Abuse Coordinator, when she returns to the office next week. Joan was responsible for planning and coordinating an August, 1985 Alaska site visit by a group of psychiatrists affiliated with the American Psychiatric Association. I think you will be most interested in their observations and recommendations, many of which relate directly to economic issues.

Thank you for your interest.

Sincerely,

Bonnie L. Gabaldon
Administrative Assistant

blg

Enclosures

ALEUTIAN/PRIBILOF ISLAND ASSOC., INC.
BRISTOL BAY AREA HEALTH CORPORATION
COOK INLET NATIVE ASSOCIATION
COPPER RIVER NATIVE ASSOCIATION
KODIAK AREA NATIVE ASSOCIATION
MANILAQ ASSOCIATION
THE NORTH PACIFIC RIM
NORTH SLOPE BOROUGH HEALTH CORP.
NORTON SOUND HEALTH CORPORATION
SOUTHEAST ALASKA REGIONAL HEALTH CORP.
TANANA CHIEFS CONFERENCE
YUKON-KUSKOKWIM HEALTH CORPORATION

Alaska Native Health Board

1135 W. 8th AVENUE, SUITE 2, ANCHORAGE, ALASKA 99501 PHONE (907) 276-8989

Reference #A86-0218

February 20, 1986

Representative Red Boucher
Alaska State Legislature
Post Office Box V (MS 3100)
Juneau, Alaska 99811

Dear Representative Boucher:

The Alaska Native Health Board is pleased that the Rural Health Issues Study and Statewide Suicide Evaluation Project conducted for the Legislature are complete. Copies of the final report and companion summary document are enclosed.

Even though the final report has been published and is now being distributed, our work has just begun. The Resource Document contains many recommendations the ANHB believes will help to improve rural health care delivery.

The three major recommendations to come out of the study effort are:

1. There is a need for increased emphasis on the prevention of needless illness, injuries and deaths.

2. There is a need for emphasis on community empowerment. The proposal to establish the ANHB as the State's Rural Resource Center identifies vehicles whereby major changes can be accomplished. (See enclosed proposal.)

3. There is a need to establish a statewide health data collection system at the regional level. At the present time current, reliable morbidity and mortality data is not available from State agencies.

ALEUTIAN/PRIBILOF ISLAND ASSOC., INC.
BRISTOL BAY AREA HEALTH CORPORATION
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SOUTHEAST ALASKA REGIONAL HEALTH CORP.
TANANA CHIEFS CONFERENCE
YUKON-KUSKOKWIM HEALTH CORPORATION

If you have any concerns regarding the reports or the proposal to improve the ability of the ANHB to act as the State's Rural Resource Center, please feel free to contact our office.

The ANHB looks forward to working with you during this legislative session to effect improvements in the State's rural health care delivery system.

Sincerely,

ALASKA NATIVE HEALTH BOARD, INC.

Dennis P. DeGross
Executive Director

blg

Enclosures