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investment return and thus created impermissible arbitrage profit. The Service reasoned that the pricing of the prepayment reflected the expectation of the State fund that it would be able to invest the amount of the prepayment at a yield materially higher than the yield on the City's bonds. As a result, the Service believed that both the City and State fund would benefit form the earnings on the investments. In addition, the Service argued that the prepayment constituted the use of bond proceeds to acquire "investment-type property" at a yield higher than that on the bonds (after taking into account the discount received on the prepayment) in that absent the discount pricing of the prepayment there would be no economic savings for the City.

Ultimately, the City prevailed on appeal as the Court of Appeals concluded that there was an existing obligation of the City to the State fund, the City would not benefit from the investment of amounts by the State fund and the prepayment of the City's own debt obligation to the State fund did not constitute the acquisition of investment type property by the City. The City was then able to refund its obligation to the State fund by issuing tax exempt POBs.

While the unusual facts in this case have application beyond the City of Columbus, such application is likely to be fairly limited and to attract unfavorable attention from the Internal Revenue Service.

E. Tax-Exempt Working Capital Bonds

While directly issuing bonds to deposit the proceeds into a pension fund does not appear to be permitted under current tax law governing tax-exempt bonds, in certain cases it may be possible for a state or local government to indirectly fund the current year's pension deposit. For example, a state or local government may issue short term tax or revenue anticipation notes or long term working capital bonds to finance a cash flow budget deficit or a so-called structural budget deficit. The deficit analysis would include any cash flow deficit relating to the state or local government's obligation to deposit amounts into its pension fund.

It may be that this type of financing is best done so that the bond proceeds are not required to be deposited in the pension fund, but rather, are used to fund deficits created by working capital expenditures including the deposit of amounts into the pension fund. In other words, it is important that the bond proceeds not be "traced" into the pension fund or required to be deposited there and the bonds should not be called Pension Obligation Bonds.

Among other things, long term bonds of this type would bring into play the application of some complex federal tax rules relating to when proceeds can be treated as spent, allocation of the deficit in sizing the issue, permitted amortization structure, the application of so-called "other replacement proceeds" rules, applicable yield and other investment restrictions, post-issuance compliance matters, plus the intersection in sizing and in post-issuance compliance with the issuance of normal tax or revenue anticipation notes and any other short term or long term working capital obligations.

F. Investment of POB Proceeds in Municipal Obligations

The primary tax problem in the use of tax-exempt POBs to make a deposit to a pension fund is that the proceeds are not treated as spent, but rather are treated as invested. Moreover, under the so-called "proceeds spent last" rule applicable to working capital financings, these proceeds cannot be treated as paid out to pension recipients until all other available amounts are first expended, which as a practical matter, means that the proceeds will never be deemed expended. Unless the investment yield on the investments in the pension fund is not more than the yield on the bonds, the bonds will become taxable arbitrage bonds. In addition, the "hedge bond" rules would result in the bonds being treated as taxable hedge bonds unless the issuer actually expected to spend the proceeds within a three- or five-year time frame, taking into account the "proceeds spent last" rule.

However, under both the arbitrage rules and the hedge bond rules, interest on the bonds used to fund the pension fund could be tax exempt if the issuer invested the proceeds of the bonds in municipal obligations the interest on which is not subject to the alternative minimum tax (so-called "non-AMT" municipal bonds). Under these provisions as long as the amount of non-AMT municipal bond investments in the

pension fund is at least equal to 95% of the amount of POBs outstanding at any time, interest on the POBs will be tax exempt. As the POBs are amortized, there is a similar reduction in the amount required to be invested only in non-AMT municipal bonds in the pension fund.

While this structure allows for POBs to be issued as tax exempt, the benefit of a tax exemption on the bonds may be outweighed by the limitation on the type of investments allowed with the proceeds.

G. Other Considerations: Effect on TRANs

Tax and revenue anticipation notes (TRANs), are typically issued by state and governmental units of all sizes to fund the annual cash flow deficit which arises due to the timing mismatch between annual revenues and annual expenses. TRANs are almost always issued as short term notes with maturities of 13 months or less and are repaid at or shortly after the end of the fiscal year by which time it is expected that revenues will have "caught up" with expenses. To the extent the POB proceeds are used to fund a deposit to the pension fund that otherwise would have been made out of current year's revenues, the deficit will be likely be reduced by the same amount, impacting the sizing of any TRANs issued for that year. The one circumstance where this would not happen is if the calculation of the maximum cash flow deficit used in sizing the TRANs shows that it is incurred prior to the time of the pension deposit. In that case, the use of proceeds to make that deposit would not have any impact on the size of the TRAN issue.

CHAPTER SEVEN

Federal Reimbursement Issues

Certain costs of state and local government in administering programs under grants from or contracts with the federal government are eligible for reimbursement from the federal government. Such costs include compensation and benefits, including pension benefits, of state or local government employees for the time devoted to the administration of such programs. Such allocable pension benefit costs even include the interest assigned to the state or local government's unfunded liability. The principles governing such reimbursement are set out in Office of Management and Budget Circular A-87. Some states have similar programs for reimbursement of local governments for costs related to the administration of state programs.

POBs replace the state or local government's payment of some or all of these pension costs with payment of the principal of and interest on the POBs. Issuers will want to be comfortable that the federal government will treat debt service on the POBs as the surrogate for the pension obligations funded or refunded with the POBs and will continue to reimburse its allocable share. Statements have been issued by the Office of Management and Budget and the Department of Health and Human Services to the effect that the POBs, including principal (representing amounts paid to the pension fund), interest and costs of issuance, will be allowable as the pension costs funded or refunded thereby, so long as the POBs are not more costly to the federal government than the regular pension costs funded or refunded over the remaining life of the unfunded liability. The same principles should apply to refunding POBs. Further details of federal and state reimbursement programs are beyond the scope of this pamphlet.

CHAPTER EIGHT

New York

A greater number of POBs (roughly $5) have been issued by the state and local governments in New York over the past decade than from any other state.

The issuance of POBs by local governments in New York was first authorized in 1989. The State and Local Employees Retirement System of the State of New York ("ERS"), the New York State Police and Fire Retirement System ("PFRS") and the New York State Teachers Retirement System ("TRS", in the aggregate referred to as the "NYS Retirement System") were all modified in 1989 with respect to the method by which the annual contribution amounts were to be calculated in the future. As a result, each system was significantly underfunded, requiring a "catch-up" payment to return to actuarial full funding. Participating local governmental units were offered the option of (1) amortizing the UAAL amount due by a date certain through a direct loan from the State which carried an 8% (for TRS) or 8¼% (for ERS and PFRS) rate of interest until the liability was fully met, or (2) financing the UAAL through the issuance of general obligation bonds over a statutory period (applicable to the particular retirement system), or (3) paying cash by the date certain. Few local governments, except small jurisdictions with few employees, took the third option.

During the period 1989 through 1993, counties, cities and larger school districts, in particular, issued general obligation bonds to pay off their then current balance of unamortized UAAL whenever interest rates dipped sufficiently to permit a lower net interest cost on their own bonds than the 8% or 8¼% rate being charged by the State. During this period, local governments could issue ten year general obligation bonds with net interest costs in the range of 6% to 7.375% depending on their credit rating. The 1989 legislation further provided that at such time as the remaining amortization period was less than five years, local governments could no longer issue

their own debt to pay off the outstanding balances. Thus, with a permitted maximum statutory amortization period of seventeen years for most UAALs, the possibility of financing of the 1989 UAALs ended in the 2001-2002 fiscal year of most local governments.

Beginning in 1995, the State adopted legislation almost every year creating new retirement incentive programs for various categories of State and local government employees, largely to support a goal of efficient downsizing of government. Generally, the legislation establishing these programs did not at the time include provisions for financing of the resulting unfunded liabilities. Such costs, which added to any existing UAAL, were paid either by amortization through the NYS Retirement System or by cash.

Concurrently in this time period, another type of pension-related program was developed by the State legislature which authorized local governments to create service award and defined benefit programs for volunteer ambulance and fire-fighting personnel. The legislation permitted the financing of contributions to certain of such programs attributable to years of volunteer service rendered during the five years prior to adoption of such programs. Such financing cannot be amortized over a period exceeding five years.

In 2003, new legislation was adopted for the purpose of structural reform in the method and manner of employer contributions to the NYS Retirement System, which legislation also included two provisions for the issuance of POBs:

1. Local governments are now permitted to issue POBs for any outstanding obligations to the State for any existing retirement incentive program (*i.e.*, the retirement incentive programs established annually in the years from 1995 through 2002). (This provision was drafted by Orrick attorneys on behalf of the New York State Association of Counties.) The amortization period is limited to five years.

2. Similar to the 1989 legislation, a local government (and the State itself with regard to its own employees) is permitted to amortize a portion of its normal annual contribution for one fiscal year – that is, local governments are permitted to amortize the amount due on December 15, 2004 to the ERS or PFRS component of the NYS Retirement System (except deficiency payments, adjustments relating to prior year payments, obligations for retirement incentives or other similar amounts) to the extent that such amount exceeds 7% of the estimated "pensionable salary" base for the then current fiscal year (2004–2005). This "amount eligible for amortization" may be amortized over a five year period at 8% with the State, or local governments are authorized to issue their own debt obligations to pay such amount, with maximum maturity not to exceed five years. On or about October 15, 2003, the State Comptroller is to determine the "amounts eligible for amortization."

The only type of financing specifically authorized for POBs in New York State are general obligation bonds (which obligations include a pledge of the full faith and credit and taxing power of the local government). These bonds must be issued in the same manner, under the same procedural requirements and subject to the same debt limits and other constraints as for any capital project of the local government. Mandatory or permissive referendum requirements applicable to general obligation bonds of the particular type of local government apply to bond resolutions authorizing POBs. For example, school districts must receive voter approval before issuing debt for any purpose authorized by the 2003 legislation. (Note that the legislation in 1989 exempted such school district POBs from the voter approval requirement; this omission in the 2003 legislation may be corrected during a future legislative session.) Likewise, fire districts would need prior voter approval. The bond resolutions of counties, towns and villages which authorize payment for five years or less are not subject to mandatory or permissive referendum. Similarly, city bond ordinances should not be subject to mandatory or permissive referendum unless specified by applicable special city charter provisions.

Once a bond resolution has been adopted by a local government authorizing the issuance of POBs, it is generally necessary to publish a legal notice of estoppel including a summary of the bond resolution and allow the 20 day estoppel period to elapse prior to the sale of the POBs. The purpose of the estoppel notice is to ensure that debt issued by the local government cannot be challenged on any basis.

procedural or otherwise, except on constitutional grounds once the estoppel period elapsed.

The New York State Legislature has also authorized the State itself to borrow in order to fund its UAAL on at least two occasions. In 1996, the State through the Dormitory Authority of the State of New York issued $773,475,000 of POBs as annual appropriation debt. These bonds had a final maturity in 2003. The 2003 legislation described above also amended the State Retirement and Social Security Law to authorize the State to amortize a portion of the State's contribution bill for the fiscal year ending March 31, 2005. The amortizable portion is calculated in the same manner as that permitted local governments. Likewise, the State may either amortize that portion through the office of the State Comptroller for five years at 8% or issue POBs.

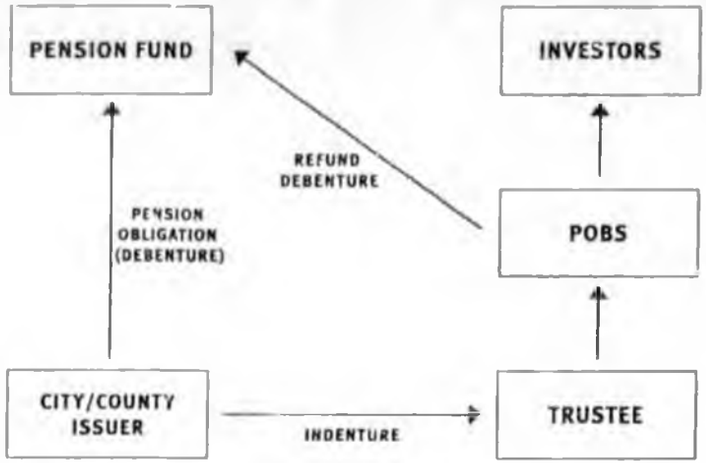
CHAPTER NINE

California

Pension obligation bonds had their start with the famous City of Oakland, California pension bond financing in 1985, the first POB in the country, which Orrick helped to invent and for which it served as bond counsel. That financing and a number of copy-cats that rapidly followed were tax-exempt and primarily driven by then legal arbitrage possibilities. As explained in Chapter 6, tax-exempt POBs largely came to an end with the introduction of tax legislation that became part of the Tax Reform Act of 1986.

A new taxable version of POBs surfaced in late 1993. During the last decade since, thirteen or so cities and seventeen or so counties in California have issued over 60 POBs (second only to New York) aggregating more than $11 billion (more than from any other state). With the exception of one tax exempt transaction rule (see Chapter 6C) POB transactions issued as lease revenue bonds, all of these POBs have been issued under the local agency refunding law (drafted by Orrick a few years before for other purposes). California cities and counties do not have specific authority to issue POBs.[4] However, the local agency refunding law is available to all local public entities in California to refund prior bonds or "other evidence of indebtedness." The pension obligation to the county pension system, the California Public Employees Retirement System or other retirement system is memorialized as a "debenture," thereby becoming an "evidence of indebtedness," which can be refunded by POBs under the local agency refunding law.

[4] The State of California enacted specific authority for State POBs in 2003.



The POBs are typically structured as obligations payable from the general fund of the city or county issuer. They are not full faith and credit taxing power general obligation bonds backed by the issuer's taxing power, because the California Constitution's debt limitation requires such type of bonds to be approved by two-thirds of the electorate. Instead, California POBs have generally been designed to be valid without voter approval under a judicially created exception to the State Constitution debt limitation, which exception is generally referred to as "obligations imposed by law". See discussion in Section A2 of Chapter 5. Because this exception to the Constitutional debt limit was and is much less developed in the case law (few cases not directly on point) than the other two judicially created exceptions (for lease financing and revenue bonds) each POB issue in California has been validated pursuant to California's validation statute (Code of Civil Procedure §§860 *et seq.*).

While there have been many validation actions for POBs, so far they have all ended with a default judgment and no published opinion, meaning that they have no precedential value or application to any transaction other than the specific transaction(s) validated.

What is validated in such validation actions is not legal principles but the bonds and the other principal legal documents approved in a bond resolution. Before the validation action is filed, it is necessary for the state or local government issuer to first adopt the resolution and authorize the bonds, the documents and the validation action. The validation action is filed in the superior court of the county in which the issuer is located, and an order for publication of summons is received. Summons can then be published (usually in a newspaper of general circulation in the city or county in which the issuer is located), which takes a minimum of 21 days. If no one answers the complaint by the date specified in the summons, which must be at least 10 days after completion of publication, the clerk can enter a default, and schedule a hearing before the judge for the default judgment (the timing of which will depend on the jurisdiction, and may be a day or two or, in some jurisdictions, at least 15 days after the clerk enters the default).

So assuming the very best case, obtaining a validation judgment takes a minimum of 31 to 46 days (depending on the jurisdiction) after filing the validation complaint. Of course, issuers are at the mercy of the judge and the clerk, and it sometimes takes a week or more to get an order for publication of summons, or longer than 15 days after the clerk enters a default to schedule the hearing. In addition, the judge could take the matter under submission for an indefinite amount of time, or even disagree with the proposed default judgment, and decline to validate the transaction. Once granted, the default judgment may be appealed on jurisdictional grounds within 30 days. Therefore, it is typically assumed that the validation action will take approximately 60 days (not including the appeal period). It is generally considered reasonable to sell the POBs without waiting for the 30 day appeal period to run, assuming no one has answered the complaint, because the grounds for appeal are so narrow, but usually the bond closing does not occur until after the appeal period has expired.

If someone does answer the complaint, then there is true two party litigation on the merits. While some expedited procedures are available, the timing for resolution of the litigation cannot be predicted, and may take many months unless settled or abandoned. So far, no one has answered the complaint and default judgments have been obtained for every city and county POB issuer. However, the same was not true of the State of California, whose validation complaint was answered by the Howard Jarvis Taxpayers Association, and resulted in a decision on September 23, 2003 by

the Sacramento County Superior Court declining to validate the State's proposed POBs, which decision, as of this writing, is being appealed by the State.

The validation actions can and usually do validate not only the POBs to be issued but also any future POBs or refunding POBs. Not all validation actions are as inclusive or as flexible as they could be (some leaving out future new money or refunding POBs or costs of issuance or locking in semiannual interest payment dates, etc.), and must be carefully reviewed before relied on for future POBs or refunding POBs.

Note, as mentioned in Section A2 of Chapter 5, that the "obligations imposed by law" concept that is generally used to support POBs in California does not support reserves or capitalized interest because inclusion of such components in the bond issue are considered volitional not mandatory (as evidenced by the numerous California POBs issued without them) and therefore not "obligations imposed by law." Costs of issuance, on the other hand, can be included on the theory that they cannot be avoided. The inability to include capitalized interest makes achieving current budget relief more challenging (see discussion of structure options in Section C of Chapter 5). Alternatively, the POBs could be issued as annual appropriation bonds or asset strip lease revenue bonds (see Section A3 and 4 of Chapter 5), which can include reserves and capitalized interest.

CHAPTER TEN

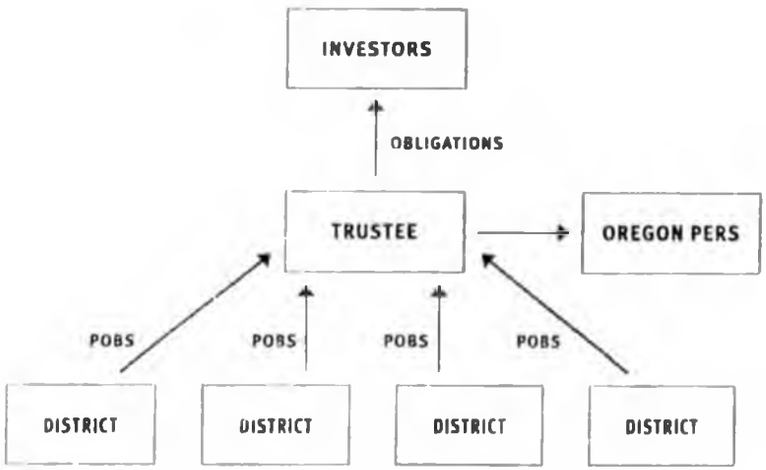
Oregon

State and local government issuers in Oregon have been among the most active users of POBs to finance their share of unfunded liability to the Oregon Public Employees Retirement System. POBs are issued in Oregon either as limited tax bonds or as revenue bonds.

Prior to the passage of the Pension Bonding Act in 2001, the City of Portland, Multnomah County and Josephine County issued significant sized POBs under Oregon's Uniform Revenue Bond Act. In 2001, the Oregon Legislative Assembly approved the Pension Bonding Act (which Orrick attorneys were involved in drafting). The Pension Bonding Act granted authority to "governmental units," including cities, counties, school districts, special districts, public corporations and intergovernmental corporations, to sell full faith and credit obligations for the purpose of refinancing pension obligations. POBs issued under the Pension Bonding Act are not subject to voter approval or annual appropriation and may be issued by local governments individually or jointly.

Significant pooled POB issues have been done by Oregon school districts, community college districts and local governments. In these transactions, the participants pledge their full faith and credit within the limitations of the Oregon Constitution and issue limited tax bonds, payable from available general funds of the issuer. Available general funds include all ad valorem property tax revenues received from levies under each issuer's permanent rate limit and all other unrestricted taxes, fees, charges and revenues legally available to pay debt service on the POBs. The issuers are not authorized to levy additional taxes to pay the POBs.

In the pooled school district and community college district transactions, individual districts issued limited tax POBs in favor of a bond Trustee, which in turn issued obligations that represent a proportionate and undivided interest in and right to receive POB payments pursuant to a Trust Agreement. The POBs were further secured by an Intercept Agreement between the State Department of Education and the school districts and community colleges under which the Trustee was authorized to intercept specific education revenues otherwise paid by the State to the school districts and community colleges in an amount equal to the debt service on each issuer's POBs. Specific examples of recently completed Oregon pooled POB issues include: $153,582,299.60 Oregon Community College Districts Limited Tax Pension Obligations, Series 2003 (Federally Taxable); $927,079,763.45 Oregon School Boards Association Limited Tax Pension Obligations, Series 2003 (Federally Taxable); and $238,743,693.40 Oregon Local Governments Limited Tax Pension Obligations, Series 2002 (Federally Taxable). Each of the pooled transactions have been enhanced by bond insurance. By pooling these transactions, the issuers were able to increase the amount of bonds sold, which increased access to investors, and to lower interest rates and reduce costs of issuance.



Other jurisdictions, including the City of Portland, City of Corvallis, Multnomah County, Marion County, Josephine County, Eugene Water and Electric Board and Portland Community College District have sold POBs on a stand-alone basis.

As an alternative to issuing POBs as limited tax bonds pursuant to the Pension Bonding Act as described above, issuers have the option to issue POBs as revenue bonds pursuant to the Uniform Revenue Bond Act or the Pension Bonding Act. The Uniform Revenue Bond Act allows municipalities to issue revenue bonds for any public purpose secured by designated "revenues," which may include taxes and virtually all other general and special fund revenues and receipts of the municipalities. The Uniform Revenue Bond Act requires notice and a 60-day referendum period during which revenue bonds are normally subject to referral to a vote of the electorate if within the 60-day period 5% or more of the voters file petitions requesting a vote on the bonds. Revenue bonds issued pursuant to the Pension Bonding Act are exempt from this requirement.

In a special election on September 16, 2003, Oregon voters approved an amendment to the Oregon Constitution that authorizes the State Treasurer to issue POBs as general obligation bonds of the State of Oregon for the purpose of paying substantially all of the State's UAAL. The amendment provides that the general obligation of the State must contain a direct promise on behalf of the State to pay the principal, premium, if any, and interest on that indebtedness. The State also will pledge its full faith and credit and taxing power to pay that indebtedness; however, the ad valorem taxing power of the State may not be pledged to pay that indebtedness. The amount of POB indebtedness authorized by the amendment that may be outstanding at any time cannot exceed 1% of the real market value of all property in the State. The State presently expects to issue approximately $2 billion in POBs and to list them on the Luxembourg Stock Exchange in order to facilitate sales to European investors.

In 2003, the Oregon Legislative Assembly made substantial changes to Oregon PERS. The amount of litigation surrounding PERS in Oregon is increasing, and a

number of challenges to the legislative changes are pending in the courts. Several lawsuits have been filed in the Oregon Supreme Court and in the federal district court in Oregon seeking to have changes that were enacted to PERS enjoined or declared an unconstitutional impairment of contract or unconstitutional taking of property. Although these cases are not directly related to any particular bond issues, their outcome could have far-reaching implications with respect to PERS and related liability.

CHAPTER ELEVEN

Similar To POBs

Pension obligations are similar to other state and local government non-bond obligations, which it may be possible to fund in a manner similar to POBs. While this pamphlet is intended to cover primarily POBs, and they are the most frequently used and highly developed of this category, it is useful to note, at least briefly, that there may be other applications of the same concepts discussed above. Several examples (not an exhaustive list) may include such other actuarially based insurance or benefit obligations as workers compensation, health benefits and unemployment insurance or such non-actuarial obligations imposed by law as court rendered judgments for damages against the state or local government and, in California, county obligations under the Teeter delinquent property tax program.

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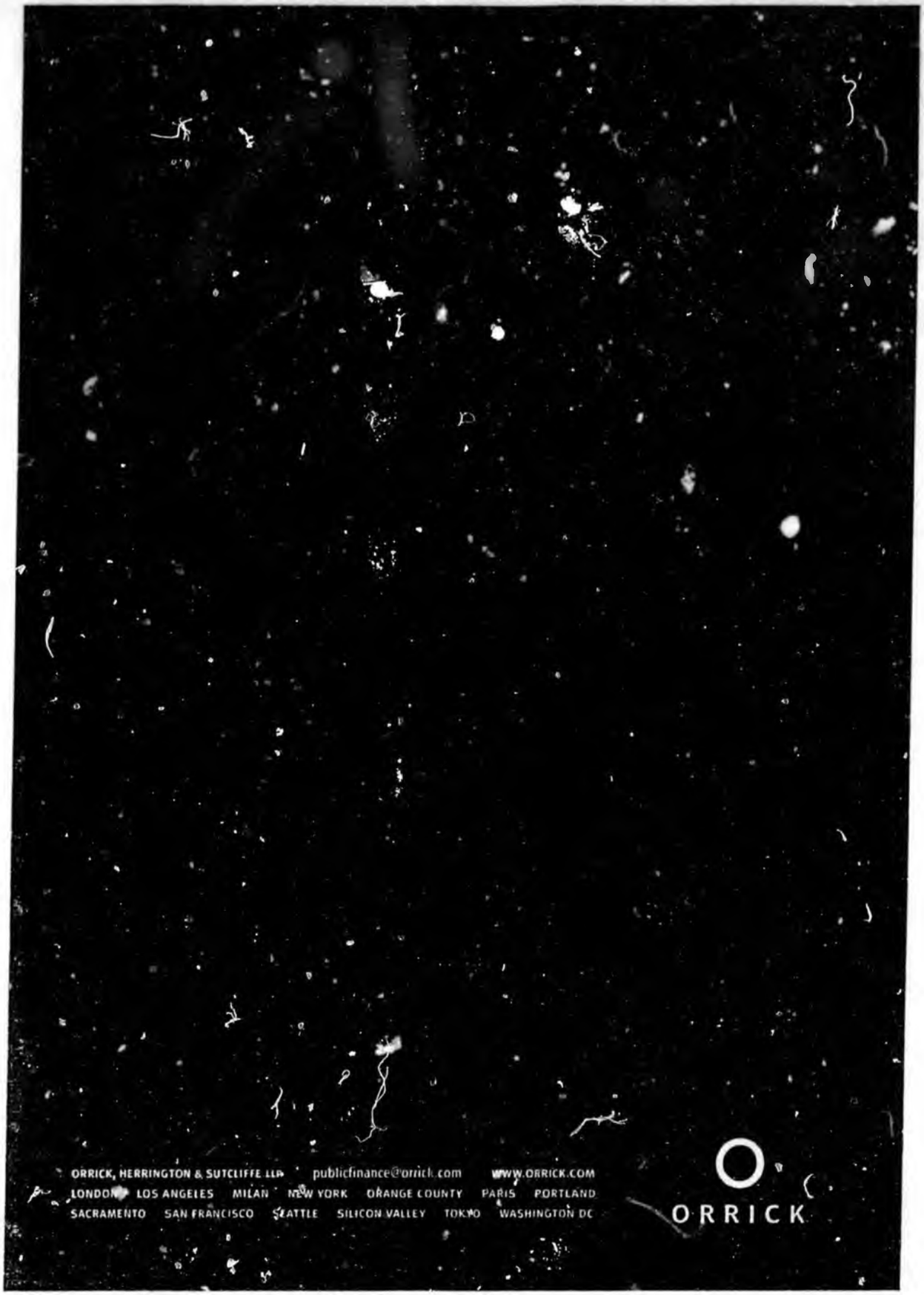
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Research:

Pension Obligation Bonds Are Surging After Brief Hiatus

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Pension obligation bonds (POBs), the once-arcane debt instrument used to finance unfunded pension liabilities, have returned with a vengeance after a brief hiatus, and are again making their mark on the public finance landscape. A number of conditions have fallen into place to spark this resurgence, including:

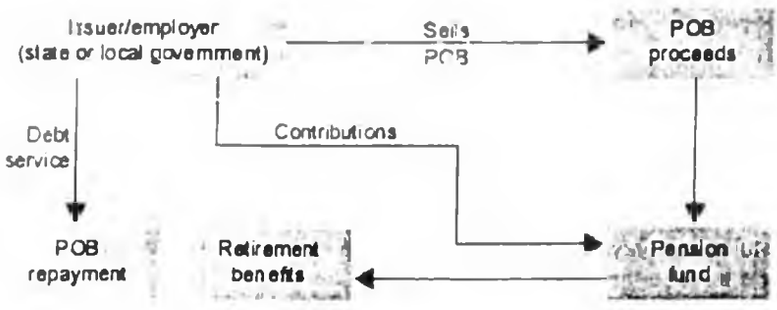
- The rapid growth in unfunded liabilities for public pension funds over the last few years, driven by investment losses, benefit enhancements, and greater longevity of pension plan beneficiaries;
- The relatively low interest-rate environment, which widens the spreads between the POB interest costs paid by the issuer/employer and the assumed investment return rate of the pension systems, which makes the economics of the transaction more attractive; and
- The potential cost savings from a POB, as many state and local employers struggle with budgetary imbalances and other savings alternatives become scarce.

Because of the confluence of these factors, POBs are back. This report details the mechanics of how POBs work, their history, the special risks unique to this debt instrument, the critical rating factors and implications, and future prospects.

How POBs Work

While the financial implications of POBs are complex, the actual mechanics are relatively simple. Generally, the municipal employer will use the findings from the most recent actuarial valuation, or have a new valuation completed, to determine the pension system's unfunded actuarial accrued liability (UAAL). Then, it will decide what portion of the UAAL (either all or a part) will be funded with the POB. In the 1990s most employers funded the entire UAAL, but for various reasons discussed below, many now tend to finance less than the full amount. Once the POB is sized and sold, the net proceeds are placed in the pension trust fund to be commingled with the other funds, and usually invested according to the existing asset allocation guidelines (see Chart). Thus, the pension fund experiences a rapid increase in assets resulting in a higher funded ratio (actuarial value of assets divided by actuarial accrued liability). For the POB to generate savings for the employer, the investment return rate on the POB proceeds must be greater than the interest cost of the bonds (and ideally equal to, or exceed the pension system's investment return assumption), and the larger the spread between these to two rates the better. The employer, as POB issuer and obligor, would then be projected to achieve lower total pension contribution and debt service costs than it would have if it had not sold the POB.

Pension Obligation Bond Mechanics



Brief History

While there were a few issues in the 1980s, the first big wave of POBs really came in the early 1990s. By the end of the decade about $15 billion of POBs had been issued. The years 2000 and 2001 were slow from a POB standpoint, with 2000 correlating to the apex of U.S. public pension funding at an average funded ratios of slightly over 100%, up from only about 80% in 1990. These robust funding gains were fueled by above-average equity returns during the period and a general shift in the weighting of public pension assets to this asset class from fixed-income. The corollary to a high funding level is a lower or nonexistent UAAL. Falling funding ratios, now estimated to be heading towards the 90%, have been exacerbated by a combination of adverse circumstances, some uncontrollable and some self-inflicted. These factors include the decrease in asset values from poor equity returns and the increase in liabilities from benefit enhancements and demographic changes (for example, members living longer). The second wave of POBs, driven by burgeoning unfunded liabilities, has come on strong in 2002 and 2003. As in the first wave, California counties have been leading the pack, and there are a number of repeat borrowers, but there are also significant new players. The state of Illinois, which issued in June of this year, now holds the POB record for sheer size at $10 billion — almost four times larger than the previous record. Oregon sold a $2 billion issue last fall, and other states that have recently completed or plan a POB sale include Kansas, Wisconsin, and West Virginia.

POB Risks

The principal risks to the issuer of a POB fall into a number of categories:

- Arbitrage (investment return/POB interest cost);
- Leverage;
- Market risk; and
- Political.

POBs are essentially an arbitrage play, the success of which is dependent on the premise that the pension fund assets (including POB proceeds) will earn on average more than the interest cost on the POBs and hopefully the assumed investment return rate (generally about 8%) or better each year for the life of the bonds. If the bonds are sold at an interest cost of 6%, for example, the spread could generate handsome savings if the investment returns goals are met over the life of the bonds. The problem is that there is no certainty that the average 8% return will be realized over time, and therein lies the principal risk of the POB to the issuer. If the pension fund earns 8% or more on the POB proceeds, then the result will be success by virtue of having to pay lower pension-related costs (contributions plus POB interest) than without the POB. However, if the investment return is less than the POB interest cost, the transaction becomes a drag on cash flows. Not only will the employer have the new POB debt service costs but also higher contribution rates attributable to new unfunded liabilities from under performing investment returns. If returns are above 6% (as in the example above) but below 8%, the employer will have increasing contribution rate costs, but it would have had them even without the POB. When investment returns are less than the POB interest costs, the POB puts additional strains on financial operations rather than helping.

While the 1990s produced some impressive investment returns, no pension fund consistently earns 8% or higher every year in perpetuity; returns vary dramatically and may (or may not) average the investment return assumption or even the POB interest rate cost. The POB paradigm has a goal to average or beat the 8% investment return assumption over the long-term. With the appropriate asset allocation strategy this goal may be attainable, but market experience over the last several years has led some to believe that an 8% return assumption may be too aggressive.

Another factor in evaluating the success of a POB is that its full effect can only fully be tallied at final maturity of the bonds. Due to market gyrations, a POB may look like a great success for several years, or even a decade, only to see investment gains erode, and at maturity are pronounced a failure. Conversely the exact opposite may be true, with poor results in the early years later overcome to achieve projected benefits in the final analysis.

In any event, we do know that even if projections are right on average over the life of the POBs, there will be years with returns that are higher, and some that are lower (maybe significantly), than the 8%

bogey. We do not have to look back very far to see evidence of such swings: in fiscal 2001 the S&P500 index of domestic equities fell 16%, in 2002 it fell another 19%, but in 2003 it fell only 1.6%. These market declines hurt issuers with POBs outstanding: most had to pay increased contribution rates to cover the new actuarial losses, plus they had the higher debt service costs due to the POB.

The risk of adding too much leverage is another factor for POB issuers to consider. Borrowing for any purpose increases leverage, and incurring debt to pay unfunded liabilities is no different. While the issuer is substituting one type of long-term liability (POB) for another (UAAL), there is a difference. In most cases, bond debt service is a "harder" obligation than the "softer" contribution payments used to amortize the UAAL. Bond debt service must be paid in full and on time or the issue falls into default, with wide ramifications. For certain employers, contribution payments, on the other hand, may be temporarily deferred or reduced without serious negative consequences. Therefore, the size of the POB relative to the total debt structure of the issuer must be measured in terms of what level of debt service can be managed if actual future investment returns do not meet the original POB plan projections.

Because POBs generate very large infusions of funds into the pension system compared with the more steady investment and reinvestment of interest, dividends, and contributions by the fund, the plan for investing POB proceeds must be considered. Should the monies be invested according to the existing asset allocation guidelines, or should POB proceeds have a special allocation strategy because of current market conditions or expectations? If the chief investment officer of the fund believes that international equities, for example, are overvalued, maybe a delay in filling that allocation would be warranted. On the other hand, in that pension funds are long-term investors, most have stuck with their traditional allocations for proceeds, eschewing market timing strategies. Whatever the strategy may be, it should be fully vetted before the POB sale.

Another aspect that few envisioned when this instrument was first initiated is the political risk hidden, almost like a Trojan horse, within the POB structure. As was mentioned in a feature on this subject, ("Pension Obligation Bonds: Unique Rating Documentation", RatingsDirect, March, 4, 1999), POBs can become victims of their own success. For example, if a POB is issued for the full UAAL, resulting in a 100% funded ratio, and subsequent higher-than-average returns push the ratio to 110% or 120%, there will arise tremendous political pressure to distribute the so-called "excess" funding by increasing benefits, thus incurring new liabilities. The excess funding touted in the late 1990s turned out to be illusory. Even systems bolstered by POBs that did not increase benefits found themselves in under funded positions following the market declines from 2000 to 2003. Those that fell victim to the siren's song and increased benefits have even lower funding levels. Some pension funding ratios declined to the extent that the employers' opted to go back to the market to issue POBs for a second time.

Analysis

The rating process for POBs basically parallels that of long-term debt with similar security plus with certain additional analytical factors pertinent to the POB and pension system. Most POBs issued to date have a GO or general fund pledge. Also, a high percentage of those sold have been additionally secured by bond insurance. In Standard & Poor's analysis specific to POBs we focus on the effect of the bonds on the issuer's debt structure and its ability to meet its obligations. The financial review includes the impact on both the balance sheet and the operating statement or cash flows. The status of the issuer's pension fund on a pro forma basis is also part of the review as with any similar analysis.

From the balance sheet perspective, we look at how the POB fits into the issuer's total debt plan. Does the POB dramatically alter the issuer's debt profile? We look at total debt with and without the POB so as not to penalize a POB issuer in comparison to another issuer that might have relatively low debt (and no POBs) but sizable unfunded pension liabilities. Also, we evaluate the leverage added by the POB. Does it markedly increase hard, fixed costs (bond debt service) in place of a softer, more discretionary obligation (pension contributions)? If sub par investment returns put upward pressure on contribution rates will they, coupled with the new higher debt service costs due to the POB, put the issuer's budget under greater strain? The issuer must also be cognizant of the effect the POB issuance may have on statutory debt limits. Will the POB use up debt capacity that might be needed for other, more pressing needs?

From a cash flow standpoint, Standard & Poor's reviews projected debt service and contribution costs, with and without the POB, including the validity of the assumptions including those for POB interest

costs and pension fund investment returns. How do the projections compare in total and on an annual basis? The spread between interest costs and investment return generates the savings expected from the transaction. What is the magnitude of annual savings and total present value savings? Where (in what years) are the savings taken? Are the savings front-loaded in an attempt to mask budgetary stress? Will any front-loading lead to higher, unsustainable contribution rates in later years? Do the potential savings form the POB outweigh the risks involved The analysis of the cash flows is a critical component to understanding the full impact of the transaction.

As part of the POB analysis we also review the current status of the recipient of bond proceeds — the pension system itself. What is the statutory relationship between the issuer/employer and fund? How have the laws and precedents for making contributions affected funding progress and how do they play into the POB strategy? Have funding levels generally been increasing over time? What are the funding goals and how will the POB impact these objectives?

The pension fund's general actuarial methods and assumptions also will be reviewed for comparative purposes. The fund's asset allocation strategy will be studied for consistency with the POB assumptions and for the general risk profile. An aggressive investment strategy may make the POB objectives more difficult to achieve on a consistent basis.

Rating Implications

Employers looking to help manage their unfunded liabilities through the issuance of a POB should weigh the pros and cons very carefully. Any applicable risks from the above list should be evaluated. There should be a clear POB plan with attainable actuarial and investment assumptions and a conservative structure. Prudent allocation for projected savings over time limits the chances for problems

It is possible for POBs to have a negative effect on credit quality, especially in the investment environment over the last several years or if they were structured poorly at the outset. Standard & Poor's will continue to evaluate POB risks in light of each employer's individual profile at the time of sale as well as their projected effects over time. POBs may work as planned over the long-term, but short-term fiscal dislocations resulting from these structures are part of their baggage.

Special Rating Documentation Requirements for POBs

The unique nature of POBs requires certain additional documentation not normally requested for other types of ratings:

- POB financing plan, including its effect on the overall debt plan;
- Projections of UAAL contributions and debt service with and without the POB;
- Latest pension fund annual report;
- Most recent actuarial valuation and experience studies of the fund; and
- Pension fund's current asset allocation strategy and plan for investing POB proceeds.

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Research:

Managing State Pension Liabilities: A Growing Credit Concern

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State governments have a long history of providing retirement security for their employees--and in many cases certain local government employees--through large, defined benefit pension systems, which, throughout the 20th century, had been successful in meeting their intended goals. However, after state pension funds reached their apex of financial soundness, based on funding levels in 2000, they have since deteriorated--in many cases precipitously--leaving most funds with the problem of managing new, large unfunded liabilities. The rapid growth and significant magnitude of these liabilities has become an increasing credit concern for many state ratings, reaching crisis proportions in some cases.

This article provides a brief overview of public pension funds in the U.S., along with the factors leading to their current status and some of the options available for managing pension liabilities. In addition, the status of a number of state funds, with a range of funding levels, and some of the strategies states have used to address their respective pension situations, will be examined.

Historical Background

Defined benefit pension plans, as used by most states, provide a systematic method for setting aside sufficient monies to pay promised retirement benefits to employees in the future. The benefits are funded by contributions, usually from both employer and employee, and the investment income derived from such contributions. Most states have two principal funds: one for state employees, and possibly certain local government employees, called public employee retirement systems, and one for teachers, referred to as state teachers' retirement systems. Some have one, monolithic system for all government employees (state and local), while others have multiple systems for individual job specialties, such as judges and safety officers.

Public pension funds in the U.S., of which the lion's share of assets belong to state funds, have come a long way from their humble beginnings--some dating to the beginning of the 20th century. Starting with little or no assets to offset liabilities, and some initially operating on a pay-as-you-go-basis, pension funds gradually improved their funding ratios (actuarial value of assets divided by actuarial accrued liability) to the 50% level in the mid-1970s, and further to around 80% by 1990. Early on, pension assets were invested largely, if not exclusively, in fixed income investments. Gradually, investment strategies became more diversified, however, and by the end of the 1990s public funds had increased their allocations to equities and other higher yielding asset classes significantly. This shift in allocations coincided with, and to some extent was fueled by, the bull markets in domestic equities that lasted from the early 1980s through fiscal 2000. At June 30 (the fiscal year-end for most public pension funds), 2000, the average funding ratio for all U.S. public funds was slightly above 100%, and was even higher for state funds.

The party to celebrate the final defeat of unfunded pension liabilities was short-lived, unfortunately, as dark clouds soon began to appear. Trends that would adversely affect actuarial balance impacted both liabilities and assets. Liabilities were being inflated not only by normal growth and inflationary pressures but also by overt changes in benefits and actuarial assumptions. The late 1990s saw a number of improvements to pension benefits, which automatically boosted liabilities, and the actuarial consequences of many of these changes really kicked in after 2000 due to the normal delayed reaction in contribution increases. Demographic and lifestyle trends--along with the resultant assumption changes, such as retirees living longer (a global phenomenon) and more employees taking early retirement--had a similar, expansionary effect on liabilities. However, the biggest component in the steep decline in funding levels from fiscals 2001 to 2003 came from the asset side, and was caused by the bottom falling out of the domestic equity markets. The investment return assumption requirement for most public funds to maintain actuarial balance, about 8%, could not be sustained when the average allocation to domestic equities stood at 40%-50% and the annual returns of the S&P 500 Index were

negative 13%, negative 19%, and positive 2% in fiscals 2001, 2002, and 2003, respectively. The net result was that, by June 30, 2003, average funding ratios for state funds had fallen from an average overfunded level in 2000 to an estimated 80%-90% in just three short years. While the S&P 500 saw a 17% gain at fiscal year-end June 30, 2004, public pension fund actuarial results, on average for the year, will not report major funding gains due to the effects of the actuarial smoothing of gains and losses over a period of years used by most. With five-year smoothing, for example, a fund in fiscal 2004 would still be accounting for a portion of the losses (or gains) from the prior four years.

Alternatives to Improve Funding

The range of options to fix a pension mismatch of assets and liabilities is relatively narrow, and almost all are difficult to implement due to legal, economic or political impediments. Corrective measures should act to stop or slow pension liability growth or grow assets, or both. From a liability standpoint, most states have constitutional or statutory pension benefit protections that preclude any reductions in benefits already promised to existing employees. One way around these restrictions is to close off the current benefit to new employees and offer new employees a reduced level of benefits. This tactic of creating a new tier of benefits has been used by a number of funds to reduce liability growth. Completely closing existing plans and creating new, less generous defined benefit plans, and even new defined contribution plans, is another option.

Changing actuarial assumptions to reduce liabilities has been used in the past; the current demographic and economic realities related to the major variables, however, make these options difficult. The raising of the actuarial investment return assumption to 8.25% from 8.00%, for example, would automatically lower actuarial liabilities, all other assumptions being equal. However, the investment experience over the past three or four years and current expectations would tend to preclude such a change at this time.

The principal options to improve pension balance by increasing assets fall into three main categories:

- The pension fund may alter its asset allocation strategy to enhance investment returns;
- The pension fund sponsor may sell pension obligation bonds (POBs), placing the proceeds in the pension trust and thus reducing or eliminating the unfunded actuarial accrued liability (UAAL); and
- Annual contribution rates for sponsors or employees may be increased.

Pension funds in the U.S., as major global investors with more than $2 trillion in assets, have developed sophisticated asset allocation plans over the years, and, with access to professional asset managers, attempt to maximize returns within their prescribed tolerance for risk. For an individual fund to dramatically enhance yields by altering its allocations, there would most likely need to be a sea change in thinking about the fund's view of risk. Minor tweaking of strategies is a more regular occurrence as funds seek to keep up with changing markets, risk profiles, and expected returns of various asset classes, but major strategy changes leading to markedly improved results are rare.

Some states, as sponsors, have opted to pursue the POB route to significantly boost assets in one bold move, while at the same time taking advantage of the projected lower carrying charges this vehicle offers to a sponsor. (For further information, see report titled "Pension Obligation Bonds Are Surging After Brief Hiatus," published Jan. 20, 2004, on RatingsDirect). While no panacea, POBs are basically an arbitrage play based on the premise that, as a result of the bond proceeds being invested at an expected yield above the cost of the bonds, net savings will be achieved by the sponsor over the life of the bonds. In other words, after the issuance of the POB, combined debt service plus pension contribution costs will be lower than they would have been without a POB. The success of this formula depends on the realization of a certain investment return, which is in no way guaranteed. Whether a POB succeeds or fails cannot fully be evaluated until the final maturity of the bond, and it is a given that some years will be winners and others losers. The bad years may add short-term fiscal stress to the POB issuer (pension sponsor), which could be significant based on the amount of leverage the POB exerts. With most POBs having been issued over the past 10 years or so, it would be premature to pronounce them an unqualified success (or failure). The best that can be said to date is that POB results have been mixed, with some having met or exceeded expectations while others have come up short based largely on the vicissitudes of market timing.

The last major option for increasing assets, and the most common alternative used to manage new, unfunded liabilities, is to simply increase annual contribution rates. Indeed, a major principle of an actuarially funded defined benefit plan is that, if assets and liabilities become unbalanced, increasing

(or decreasing if the system is overfunded) contributions will bring the system back into balance. Sometimes employee contributions are increased, but usually it is the sponsor that steps up to the plate: the investment risk of a public defined benefit plan and the burden to make good on benefit promises are ultimately the responsibilities of the sponsor. Thus, the principal byproduct of the current state pension funding crisis has been increasing contribution costs coming at a time when states, in recent years, have been squeezed by weak revenues and burgeoning expenses, including security and health care cost pressures.

How Are Some States Managing Their Pension Liabilities?

Arizona.

The Arizona State Retirement System, a multiple-employer defined benefit plan, provides pension benefits for employees of the state, political subdivisions, and public schools, with more than 500 employers and 222,000 active members. The system's funded ratio fell to 98.4% at June 30, 2003, after a decade of more than 100% funding. As reported in the June 30, 2003, actuarial valuation, the major contributor to this decline was investment losses for the year that resulted in a decrease in the actuarial value of assets by $1.2 billion. In November 2002, the state retirement system board removed the requirement that actuarial assets be within 20% of market value, and changed the period for recognizing investment gains or losses to 10 years fr ve years. At June 30, 2003, the system's market value of assets ($18.1 billion) was 77% of actu value. The 2003 actuarial valuation developed hypothetical contribution rates for both employees and employers (odd-year calculations are not actually implemented) of 6.96% each, compared with 1.92% each in 2001.

California.

California has two large state pension funds: one for state and certain local employees--California Public Employees' Retirement System (CalPERS)--with assets exceeding $170 billion; and the other for teachers--California State Teachers' Retirement System (CalSTRS)--with more than $115 billion in assets. These systems have been experiencing some of the same pressures as pension funds in other states, and have experienced declines in funding levels. For example, the funded ratio for the state member category of CalPERS had fallen to 84% as of June 30, 2003, compared with 111% in 2000. State contributions to CalPERS for its employees, as actuarially determined, have risen from $160 million in fiscal 2001 to $2.2 billion in fiscal 2004. In the same vein, the funded ratio for the CalSTRS defined benefit plan fell from 110% in 2000 to 82% in 2003. However, total amounts contributed to CalSTRS by members, employers, and the state, as set by statute, increased just 10% during the same period.

A number of changes for both pension systems have been proposed over the last year. In relation to CalPERS, the state's 2005 budget included certain pension reforms, such as a two-year delay of contributions into CalPERS from new miscellaneous and industrial employees, thus obviating the state's obligation to make contributions on their behalf over that period. A $900 million POB was proposed, the proceeds of which would be used to pay a portion of the current contribution payment as opposed to paying a portion of the unfunded actuarial accrued liability like most other POBs. Court validation of the POBs is being sought. The 2005 state budget also included proposals to increase employee contribution rates and lower benefits for new employees to pre-1999 levels.

In December 2004, CalSTRS proposed a number of options to help address the funding deficiency in its defined benefit plan. At June 30, 2003, the system's unfunded actuarial obligation totaled $23.1 billion. The first option was for the state to issue a POB to pay down the entire liability. Other options included a change in the amortization period of the unfunded liability and a number of changes to how benefits are calculated. One option that could have a large effect on the amortization cost is to eliminate the 2% benefit adjustment. Several alternatives included increases in contribution rates by all three contribution bases: members, employers, and the state.

On July 1, 2003, the state did not make its full contribution payment to CalSTRS' supplemental benefit maintenance account, although it did make the required payment to the system's defined benefit program. The state paid $59 million of the $559 million required supplemental benefit maintenance account amount. In October 2003, CalSTRS filed suit in Sacramento County Superior Court to have the $500 million payment restored. The state is currently defending the action.

Of late, proposals to replace the two California state defined benefit plans with defined contribution plans, and to eliminate state contributions to CalSTRS, have been actively debated.

Florida.

The Florida Retirement System was created in 1970. The system was created to provide a defined benefit pension plan for participating employees. The plan is administered by the state division of retirement in the department of management services. Participation by local governments in the state is optional, but is generally irrevocable once the government opts to participate in the plan. Currently there are 866 participating employers and 956,875 individual participants. Of the total participants, 23.5% are retirees and beneficiaries. Contrary to trends for most other states, the actuarial value of assets in the system has consistently exceeded the actuarial accrued liabilities in recent years. The funded ratio of the pension system has ranged from 112% in fiscal 2004 to 118% in fiscal 2000. Investment performance in fiscal 2004 was strong, with a return of 16.6% compared with the 7.75% assumed rate of return. The actuarial value of assets at July 1, 2004, was $106.7 billion. The solid asset position of the Florida Retirement System has provided budget relief in the form of lower contribution requirements for the state and participating local governments.

Illinois.

Illinois sponsors five defined benefit retirement plans for about 630,000 members and annuitants, including public employees, teachers, university personnel, and judges. By 2003, the funded ratio of the Illinois funds ranked near the bottom compared with other states in the U.S. Contributing to the $26.9 billion increase in unfunded liabilities from 2000 to 2003 were:

- Contribution shortfalls ($4.8 billion of the total),
- Investment losses ($14.1 billion), and
- Benefit improvements ($3.3 billion).

Adding to the state's pension woes is a 2002 early retirement incentive plan for state employees, which resulted in a liability that, at $2.5 billion, was quadruple the original estimate. Part of the variance was due to a much larger number of employees (11,032) taking part in the program than originally projected (7,215). Due to the requirement of a 10-year amortization of this liability, the early retirement program contribution for 2005 is $382 million, compared with the originally projected $70 million.

In 2003, the state sold a $10 billion POB, the largest on record, using the proceeds to fund a portion of the UAAL ($8.1 billion) and to pay ($1.9 billion) the state's current pension contribution for fiscals 2003 and 2004. The POB increased the combined system's funded ratio by seven percentage points. At the end of fiscal 2003, the funded ratio for the combined systems was 57% (after giving effect to the POB), and the UAAL was $35.8 billion.

New York State.

The New York State comptroller is the sole trustee of the state's common retirement fund, which includes all assets of the New York State Retirement System. Members of the system are typically employees of New York State or employees of municipalities in the state (excluding New York City). As of March 31, 2004, there were 2,985 participating government employers in the system. The overall membership in the system exceeds 970,000; this includes 641,721 members and 328,357 retirees and beneficiaries. Overall, membership has expanded continuously, but the growth from retirees has been most significant. Retirees now make up 34% of the system's members, compared with 26% in 1990. Benefit payments continue to rise, reflecting improvements in final average salaries, cost of living adjustments, and benefit improvements. The increased benefit payments, coupled with the performance of the stock market after 2000, have required significant employer contribution increases, with significant increases forecasted for the next two years as well. At March 31, 2004, about 63% of the pension system assets were invested in various stocks. For the largest component in the system--the New York State and Local Employees' Retirement System--employer contributions had averaged 1.75% from fiscals 1996 through 2003. Contributions will increase in fiscal 2004 to 5.9%, totaling $1.2 billion. This rate is projected to more than double in fiscal 2005 to 12.9%, or a $2.6 billion contribution, followed by an estimated 11.4% contribution rate in fiscal 2006. Similar increases are forecasted in the New York State and Local Police and Fire Retirement System (PFRS) for fiscal 2004. The contribution rates for fiscals 2005 and 2006 are projected to be even steeper for PFRS, however, growing to 17.6% and 16.3%, respectively. These contribution increases have been, and will continue to be, a significant source of budget pressure for the state and its local governments. The legislature has allowed a portion of the increase to be funded with the issuance of bonds or a loan from the state comptroller. For governments that choose this option, fixed costs to service pension contributions will include an interest component, with the fixed costs extended for up to 10 years. The system uses the aggregate actuarial funding method, which does

not identify or separately amortize unfunded actuarial liabilities. Due to the use of this funding method, there is no disclosure or schedule provided on funding progress.

Oregon.

Oregon has historically delivered pension benefits for state and local employees through a single system called the Oregon Public Employees Retirement System (OPERS). After experiencing relatively high funding levels through the 1990s, the UAAL of OPERS at Dec. 31, 2001, was estimated at $9.7 billion, almost three times the prior year. With 2002 investment losses, this figure was estimated to be almost $15 billion--of which about one-third was the state's share. Contributing factors to the increase in UAAL included some of the usual suspects: benefit increases in the late 1990s and poor investment returns. In addition, under the plan, tier-one members were guaranteed a minimum 8% on their regular account assets regardless of actual investment returns earned by the system, and in 2001 and 2002, like most other funds, the system generated negative returns.

In 2003, the state initiated a number of reforms to OPERS, including:

- Modernizing the mortality tables and requiring regular updates;
- Shifting future employee contributions to a defined contribution plan;
- Converting the annual 8% guaranteed rate of return to an assumed 8% to be received over the length of members' service;
- Temporarily suspending future cost of living increases for retirees in certain instances; and
- Creating a new, more independent, retirement system board.

In addition, for new employees hired after Aug. 29, 2003, the state created a new retirement plan called the Oregon Public Service Retirement Plan, which includes both defined benefit and defined contribution components. Employer contributions fund the defined benefit plan, and employee contributions fund the defined contribution plan.

The legislative changes to OPERS resulted in an estimated reduction in the state's UAAL to $2.2 billion from $4.6 billion. A number of lawsuits have been filed challenging some of the OPERS changes. The state intends to continue to defend the challenges. In October 2003, the state sold $2 billion of GO POBs to further reduce its UAAL. The preliminary results of the OPERS 2003 actuarial valuation reported the pension system's funded ratio at about 97%. Employer contribution rates under the valuation showed an increase to 18.27% from 9.96%.

West Virginia.

The West Virginia Teachers' Retirement System (TRS) is a multiple-employer, defined benefit plan for 55 county school systems, certain state higher education employees, and the state boards of education and higher education. The state provides substantially all funding for the system. TRS has occupied the bottom rung among state plans in terms of funded ratios for some time. As of July 1, 2003, the funded ratio was 19%, and the UAAL was $5.1 billion. The state supreme court has ruled that the UAAL of TRS is a public debt, and has required the state to fund TRS in an actuarially sound manner. This requirement entails the elimination of the UAAL over a 40-year period beginning July 1, 1994, enabling TRS to meet cash flow requirements to fulfill future obligations to members.

While for a number of years West Virginia has attempted to clear the way to issue a POB to help lower or eliminate the UAAL in TRS and other state funds, its efforts have been blocked by legal issues, including the requirement for voter approval. If bonding is not an option, the state may have to pursue other avenues to cure its pension ills.

Looking Ahead

States are under varying degrees of pressure to fund the burgeoning liabilities of their pension systems. The common theme lies in developing strategies to manage increasing contribution rates at a time when other demands are conspiring to break the budget: growing health care, education, and security costs to name a few. Options to reduce pension liabilities or even slow their growth, and thus moderate contribution rates, are few and usually difficult to bring to fruition. Even with adequate investment returns, the pension funding problem will be in the forefront for at least a few more years, and possibly much longer if the markets don't cooperate. As if pension liabilities were not enough to handle, states and other governments will soon have to deal with funding issues related to liabilities from Other Postemployment Benefits (OPEB)--largely retiree health care costs. The GASB has established new accounting rules for reporting on OPEB liabilities. (For further information, see report titled "Reporting &

Credit Implications of GASB 45 Statement on Other Postemployment Benefits," published Dec. 1, 2004, on RatingsDirect.) Both pension and OPEB liabilities will act to constrain ratings over the foreseeable future.

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Research: Pension Obligation Bonds: Were They A Good Bet?

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What do the volatility in equity prices and the decline in market indices over the past year or two mean for the security of public pension investments and, further, what is their effect on the strategy, used by a number of governmental pension sponsors over the last decade, of selling pension obligation bonds to fund the unfunded liability of their pension funds? Specifically, given the current and expected market conditions, was the POB strategy a good idea and, if so, does it still have validity, and does this technique represent a viable opportunity for governmental sponsors who may find themselves wrestling with unfunded liabilities as a result of the declines in equity performance?

Brief History

While a few POBs were done in the 1980s, they really came into their own in the 1990s with more than $10 billion being sold. Over the last two years, only a few, relatively small, POBs have been floated. The average principal amount for POBs ranged from $100 million to $300 million with a few exceeding $1 billion or more. Most POBs issued to date have been general obligation or general fund secured, capitalizing on the credit quality of the pension system's sponsor.

The POB Experience Through 2000

With this kind of debt instrument, timing is very important and issuers of POBs in the early- to mid-1990s could not have had better timing. While public pension funds during the 1990s were boosting their average allocations in domestic equities from 33% to almost 50%, the returns on this asset class were sustained at levels well above the historical experience. The average annual increase in the S&P 500 index for the 10 fiscal years ended June 30, 2000 (most public pension funds have June fiscal years), was almost 16%, compared to a historical average of about 10%. The five-year total portfolio return for public funds has averaged more than 13%. These performances should be viewed in the context of average investment return assumptions for public pension systems of only about 8%.

Following the issuance of POBs to increase the funding status or to fully fund a system, this excess return phenomenon could easily result in funded ratios greatly exceeding 100%. However, in that actuarially funded pension systems tend to be self-balancing, this overfunding imbalance would have been corrected by actions taken to affect either the pension fund's assets or liabilities, or both. In these circumstances, pension fund sponsors would, upon the recommendation of their actuaries, decrease or temporarily eliminate pension contributions (contribution holiday), thus slowing the growth of assets. On the liability side, some sponsors made the decision to improve employee benefits, instantly increased liabilities but also balancing overfunding. Regardless of how the "problem" of overfunding was managed by sponsors or pension funds that used POBs prior to fiscal 2000, POBs produced, as promised, an economic benefit and in most cases it was substantial.

2001: Harbinger of Tough Times for POBs?

For the fiscal year ended June 30, 2001, the S&P 500 declined 15.8% (and fell a further 15% in the next quarter), which was its worst performance since fiscal 1982. This fiscal 2001 result followed the below-average performance of positive 6% for fiscal 2000. Following two decades of above-average equity returns, it is probable that these returns will approach the historical pattern going forward.

While a long-term environment of weak investment returns will lower pension funding levels, it may be premature for issuers of POBs and pension funds in general to adjust investment expectations based on the most recent results. As more data become available, if it is apparent that a trend is developing, some reactive changes made be needed. Regardless of the causes, any investment underperformance over an extended period of time will lead to actuarial losses and new unfunded liabilities, resulting in the need to increase contribution rates to bring the systems back into balance. It should be kept in mind that such a need would be in sharp contrast to recent years, when a decrease in the needed contribution rates actually provided budgetary flexibility for fund sponsors. Many funds now use smoothing methods for actuarial purposes in valuing assets to spread investment gains and losses over up to five years. This practice would temper the effects of the fiscals 2000 and 2001 investment return experience. With five-year smoothing, for example, only 20% of the fiscal 2001 losses would be included in the June 30, 2001 valuation, which would still be taking into account prior year gains as far back as 1997.

No matter how sponsors who utilize a POB strategy choose to manage their actuarial gains from the excess investment returns following POB sales (lower contributions or increased benefits), most are likely still fully funded, albeit with a lower cushion. In a long-term lower return environment with declining funding levels, those systems that have taken the bulk of their excess funding out of their POB structure may see trouble ahead.

For example, say a state sold POBs in 1985 with a 30-year amortization to fully fund its retirement system and had average annual investment returns of 12% against its investment assumption of 8%. However, instead of permitting the natural increase in the funded ratio that these conditions would have caused, the state managed its funding ratio, through contribution holidays and benefit improvements, to maintain the ratio at around 100%. If we are in fact heading into a lower return period (the average annual increase in the S&P 500 for the 16 years from 1966 to 1982 was a meager 2.7%, for example), the state may have already reaped all its gains from the transaction structure and be headed for losses. If actuarial losses start to be incurred, contributions will have to increase. If returns fall below the interest cost on its POB that will mean that the POB will have become a net financial drain. If investment yields fall below POB interest cost, total debt service, including that on the POB, plus normal and new unfunded actuarial accrued liability (due to low returns) contributions, will now be higher than if the POB had not been sold. To judge the full effect of a POB, however, any future losses have to be weighed against prior period gains. With a POB, its ultimate success, or failure, can only be judged at its final maturity is approached. The financial dynamics may be a winning formula for 25 years, for example, and then a losing one in the last five years (or vice versa).

POBs Going Forward

Standard & Poor's factors the effects of a pension obligation bond strategy into the long-term rating of the sponsor. Standard & Poor's has viewed POBs as a strategy for savings on carrying charges as long as the transaction was structured conservatively and the assumptions were reasonable and attainable. This requires a clear financing plan including reasonable assumptions and manageable leverage. Prudent expectations for investment returns and the cautious use of resultant savings help insure a POB's success. Another positive factor for a POB is, of course, to be fortunate enough to sell the bonds in a low interest rate environment, thereby increasing the spread between interest costs and investment return expectations and lowering the risk of underperformance. The long-term expectations for investment returns have not yet changed because of the recent return experience or current economic and political conditions and public funds will rely on diversification of investments to maintain necessary total returns. Thus, a sound POB plan today should be as viable as it was 10 years ago. The 2000 Public Pension Coordinating Council Survey of State and Local

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Research:

U.S. Public Pensions Face Uncertain Times

Publication date: 24-Jun-2003

Credit Analyst: Parry Young, New York (1) 212-438-2120; Neil Bulspan, New York (1) 212-438-1792

Public pension plan costs are becoming a bigger drain on U.S. state and local government resources. Many state and local governments have been hit particularly hard in the past several years as they struggle with their worst deficits in decades.

While current government employees watch their pension and other post-retirement benefit contributions rise sharply, a growing number of retired employees are becoming concerned about the future of their own pensions.

As the various governmental jurisdictions decide how they will raise the money needed to fund these mounting benefit obligations, and how to target the root cause of the funding gap, Standard & Poor's Ratings Services is taking a closer look at pension and other post-employment benefits (OPEB) issues. This article examines the credit implications of pension benefit and OPEB obligations and how accountants are revisiting the way municipalities can best reflect the true benefit obligations.

Credit Implications

When Standard & Poor's credit analysts determine the credit implications of public pension obligations, they look at these liabilities in the light of an employer's total debt structure with an eye for what the consequences may be on the employer's ability to pay debt service in meeting these benefit obligations.

"We want to have a reasonably current accounting of the retirement system's funding status, and an understanding of how the employer plans to manage these liabilities," said Standard & Poor's credit analyst Parry Young. "Pension liabilities help shape an employer's credit profile, and the magnitude of the current challenge for some could contribute to rating downgrades. While some previously well-funded plans are in a better position to handle the new liabilities driven by poor investment returns and benefit enhancements, most plans and their sponsors are between a rock and a hard place," Mr. Young said.

Other than facing the music and increasing contributions, the options for employers with increased unfunded liabilities to make significant funding progress are very limited. On the liability side of the ledger, reducing benefit levels, which would lower liabilities, is very difficult to accomplish and frequently constitutionally prohibited.

For example, in the state of Oregon's retirement system, member accounts were credited with a minimum 8% annual return even if the fund's market gains fell below that level. The state is trying to reform this and certain other features of the system, which would reduce the system's total liability by billions of dollars. These changes would be tested in the courts.

Changing actuarial assumptions could also result in decreased liabilities; however, the trends affecting some of the major assumptions are going in the wrong direction. For example, with employees generally living longer, demographic assumption changes usually serve only to increase liabilities. Some sponsors have delayed the implementation of updated mortality tables, but this only delays the inevitable impact on liabilities.

On the asset side, because of the weak investment performance over the last several years, the upside potential for higher investment return assumptions is rather slim. The only recent changes to investment return assumptions have been downward adjustments, which again increases liabilities.

Another option for states is to defer or adjust contributions. In many cases, however,

the states must make the full payment. Partial payments may be possible in any one year, but anywhere from 70% to 90% of employers generally make the full actuarially required contribution. Illinois has a continuing appropriation: once the actuary decides on the rate, the state has to make that contribution. In several California counties, if the board of supervisors does not make the contribution set by the actuary, the county's independently elected auditor must take available county funds and place them in the pension trust fund.

"It's a pretty strong mechanism," Mr. Young said. "Omitting or reducing contributions may be a short-term budgetary fix, but it does not solve the unfunded liability problem."

■ The Pension Obligation Bond Solution

Another solution to funding pensions is for states to issue pension obligation bonds (POBs), the proceeds of which are used to fund the plan and reduce the liability.

"But you are left with a bond on your balance sheet," Mr. Young said. "The primary risk is that you do not achieve a high enough investment return to cover the POB debt service cost or the actuarial investment return assumption, in which case the shortfall results in new unfunded liabilities. Under this scenario, which has been the experience over the past several years, POB issuers are incurring new unfunded liabilities, and higher contribution rates related to that, on top of the additional expense of POB debt service," he added.

Over the long-term, a POB might still be a workable solution, but in the short-term, they may add to fiscal stress, according to Mr. Young. A number of California issuers that issued POBs in the 1990s experienced poor returns, enhanced benefits, and adverse legal decisions, have reached reduced funding levels to the point where they are issuing POBs again. Hundreds of millions of POBs have been sold since May 2002, mainly by California counties, along with more than $15 billion during the 1990s. Several large POB issues are planned or have been completed, including one by Illinois for $10 billion.

■ The Evolution of Pension Accounting

Pension accounting has been dormant for many years, but the weak economic conditions are bringing it to light again, according to Standard & Poor's Chief Accountant Neri Bukspan. Worldwide, accounting standard setters, including the Government Accounting Standards Board (GASB), the U.S. Financial Accountants Standards Board, the International Accounting Standards Board (IASB), and the U.K. Accounting Standards Board have all announced, or are in the process of declaring numerous standard-setting activities related to accounting for pension and OPEBs, including changes to the required disclosures.

For example, the IASB will decide whether "smoothing," a feature that makes it appear that a company is experiencing gains when they are actually recording losses, is acceptable. By 2005, all EU-listed companies are required to adopt International Accounting Standards, and expected to reflect pension and OPEB obligations and related assets.

The recently issued GASB OPEB Exposure is important because OPEB liabilities previously were not required to be reflected as an obligation by governmental equity. However, once the exposure draft is finalized, accounting for OPEBs will substantially conform to the accounting for pensions. Pension and OPEB obligations are difficult for analysts to monitor due to the inherent uncertainties associated with the estimation process, the complexity and inconsistency of the applicable accounting models, and the lack of sufficiently robust and timely disclosures.

To complicate matters, employers use an assortment of plans: defined benefit, defined contributions, insurance contracts, pay-as-you-go, single-employer and multiple-employer arrangements, or any combination of these programs.

The funding requirements also change; the government dictates some and local funding regulators dictate others. "Many times the actual funding to a plan could exceed the minimum funding rules, and different jurisdictions have different objectives

when establishing the minimum funding requirements," Mr. Bukspan said.

Unlike pensions, OPEBs are generally funded on a pay-as-you-go basis, which has a cash stream that is very different from a pre-funding cash stream. However, cash outlays, even in a pay-as-you-go program, can become extensive, particularly because of early retirement and downsizing.

Due to the changing economic circumstances, sponsors are revisiting their pension assumptions, curtailing benefits in many circumstances, and revisiting funding needs and policies. "There are near-term liquidity implications, as evidenced by pension obligation bond issuance, sale of noncore assets, and contributions of noncore assets to the pension plans," said Mr. Bukspan.

Although plan surpluses may be beneficial from a credit perspective, they cannot be viewed as cash equivalents, since the employer's practical ability to tap them directly is generally limited.

In its analysis, Standard & Poor's considers the ability of an entity to actually use the surplus, whether or not it is reflected in its financial statements. Depending on the local laws, when a surplus exists, the employer can curtail contributions, or may use a portion of the surplus to fund other benefits. An employer may also be able to enrich pension benefits in lieu of wage increases and fund downsizing through early retirement programs.

For public pension funds, any "excess" funding advantages flow to a sponsor through the pension contribution mechanism in the form of lower or temporarily omitted future contributions ("contribution holidays"). Laws and regulations do not allow sponsors to directly remove such excess funds from a pension trust fund.

■ The Future of Public Pension Plan Scrutiny

For Standard & Poor's, the challenge is — as it always has been — to collect the most accurate information possible about the potential implications of a benefit plan on the entity's financial position and cash flow to understand the potential exposure involved. Standard & Poor's will be paying close attention to actual and potential liabilities and cash flow requirements of state and local governments arising from pension and other post-employment benefits.

By Will Siss

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February 25, 2005

Representative Mike Hawker
Alaska State Legislature
State Capitol
Juneau, AK 99801-1182

Re: Pension Obligation Bond (POB) Analysis for PERS/TRS

Dear Representative Hawker:

As we discussed at our last meeting in Juneau, we are pleased to present you with our analysis of several options available to the State to improve the financial condition of PERS and TRS. We at UBS would welcome the opportunity to work with you in crafting the most appropriate strategy to accomplish this goal, including the use of pension obligation bonds (POBs) as a low-cost funding mechanism. ***Assuming a POB issue for the total unfunded liability (UAAL) of approximately $5.0 billion, this transaction would generate in excess of $1.6 billion of expected present value savings to the State.*** The State may also determine that issuing a POB for only a portion of its unfunded liability is the most appropriate funding strategy.

UBS is the leading underwriter of POBs nationally and our pension financing team has worked with numerous states and municipalities in evaluating the impact of various strategies to improve the financial health of their public pension systems. UBS believes that POBs should be viewed as one of several tools that the State should utilize in managing its current UAAL. The use of multiple strategies, including POBs, is particularly important for the State since a material portion of the UAAL is due to post-employment healthcare benefits. As you are aware, the combination of a growing UAAL and increasing State contributions to pay down this deficit will have a significantly negative impact on the State's General Fund over the next several fiscal years (and beyond). According to a report by the Division of Retirement and Benefits dated November 3, 2004, the State will face an increase in its contributions of over $108 million in FY06 alone. POBs can not only provide significant expected savings, but also a mechanism to mitigate the negative budgetary impact of paying down the UAAL over the next several fiscal years.

The attached materials are meant to serve as a reference guide for you, and they include our analysis of a POB opportunity for the State as well as published research reports by rating agencies and independent third parties on the benefits and risks of POBs. Clearly, POBs are not a panacea for the challenges of ensuring adequate contribution rates, prudent portfolio management and even overall system oversight. However, given current market conditions, POBs may offer the State an exceptionally compelling opportunity to more efficiently fund its pension system as well as manage the required future contribution rate increases to bring PERS/TRS to more appropriate funding levels.

Again, UBS would welcome the opportunity to discuss POBs and other options available to the State as it looks to address these very important issues.

Sincerely,

James Ziglar, Sr.
Managing Director

John Costagliola
Managing Director

Robert Doherty
Managing Director

cc: Senator Therriault
Senator Stedman

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Municipal Securities Group

Pension Obligation Bond (POB) Opportunity for the State of Alaska

Teachers' Retirement System (TRS)
Public Employees' Retirement System (PERS)

February 28, 2005

UBS

UBS Financial Services Inc. is a subsidiary of UBS AG

Presentation Topics

Executive Summary

Current Funding Status of PERS and TRS

- The combined total unfunded liability (UAAL) of the Public Employees' Retirement System (PERS) and the Teachers' Retirement System (TRS) is nearly $5.0 billion as of June 30, 2003
- Unlike most other states, Alaska's UAAL includes liabilities for unfunded pension benefits as well as unfunded post-employment healthcare benefits ("health benefits")

Funding Status	PERS	TRS	Total
UAAL for Pension Benefits	$ (1,356,740)	$ 438,685	$ (919,055)
UAAL for Health Benefits	4,231,112	1,644,639	5,875,751
Total UAAL	2,874,372	2,083,324	4,957,696

Source: Actuarial Valuation Reports for PERS and TRS as of June 30, 2003 ($ in thousands).

- PERS and TRS also have in excess of $445 million of total unrecognized investment losses that are scheduled to be recognized over the next four years
- The UAAL and any recognized investment losses are paid down over a 25-year period and accrue yearly interest charges at a rate of 8.25%
- The cost of paying down this UAAL will have a significant near-term impact on the State's General Fund in terms of increased contributions over the next several fiscal years (and beyond) — a report by the Division of Retirement and Benefits dated November 3, 2004 estimates an additional contribution increase of $108 million in FY06 alone

Executive Summary

Post-Employment Healthcare Benefits

- Rising healthcare costs represent a real and growing threat to the financial condition of PERS and TRS, and by extension to the retirement security of the State's retirees
- Including the cost of health benefits, PERS is 72.8% funded and TRS is 64.3% funded
- Excluding the cost of health benefits, PERS is 121.4% funded and TRS is 89.5% funded

Funding Ratio	PERS	TRS
Pension Benefits	121.4%	89.5%
Total Benefits (Pension + Health)	72.8	64.3

Source: Actuarial Valuation Reports for PERS and TRS as of June 30, 2003.

- GASB Statement 45 will require in 2006/2007 that all qualified public pension plans must begin to account for the cost of their future health benefits, much like Alaska currently does
- Although GASB 45 will not require plan sponsors to actually fund UAALs for health benefits, the State faces significant increases in its healthcare costs and should continue to seek ways to improve its funding of accrued health benefit liabilities

Executive Summary

Pension Obligation Bonds (POBs)

- Pension obligation bonds (POBs) provide a cost-effective and efficient method of improving the funding of PERS and TRS while generating up to $1.6 billion in expected present value savings
- Given current interest rates, which remain near 45-year lows, the State would be able to issue POBs at an all-in cost of funds of approximately 5.20% and eliminate all or a portion of its UAAL
- Compared to the interest charge of 8.25% on its UAAL, the State would save over 300 basis points per year in lower POB debt service payments
- The table below summarizes the expected savings from a scenario that "fully funds" PERS and TRS. The State could issue a POB for just 50% of the total UAAL (or any other percentage) and still generate significant expected savings

Expected POB Savings	PERS	TRS	Total
Deposit to System	$ 3,451,417,000	$ 2,414,746,000	$ 5,866,163,000
PV Savings	954,166,477	685,812,157	1,639,978,634
FY05/06 Relief	58,541,098	44,829,220	103,370,318
FY06/07 Relief	66,583,534	23,618,001	90,201,535
FY07/08 Relief	42,532,756	37,354,146	79,886,902
Total FY05-08 Relief	167,657,388	105,801,367	273,458,754
Gross Savings	2,482,224,569	1,844,531,505	4,326,756,074

- The expected savings from a POB can be structured to generate upfront budgetary relief, mitigate required contribution rate increases and achieve other policy objectives

Executive Summary

Expected Benefits of POBs to PERS/TRS Retirees, Employees and the State

- POBs can and should be viewed as an additional tool to manage the State's funding requirements
- POBs are not "free money" nor without risk; however, if structured properly, a POB transaction can be an efficient, effective and prudent funding mechanism
- POBs are a refinancing option available to the State and PERS/TRS to bring [full] funding sooner and reduce the impact of any necessary future contribution increases
- POBs effectively refinance the UAAL (8.25%) at the lower POB bond rate (5.20%) by replacing current UAAL payments with lower POB debt service payments
- Expected savings from POBs are generally calculated as the difference between existing projected UAAL payments versus the POB debt service that would replace them
- In its simplified form, POBs can be viewed as a refinancing of the State and its employers' UAAL obligations, whose expected savings are dependent upon the effective earnings rate of PERS/TRS over the next 25 years
- POBs are not without financial or policy risks. UBS believes that an appropriate analysis and consideration of these risks is essential and would welcome the opportunity to assist the State evaluate its options to return PERS/TRS to financial health

Managing the State's Funding Deficit

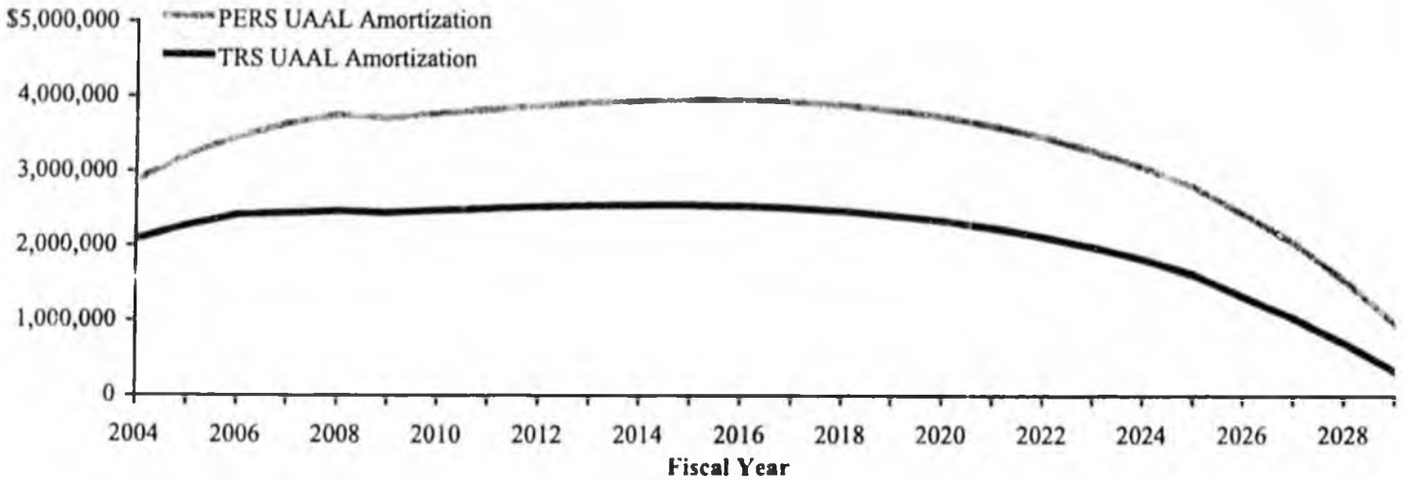
- The key to success is to identify the State's policy objectives and financing goals

- The State has several financial and policy tools available to manage its UAAL:
  - — Increase the State's and/or other employers' contribution rate
  - — Increase the employees' contribution rate
  - — Decrease pension/health benefits
  - — Improve investment returns
  - — Modify actuarial assumptions
  - — Introduce a new "tier" with higher contributions and/or lower benefits
  - — Convert from defined benefit to defined contribution plan
  - — Reduce expenditures for other State services
  - — Issue pension obligation bonds (POBs)

- POBs are just one of many options but have severa unique potential benefits and advantages:
  - — Access to lower-cost borrowing to improve funding ratios and solvency of PERS/TRS
  - — Manage current and future "effective" increases in contribution rates to amortize the UAAL
  - — Fully amortize all or a portion of the UAAL within the time limits established by statute/GARB
  - — Shape POB debt service to reduce UAAL payments in the near term and over the life of the transaction
  - — Generate substantial expected present value savings relative to actuarially determined contribution schedule

UAAL Amortization Schedules

- The current UAAL amortization period is 25 years, as established by the Board
- The total UAAL (PERS + TRS) is projected to increase to $6.5 billion in FY 2015 before beginning to decline

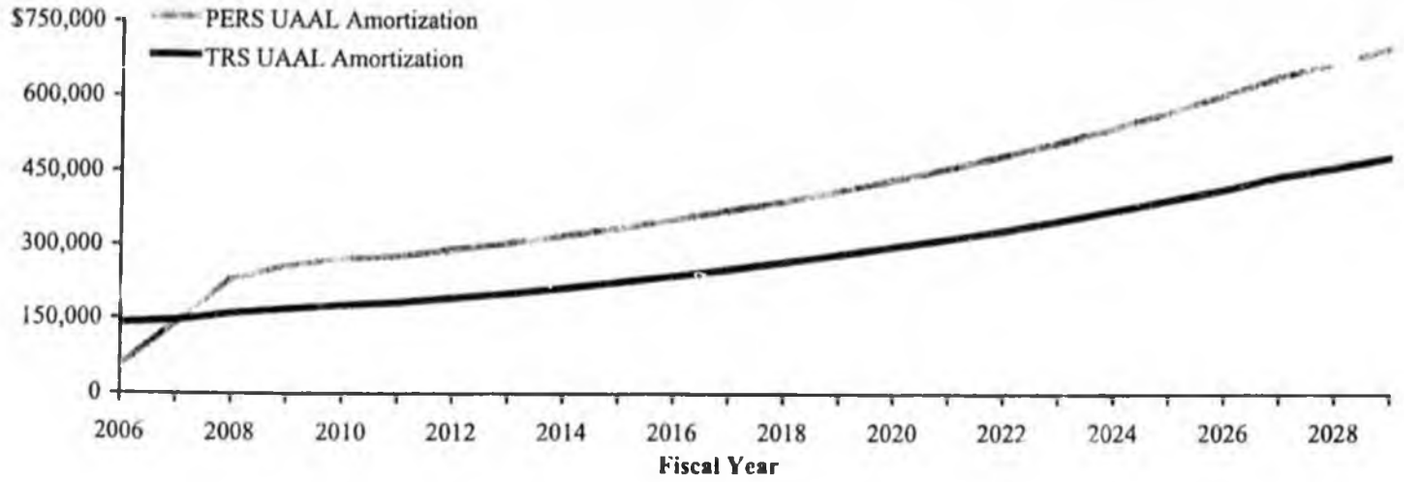


Source: Actuarial Valuation Reports for PERS and TRS as of June 30, 2003 ($ in thousands).

- The actuarially projected amortization schedules illustrated above do not fully pay down the UAAL, but do leave PERS/TRS funded at about the 95% level in 25 years
- A POB may enable the State and its employers to achieve at a lower cost this same level of funding immediately as opposed to waiting 25 years

UAAL Contribution Rates

- The State and its employers are not making sufficient contributions to PERS/TRS at the present time to fully amortize its UAAL over a 25-year period



Source: Actuarial Valuation Reports for PERS and TRS as of June 30, 2003 ($ in thousands).

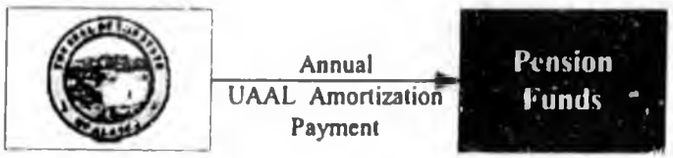
- For PERS, the total employer contribution rate for FY 2006 adopted by the Board is 16.77% versus the actuarially required rate of 25.63%
- For TRS, the total employer contribution rate for FY 2006 adopted by the Board is 21.00% versus the actuarially required rate of 38.85%
- A POB may effectively reduce or otherwise mitigate required future increases in the employer contribution rate with the use of the expected savings from the transaction

Unrecognized Investment Losses

- PERS and TRS have in excess of $445 million of total unrecognized investment losses that are scheduled to be recognized over the next four years
  - — PERS currently has a total of $295.8 million of unrecognized investment losses
  - — TRS currently has a total of $149.7 million of unrecognized investment losses
- These unrecognized investment losses will be recognized equally over the next four years
- As these losses become recognized as part of the UAAL, they will be paid down over a 25-year period and accrue yearly interest charges at a rate of 8.25%
- According to the FY 2004 CAFR for PERS/TRS, "the current asset allocation that the Alaska State Pension Investment Board for the [System's] investments is expected to provide a five year median return of 7.72%"
- Given this expectation, the PERS/TRS Board ought to consider seriously either adjusting its asset allocation or its assumed investment return rate of 8.25%

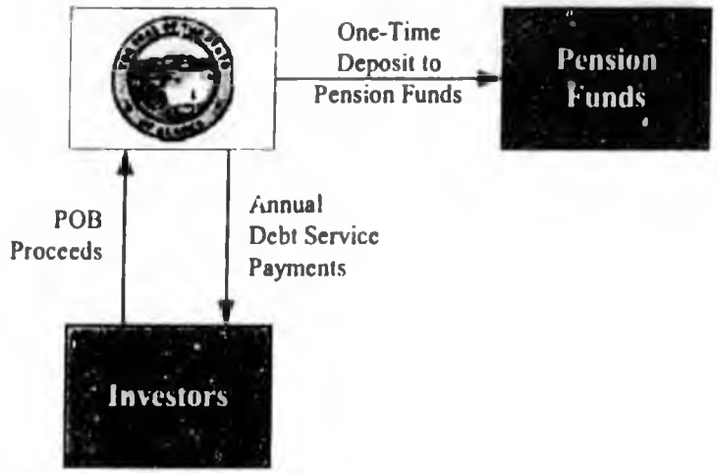
Pension Obligation Bonds (POBs) Overview

Current Plan



- The total UAAL for PERS/TRS is expected to be amortized over 25 years (FY 2029)
- For PERS, the total employer contribution rate is expected to increase over this period from 11.77% to 30.22%
- For TRS, the total employer contribution rate is expected to increase over this period from 16.00% to 47.62%
- Inherent in the amortization schedule is an 8.25% actuarial earnings rate on unfunded liabilities

After POB Transaction



- State issues pension obligation bonds (POBs)
- Bond proceeds to PERS/TRS to pay down UAAL
- State obligation to make UAAL payments replaced with POB debt service payments to bondholders
- Expected savings is the difference between the all–in bond rate of approximately 5.20% and the actuarial earnings rate of 8.25%

Summary of Results

Assumptions	
Dated	07/01/05
Delivery	07/01/05
First Interest	01/01/06
Final Maturity	01/01/29
Term	25.00
PV Factor	8.25%

Expected POB Savings	PERS	TRS	Total
PV Savings (%)	25.82%	28.12%	26.73%
PV Savings ($)	$ 954,166,477	$ 685,812,157	$ 1,639,978,634
FY05/06 Relief	58,541,098	44,829,220	103,370,318
FY06/07 Relief	66,583,534	23,618,001	90,201,535
FY07/08 Relief	42,532,756	37,354,146	79,886,902
Total FY05-08 Relief	167,657,388	105,801,367	273,458,754
Ave. FY09-29 Relief	110,217,485	82,796,673	96,507,079
Gross Savings	2,482,224,569	1,844,531,505	4,326,756,074
Deposit to System	3,451,417,000	2,414,746,000	5,866,163,000

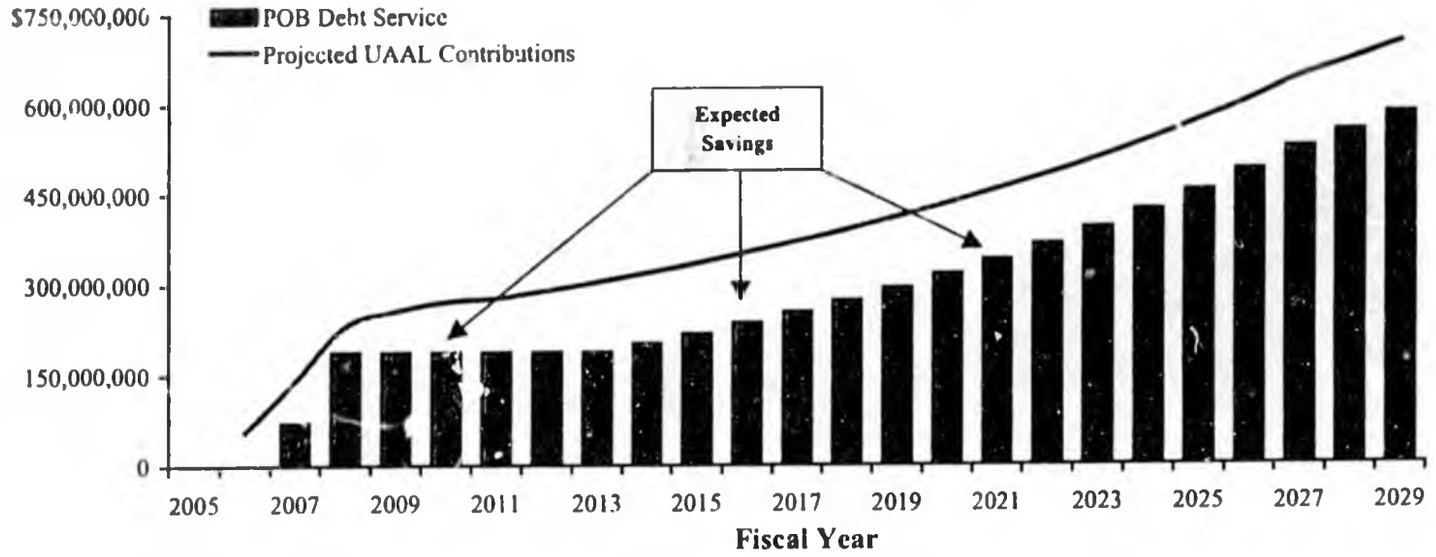
Notes:
(1) Market as of 02/18/05.
(2) Assumes that PERS/TRS earns 8.25% in investment returns.
(3) Assumes a fixed universe of assets and liabilities.

PERS Full Funding Option — 100% of Projected UAAL

Expected PV Savings of Nearly $1.0 Billion

Expected Savings Summary	
All-in Bond Rate	5.19%
PV Savings (%)	25.82%
PV Savings ($)	$ 954,166,477
Gross Savings	2,482,224,569
Deposit to PERS	3,451,417,000

Expected Fiscal Savings	
FY05/06 Relief	$ 58,541,098
FY06/07 Relief	66,583,534
FY07/08 Relief	42,532,756
Total FY05-08 Relief	167,657,388
Avg. FY09-29 Relief	110,217,485

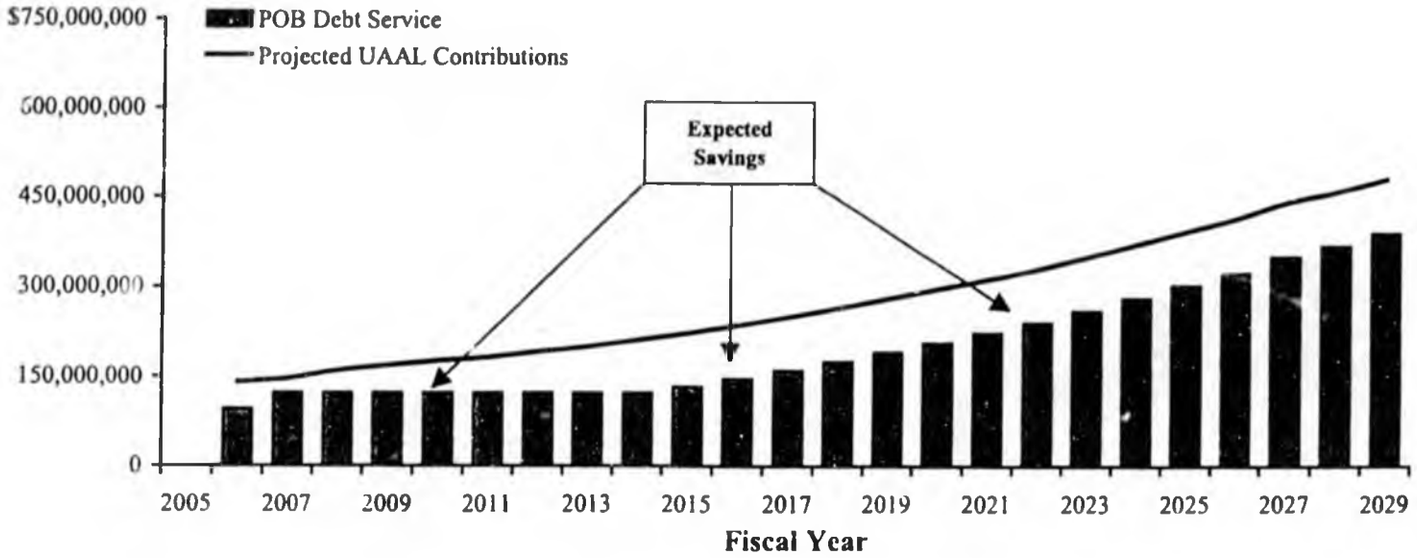


TRS Full Funding Option — 100% of Projected UAAL

Expected PV Savings of $686 Million

Expected Savings Summary	
All-in Bond Rate	5.19%
PV Savings (%)	12%
PV Savings ($)	$ 685,812,157
Gross Savings	1 844,531,505
Deposit to PERS	2,414,746,000

Expected Fiscal Savings	
FY05/06 Relief	$ 44,829,220
FY06/07 Relief	23,618,C01
FY07/08 Relief	27,754,146
Total FY05-08 Relief	105,801,767
Ave. FY09-29 Relief	82,796,673

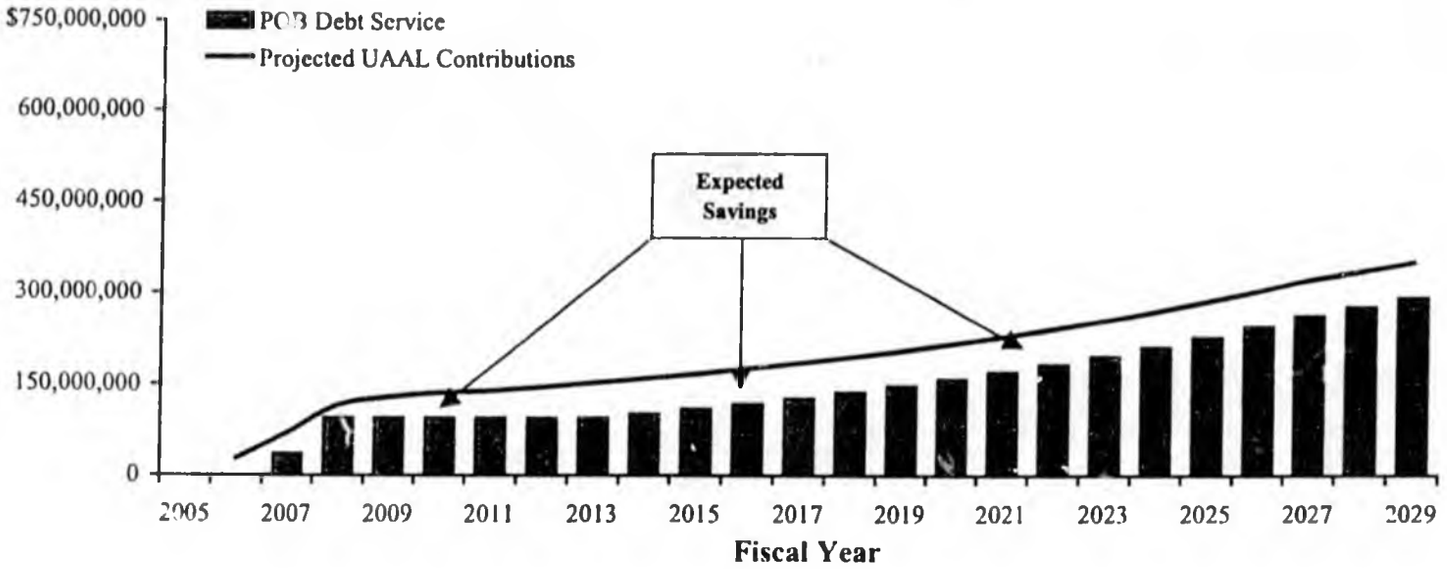


PERS Partial Funding Option —- 50% of Projected UAAL

Expected PV Savings of $477 Million

Expected Savings Summary	
All-in Bond Rate	5.19%
PV Savings (%)	25.82%
PV Savings ($)	$ 477,083,239
Gross Savings	1,241,112,285
Deposit to PERS	1,725,708,500

Expected Fiscal Savings	
FY05/06 Relief	$ 29,270,549
FY06/07 Relief	33,291,767
FY07/08 Relief	21,266,378
Total FY05-08 Relief	83,828,694
Ave. FY09-29 Relief	55,108,743

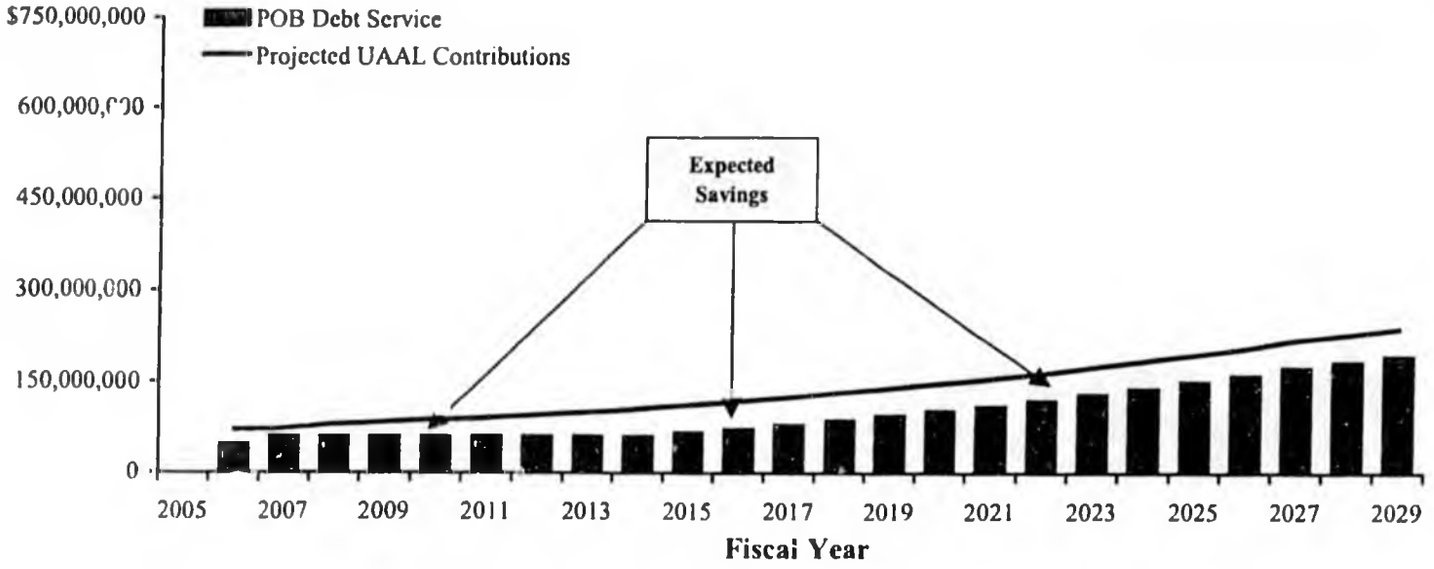


TRS Partial Funding Option — 50% of Projected UAAL

Expected PV Savings of $343 Million

Expected Savings Summary	
All-in Bond Rate	5.19%
PV Savings (%)	28.12%
PV Savings ($)	$ 342,906,079
Gross Savings	922,265,753
Deposit to PERS	1,207,373,000

Expected Fiscal Savings	
FY05/06 Relief	$ 22,414,610
FY06/07 Relief	11,809,001
FY07/08 Relief	13,877,073
Total FY05-08 Relief	52,900,884
Ave. FY09-29 Relief	41,398,337



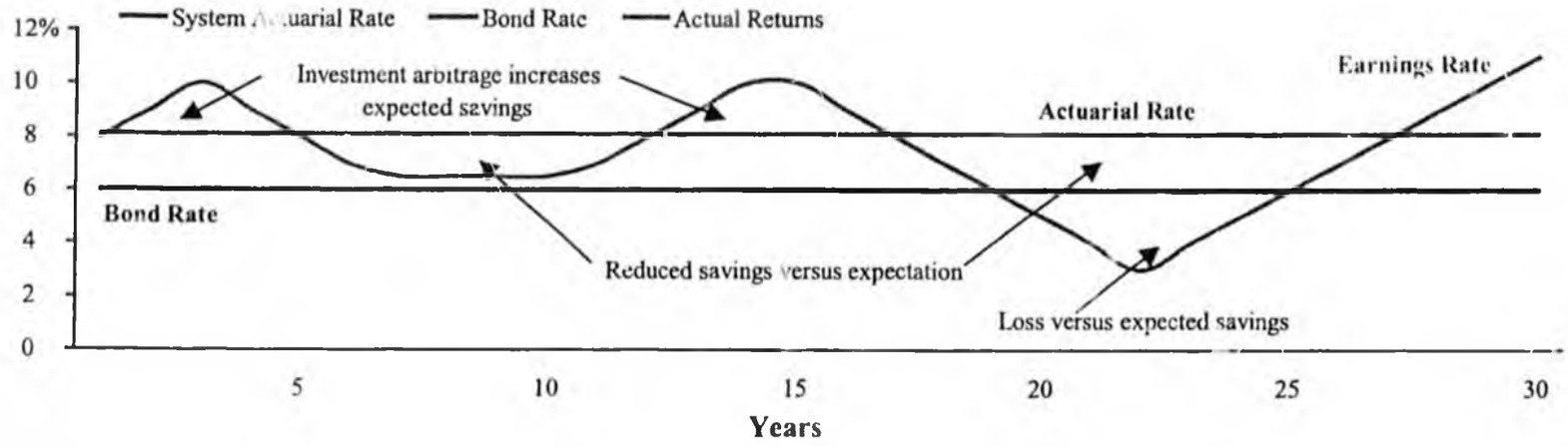
Expected Benefits of POBs

- Significant expected present value savings to meet the State's fiscal and policy objectives
  - — Generate up to $1.6 billion in expected present value savings
  - — Fully amortize UAAL within 25 years
  - — Improve financial security of PERS/TRS retirees and employees
  - — Mitigate future contribution increases
  - — Structure transaction to produce near term budgetary relief (if desired)
- Proven and acceptable tool to manage pre–existing liability
  - — Replacing a UAAL at 8.25% with a bond rate of approximately 5.20%
- Effective tool to manage/mitigate required contribution rate increases
- Statistical and probability analysis provides comfort
  - — Earnings assumptions are for a 25+ year period
  - — Historic investment management performance for PERS/TRS is strong
- Extremely favorable interest rate environment
- Bond market participants are receptive to POBs, including bond insurers, rating agencies and domestic/international institutional investors

Potential Risks of POBs

- Primary risk is failure to meet earnings expectation of actuarially assumed rate of 8.25% over life of bond deal (this "risk" currently exists with the entire asset portfolio pool)
  - — If earnings > actuarial rate: investment arbitrage increases expected savings
  - — If earnings = actuarial rate: projected savings is achieved
  - — If earnings < actuarial rate > bond rate: reduced expected savings
  - — If earnings < bond rate: dissavings

Impact of Investment Returns on Expected Savings



- Precise amount of savings is dependent upon realized rate of return over life of bond deal – not single year performance

Risk Mitigation for POBs

- Even if market returns in the early years are below the actuarial rate, it is possible to earn back the difference over the term of the transaction

8.25% Actuarial Rate Breakeven Matrix

Earnings rates required over balance of amortization period to reach expected savings

Market Returns	Years of Market Return				
	1	2	3	4	5
0.00%	8.61%	9.00%	9.43%	9.90%	10.42%
5.00%	8.39	8.54	8.70	8.88	9.08
6.00%	8.34	8.45	8.56	8.68	8.82
7.00%	8.30	8.36	8.42	8.49	8.56
8.25%	8.25	8.25	8.25	8.25	8.25
9.00%	8.22	8.19	8.15	8.11	8.06
10.00%	8.18	8.10	8.01	7.92	7.82
11.00%	8.14	8.01	7.88	7.73	7.57
12.00%	8.10	7.93	7.75	7.55	7.33

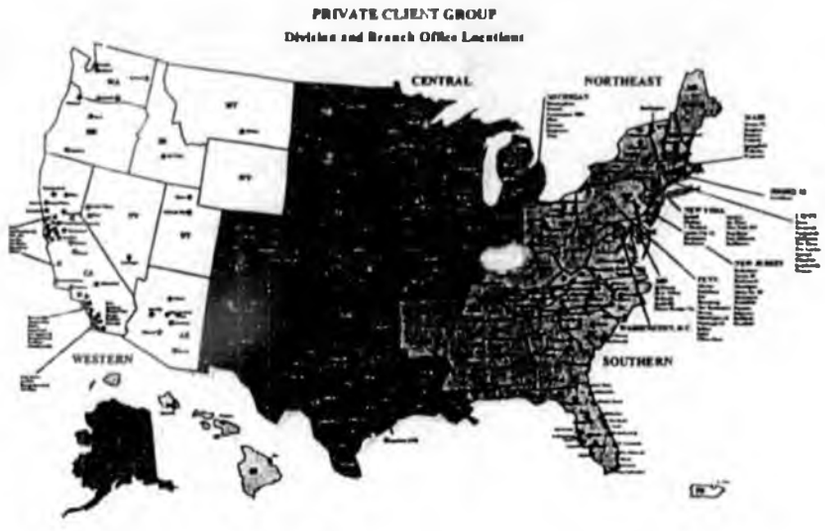
- For example, if PERS/TRS achieved a return of only 7.00% (instead of the 8.25% actuarial rate) for the first three years, then it would need to achieve an average return of 8.42% (versus 8.25%) over the remaining term of the bonds to realize the full expected savings figures

- Conversely, if earnings are above the actuarial rate in the early years, earnings in subsequent years do not need to be as high to realize projected savings, as long as funds are not diverted for other budgetary purposes

Introduction to UBS Financial Services Inc.

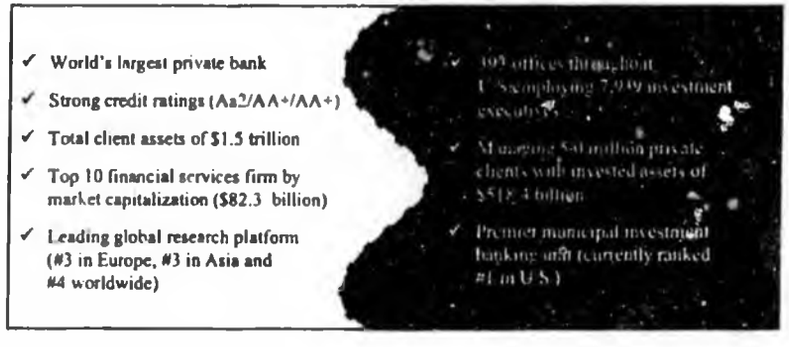
- UBS is one of the world's oldest, most established and stable banks
- In June 2003 UBS PaineWebber Inc. became UBS Financial Services Inc., the US retail brokerage arm of UBS AG
- UBS is a full-service national securities firm that provides comprehensive and customized solutions for our clients
- UBS Financial Services Inc.'s core business units include:
  - **Municipal Securities Group**
  - Wealth Management
  - Global Asset Management

UBS Domestic Offices



UBS

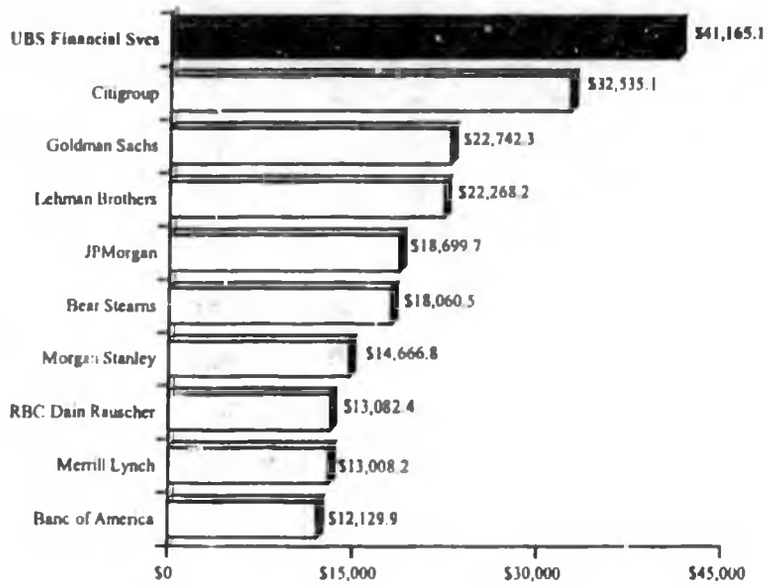
UBS Financial Services Inc.



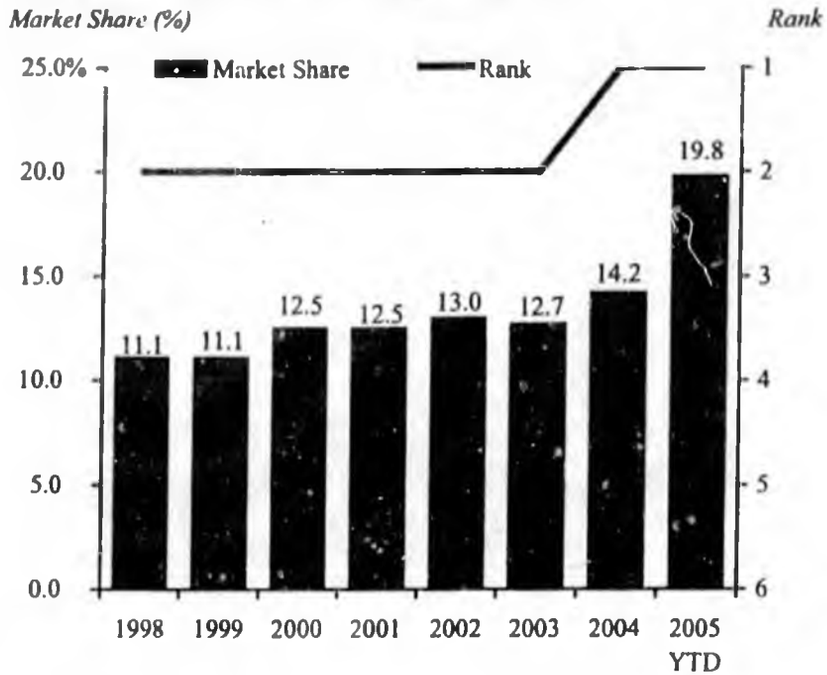
UBS's Commitment to Public Finance

2004 Senior Managed National Negotiated Rankings

($ in millions)



Senior Managed Negotiated Market Share



Volume *($ bils.)*:	$24.4	$18.9	$18.2	$27.2	$36.8	$38.4	$41.2	$5.4

- UBS is the #1 ranked senior manager of municipal debt for negotiated transactions
- UBS has a demonstrated commitment to and is a dominant player in this industry

UBS's Commitment to and Presence in the State of Alaska

- For 25 years, UBS has been actively involved in over 50% of all debt issued in the State of Alaska, either as an underwriter or financial advisor
  - ✓ Senior Manager of recent State of Alaska International Airports System Bonds
    - $94,925,000 Revenue and Refunding Bonds, Series 2003A and 2003B
    - $140,780,000 Revenue Bonds, Series 2002A and 2002B
  - ✓ Senior Manager to Alaska Municipal Bond Bank Authority
    - Appointed in January 2004 for 3-5 years
  - ✓ Financial Advisor to Municipality of Anchorage
    - Broad experience since 1981
    - Advisor to $5.9 billion of Municipality's bond issues, including Anchorage General Obligation, School, Water & Wastewater, Municipal Light & Power and Telephone Utilities
- UBS is proud to be one of the few national firms to maintain a retail office in Anchorage, which services over 6,500 accounts with total assets exceeding $500 million. UBS is also an active trader of the State's bonds, with over 4,300 trades alone since 2000

Anchorage Retail Office

- 9 Financial Advisors
- Over 6,500 client accounts
- Over $509.4 million assets under management
- $1.6 million in total payroll

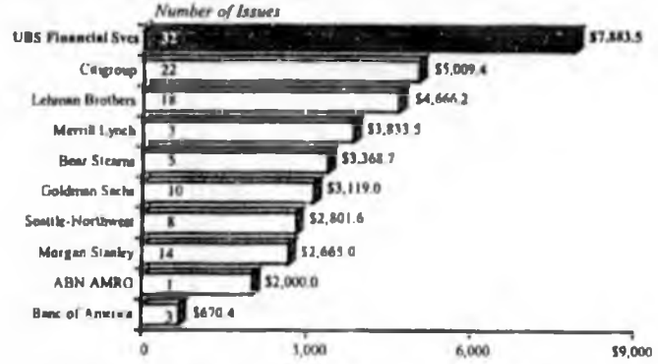
	Retail		Institutional		Total	
Year	No. of Trades	Volume ($ in 000)	No. of Trades	Volume ($ in 000)	No. of Trades	Volume ($ in 000)
2004	279	$ 17,115	34	$ 12,335	313	$ 29,450
2003	974	66,880	71	30,770	1,045	97,650
2002	1,016	92,035	40	33,370	1,056	125,405
2001	831	83,830	49	22,330	880	106,160
2000	1,013	88,699	49	56,840	1,062	145,539

UBS is the Industry Leader in Pension Obligation Bonds (POBs)

- UBS is ranked #1 in the pension obligation bond market – completing 32 issues totaling $7.88 billion or 20.0% of the POB market since 1993

UBS's Senior Managed Negotiated Pension Experience 1993 to 2004

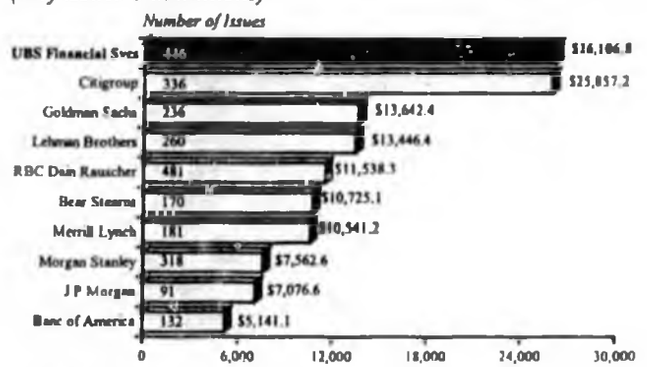
(# of issues/$ in millions)



Source: Securities Data Corporation.

UBS's Senior Managed Negotiated Taxable Experience 1993 to 2004

(# of issues/$ in millions)



Source: Securities Data Corporation.

- UBS has served as joint book-running manager for the largest and most complex POBs done to date, including the State of Illinois ($10 billion), State of Oregon ($2.1 billion) and State of Wisconsin ($1.79 billion)

- As the State's senior manager, UBS will bring all of its experience and expertise to bear on structuring the optimal solution to achieve the State's fiscal and policy objectives

UBS's POB Experience, 1993 – 2005 Selected Deals

($ in millions)

UBS Experience					UBS Placement	
Sale Date	Par Amount	Issuer	State	UBS Role	Orders Submitted by Firm	Orders Filled
10/27/04	$ 38.8	San Diego Metro Transit Dev Bd	CA	Sole Senior Mgr	38.8	38.8
10/21/04	38.7	San Diego Metro Transit Dev Bd	CA	Sole Senior Mgr	63.6	38.7
03/23/04	75.0	Fresno County	CA	Joint Book Runner	75.0	75.0
03/10/04	327.9	Fresno County	CA	Joint Book Runner	831.0	327.9
02/26/04	500.0	Kansas Development Fin Auth	KS	Senior Mgr.	489.9	250.0
12/10/03	1,794.9	Wisconsin	WI	Joint Book Runner	4,294.0	750.8
10/28/03	2,084.0	Oregon	OR	Co-Senior Manager	2,252.3	145.9
08/26/03	40.3	Kansas Development Fin Auth	KS	Senior Mgr.	72.7	36.3
06/05/03	10,000.0	Illinois [1,2]	IL	Joint Book Runner	12,317.9	148.1
05/22/03	50.0	Kern County	CA	Senior Mgr.	50.0	50.0
05/15/03	238.2	Kern County	CA	Senior Mgr	336.3	237.4
05/14/03	231.2	Sonoma County	CA	Senior Mgr	758.3	216.8
09/10/02	67.3	West Haven	CT	Sole Senior Mgr	151.3	67.3
06/26/02	90.0	Woonsocket	RI	Senior Mgr	157.4	90.0
03/13/02	117.1	Fresno County	CA	Sole Senior Mgr	136.2	117.1
02/28/02	34.0	Bangor	ME	Senior Mgr	35.7	33.6
07/18/01	111.0	Portland	ME	Sole Senior Mgr	111.0	111.0
12/18/00	170.7	New Orleans	LA	Senior Mgr	247.5	148.5
07/11/00	105.7	Fresno County	CA	Senior Mgr	124.7	94.8
01/21/99	1,291.9	Phila Auth for Indus Dev	PA	Senior Mgr	1,572.8	1,246.6
12/08/98	221.0	Worcester	MA	Senior Mgr	177.6	166.0
03/12/98	184.9	Fresno County	CA	Sole Senior Mgr	252.8	184.9
07/09/97	384.2	Denver City & Co SD #1	CO	Senior Mgr	442.1	360.9
02/14/97	436.3	Oakland	CA	Senior Mgr	476.0	342.6
11/10/95	227.8	Kern County	CA	Senior Mgr	270.0	222.7
10/07/93	19.1	Buffalo	NY	Senior Mgr	10.3	9.0
06/23/93	23.1	Buffalo	NY	Senior Mgr	16.1	12.2
01/19/05	399.3	City of Dallas	TX	Co-Mgr	5.0	3.0
06/22/04	454.1	San Diego County	CA	Co-Mgr	142.8	60.0
06/09/04	189.1	San Bernadino County	CA	Co-Mgr	59.2	49.9
06/12/03	120.0	Portland Comm Coll Dt	OR	Co-Mgr	24.0	2.2
03/14/03	90.0	Gainesville	FL	Co-Mgr	42.8	15.0
03/07/03	375.0	NJ Economic Dev Auth	NJ	Co-Mgr	75.0	3.9
09/17/02	737.3	San Diego County	CA	Co-Mgr	147.5	11.7
08/22/00	350.0	Bridgeport	CT	Co-Mgr	152.3	48.5
02/03/99	63.1	Merced County	CA	Co-Mgr	12.6	0.7
06/26/97	2,803.0	NJ Economic Dev Auth	NJ	Co-Mgr	560.6	51.5
11/01/96	773.5	NYS Dorm Authority	NY	Co-Mgr	154.7	14.1
10/19/95	600.0	Los Angeles County	CA	Co-Mgr	120.0	6.6
10/13/94	1,965.2	Los Angeles County	CA	Co-Mgr	393.0	36.4
09/23/94	320.0	Orange County	CA	Co-Mgr	64.0	5.8
02/03/94	430.4	San Diego County	CA	Co-Mgr	86.1	4.7
	$ 18,903.1	**Senior Managed**				
	$ 9,270.7	**Co-Managed**				
	$ 28,173.8	**Total**				

(1) UBS and Bear Stearns were Joint Book-Running Managers. There were three additional co-senior managers and SDC credit was split equally among the five.
(2) The State of Illinois transaction with the exception of one maturity was sold group net.

Current POB Market Update

- POBs are a commonly used financial tool to improve the funding levels of state and local pension systems. Since 1993, there have been over 350 POB issues totaling $40.3 billion

- POBs are interest rate sensitive and many issuers are proactively considering POBs to lock-in current interest rates and expected savings figures

- If interest rates rise (as forecasted), the expected savings from a POB transaction will diminish or even disappear

UBS's Recently Priced POBs:

Kern County, California	State of Illinois	State of Oregon	State of Wisconsin	Kansas Development Finance Authority	Fresno County, California
$238,177,000 Senior Book Running Manager May 15, 2003	$10,000,000,000 Joint Book Running Manager June 5, 2003	$2,083,960,000 Co-Senior Manager October 28, 2003	$1,794,850,000 Joint Book Running Manager December 10, 2003	$500,000,000 Senior Book Running Manager February 26, 2004	$327,898,000 Joint Book Running Manager March 10, 2004

Next Steps — POB Strategy and Implementation

- Limited window of opportunity due to potential increased rates
- General education of interested parties
- Policy analysis of use of expected savings and debt structure
- Drafting of enabling legislation to provide opportunity for State to take advantage of expected cost savings
- Legislative authorization and action
- Confirmation of existing pension fund data, assumptions and paydown schedule
- Determination of appropriate annual contribution rate for the State
- Deal specific decision-making

APPENDIX

Alaska's UBS Banking Team

Investment Banking

JAMES W. ZIGLAR, Sr.
Managing Director & Chief Business Strategist

Mr. Ziglar joined UBS as a Managing Director and Chief Business Strategist for the Municipal Securities Group on June 1, 2004. Mr. Ziglar has 23 years of experience in the public finance business as an investment banker and lawyer, including over 10 years with UBS prior to departing in 1998 to serve as Sergeant at Arms of the United States Senate. Most recently, Mr. Ziglar was Distinguished Visiting Professor of Law at George Washington University Law School and a Fellow at Harvard University's John F. Kennedy School of Government Institute of Politics. He was Commissioner of the Immigration and Naturalization Service from August 2001 until his retirement from federal service in November 2002. In addition to his positions as Commissioner of the INS and as Sergeant at Arms of the United States Senate, he has served at various times as Assistant Secretary of the Interior for Water and Science - where he oversaw the operations of the Bureau of Reclamation, the Bureau of Mines and the U.S. Geological Survey, as a law clerk to Supreme Court Associate Justice Harry A. Blackmun, as a congressional and public affairs officer at the Department of Justice, and as an aide to the Chairman of the U.S. Senate Judiciary Committee.

Mr. Ziglar earned his undergraduate and law degrees from The George Washington University. He is a member of the bar in New York, Arizona, Virginia and the District of Columbia.

JOHN COSTAGLIOLA
Managing Director & Manager of West Coast Infrastructure

John Costagliola has 19 years of experience in public finance and leads the Firm's efforts in Alaska. Mr. Costagliola has served as the Financial Advisor to the Municipality of Anchorage since 1993, and senior managed bond issues within the State for the Airport system, Bond Bank Authority and AIDEA. Mr. Costagliola is in frequent dialogues with rating agencies on Alaska issues and credit concerns. Mr. Costagliola has very broad experience with electric utilities, water and sewer systems, general government finance and credit issues. He joined UBS in 1993 after seven years with Standard and Poor's Corporation where he was a Director and manager of their utility group in the Western Regional Office. While at S&P, Mr. Costagliola was principal analyst and chaired numerous rating committees within all public finance sectors. He has a Bachelor's degree from Fordham University and is an MSRB principal.

Alaska's UBS Banking Team

ROBERT DOHERTY
Managing Director & Co-Head National Infrastructure Group

Mr. Doherty has over 18 years of banking experience. He recently joined UBS from Merrill Lynch, where his responsibilities included managing the Firm's geographic banking relationships in the Midwest, South and East Coast. Mr. Doherty was also responsible for the Firm's pension obligation bond group and served as the lead banker for the State of New Jersey's $2.8 billion pension obligation bond transaction – the largest municipal transaction then executed. The State of New Jersey's POB financing was named "Deal of the Year" by Smith's Survey. At UBS, Mr. Doherty has served as the lead banker for several senior managed POBs, including the State of Kansas' $500 million issue and State of Wisconsin's $1.8 billion issue which was named "Midwest Deal of the Year" by The Bond Buyer. Mr. Doherty is currently working on senior managed POB transactions for the City of Detroit ($1.3 billion) and the City of San Antonio ($350 million). Mr. Doherty also served as the lead banker for the States of Wisconsin, Ohio, Kentucky, New Jersey, Michigan and Massachusetts on numerous transactions. He has significant banking experience designing customized financial solutions for clients.

Mr. Doherty received his MBA from the University of Chicago and his undergraduate degree in international politics from Georgetown University's School of Foreign Service.

TOM YANG
First Vice President

Tom Yang is a member of UBS' Transportation Finance Group. He currently manages our West Coast transportation and airport efforts. Mr. Yang is an expert on structuring bond financings secured by innovative transit credits such as the Congestion Mitigation and Air Quality funds, FTA's Section 5307 formula funds and Section 5309 New Starts funds, congestion mitigation and air quality funds, farebox revenues and state transportation grant funds. He recently served as the senior banker on a $77 million pension obligation bond issue for San Diego Transit Corporation, the first pension obligation bond financing completed for a transit agency.

Mr. Yang also served as the day-to-day banker for two recent financings for Alaska International Airports System. His senior managed bond issues in the past 24 months include Los Angeles County Metropolitan Transportation Authority, San Francisco Airport Commission, Burbank Airport Authority, San Diego Metropolitan Transit Development Board, Sacramento Regional Transit District, North San Diego County Transit District, Boise Airport and Riverside Transit Agency.

Mr. Yang graduated with High Honors from the University of California, Berkeley with a degree in Mechanical Engineering.

Alaska's UBS Banking Team

BRYANT JENKINS
Assistant Vice President

Mr. Jenkins has over 6 years of public finance experience and has provided quantitative analysis and transaction support for over $7.3 billion in senior managed financings for clients including pension obligation bonds for the State of Illinois, Kansas Development Finance Authority, San Diego Metropolitan Transit Development Board and the State of Oregon. His experience also includes working with Alaska issuers including the Alaska Municipal Bond Bank and the Municipality of Anchorage.

Mr. Jenkins received his B.A. in Economics from Columbia University and M.B.A. from Stanford University.

MARK T. KIM
Assistant Vice President

Mr. Kim joined UBS in 2002 and is a member of the firm's National Infrastructure Group. Mr. Kim's experience includes structuring multiple senior managed transactions totaling over $3.0 billion. These transactions include $1.2 billion (including a $587 million swaption) for the Long Island Power Authority (LIPA) in connection with a major restructuring program. More recently, Mr. Kim has focused on structuring pension obligation bond issues and other taxable transactions for clients at the state and local level, including the State of Wisconsin's $1.8 billion POB, which was awarded the Bond Buyer's "Midwest Deal of the Year" award. Prior to joining UBS, Mr. Kim served as a Staff Attorney for the Federal Election Commission (FEC) in Washington, D.C.

Mr. Kim received his Ph.D. in Public Policy from Harvard University; J.D. in Public Law from Cornell Law School; and B.A. in Philosophy from Northwestern University. Mr. Kim is a member of the Bars of the District of Columbia and the State of New York.

Alaska's UBS Banking Team

Underwriting

STEVE M. PILLER
Director

Mr. Piller has 20 years experience in the municipal securities industry. As a Director in UBS's Syndicate Department, he is responsible for the underwriting and marketing of municipal transactions, including negotiated and competitive underwritings, both tax-exempt and taxable.

In addition to developing marketing strategies for municipal issues in the primary market, Mr. Piller coordinates the distribution process with the client and bankers. This includes identifying buyers, working closely with the retail and institutional sales divisions and apprising the client of market conditions and economic developments that could affect interest rate levels. Mr. Piller also coordinates the trading and marketing of secondary risk positions for new issues. Mr. Piller attended York College.

Derivative Products

RHAHIME A. BELL
Managing Director

Rhahime Bell, Co-head of the Municipal Derivatives Group, joined UBS in May, 1999. Prior to joining UBS, Mr. Bell was a Vice-President in the Global Derivatives Group at J.P. Morgan. Most recently, Mr. Bell was responsible for advising corporations and government entities in Latin America on interest rate and currency risk management. Prior to his work in Latin America, Mr. Bell was responsible for marketing tax-exempt derivatives to municipalities within the United States. Mr. Bell negotiated and executed over 700 interest rate swap, options and forward purchase agreements during 1993 and 1998. In addition, Mr. Bell was responsible for trading and risk management of the TBMA/LIBOR basis position for J.P. Morgan. Mr. Bell graduated from Georgetown University in 1991 with a dual degree in Finance and International Management.

Alaska's UBS Banking Team

Municipal Research

BRAD GEWEHR
Managing Director

Mr. Gewehr joined UBS in March 1998 as Director of Municipal Research. In addition to providing research for UBS's retail and institutional investors, Mr. Gewehr and his staff have assisted many of UBS's banking clients in developing effective credit rating and investor relations strategies. Immediately prior to joining UBS, Mr. Gewehr was a Managing Director in the Public Finance Group of Moody's Investors Service. He supervised a staff of analysts responsible for assigned and maintaining ratings on municipal tax–backed, utility revenue, and lease credits in 26 states, including California, New York, Florida, and Illinois. As a senior member of Rating Committee, he participated in rating decisions for major credits throughout the United States. Brad also led analytical specialty teams covering the water and wastewater and state revolving fund sectors.

Prior to joining Moody's in 1991, Mr. Gewehr was a Project Manager and Transportation Analyst with the Port Authority of NY & NJ. He holds an MBA in Finance from New York University and a BA from Amherst College.

UBS's POB Structuring Methodology

Step 1: Determine the Dollar Value of the UAAL

- Asset valuation (e.g., actuarial, mark to market, etc.)
- Present value of future liabilities

UAAL = Liabilities – Assets

Step 2: Determine the Existing UAAL Payment Schedule

- Number of years or amortization period
- Amortization method (e.g., level percentage of payroll, statutorily determined, etc.)
- Actuarial assumptions (e.g., covered payroll, annual pay increase, etc.)
- State portion of UAAL
- GASB Note 25 and 45 considerations

UAAL Payment = Covered Payroll x UAAL Contribution Rate

UBS's POB Structuring Methodology

Step 3: Structure POBs against UAAL Payment Schedule

- Understand PERS/TRS's fiscal and policy objectives (e.g., immediate cashflow relief, level savings, etc.)

- Structure bonds to help achieve PERS/TRS's objectives by:
  - — Principal Deferral
  - — Income Bonds
  - — Stepped Coupon Bonds
  - — Capitalized Appreciation Bonds ("CABs")
  - — Capitalized Interest Fund

- Derivative Products (e.g., synthetic fixed, step coupons, etc.)

- Calculate Expected Savings

Expected Savings = Existing UAAL Payment – POB Debt Service

POB Case Studies

Customized Solutions for Our POB Clients

- UBS's senior managed POB experience encompasses issuers at the State, City, County and System levels and includes a variety of innovative credit and financing structures designed to help our clients meet their financial and policy objectives

- Given an issuer's specific situation, UBS has consistently created unique marketing plans, rating agency presentations, legislative strategies, financial tools and deal structures that have helped our clients realize their goals

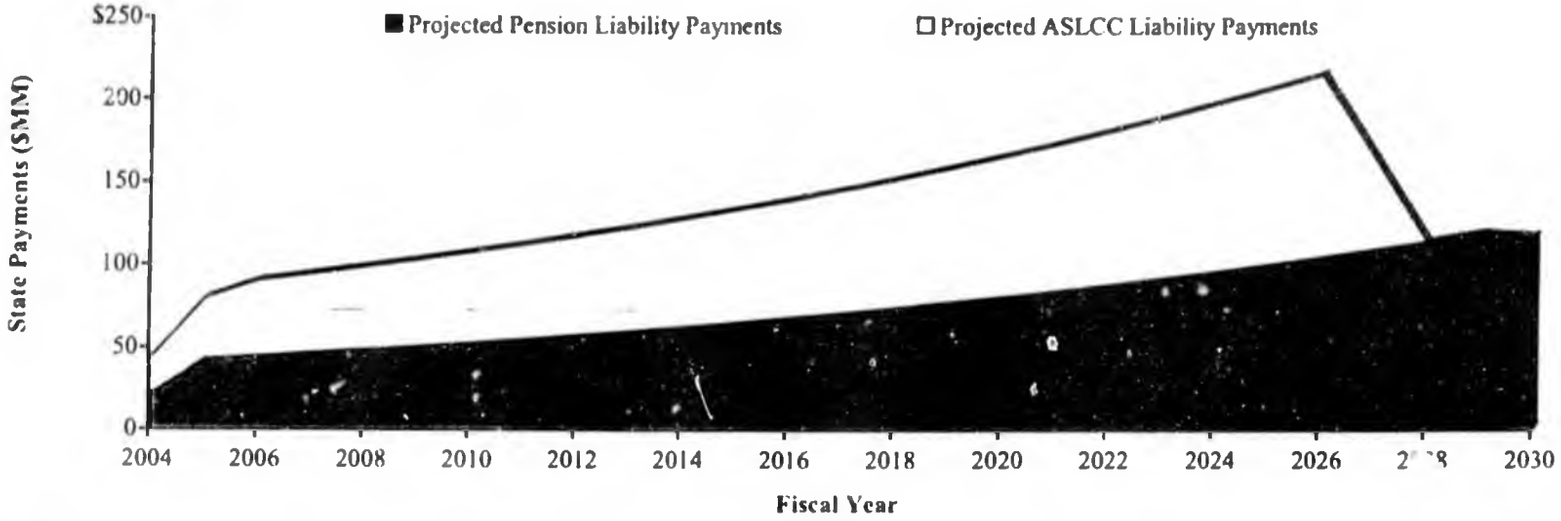
- Below are highlights of several challenges that our clients have faced and the customized solutions that UBS created as senior manager

Transaction	Challenge	Solution
Philadelphia, PA	Special legislation required; needed budget relief over 10-year period; pension system severely underfunded	Legislation passed to allow for conduit issuer – still obtained BIS weighting of 20%; funded 50% of UAAL; extensive use of CABs to structure debt to meet revenue requirements; income bonds to provide call flexibility; all-in cost of 6.63% vs. 9.00% actuarial rate
Portland, ME	Very steep UAAL payment curve; savings targets for implementation of deal	Tailored savings through "synthetic" stepped coupon bond; saved 32 basis points versus natural structure
Denver Public Schools, CO	Lease appropriation credit with school property as collateral; desired savings over time; pension solution needed for labor negotiations	Devised "proportional" savings structure; structured term bond with 10-year 102% call feature; obtained aggressive insurance commitment; 7.19% TIC versus deal target of 7.40% and actuarial rate of 8.50%
Oakland, CA	Only allowed for 15-year transaction; severely underfunded system; weak credit	"Prepaid" first 15 years of amortization through contract with System; extensive use of CABs; aggressive insurance commitment

Case Study: The State of Wisconsin's $1.794 Billion POB

Background

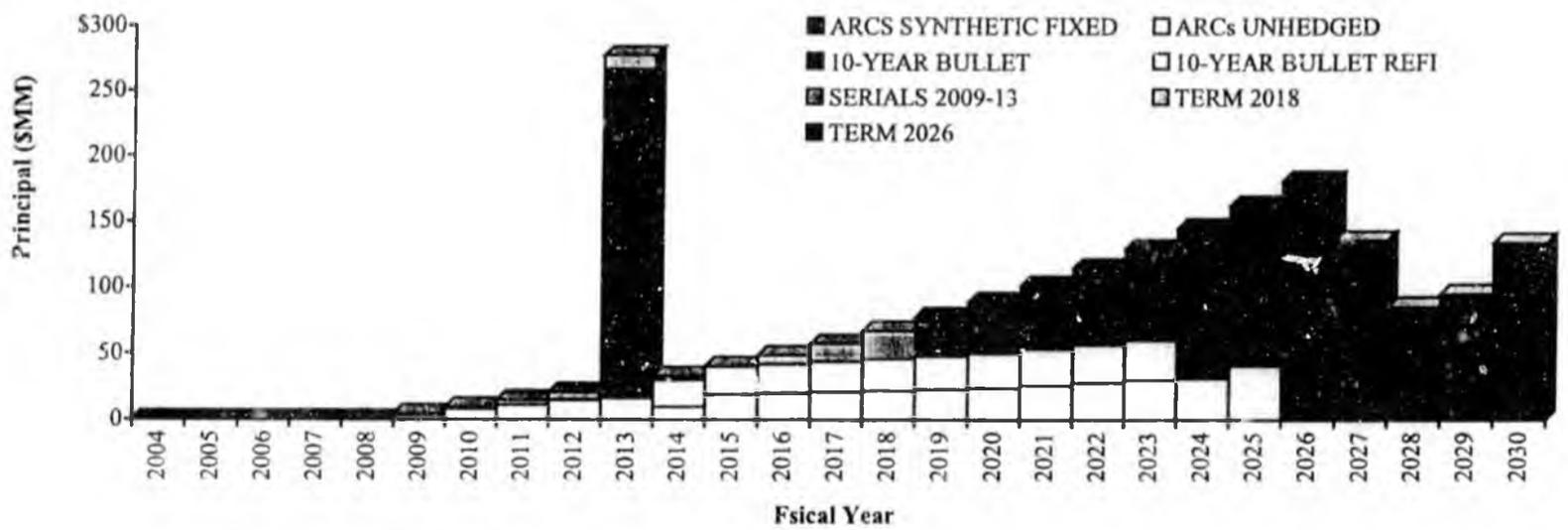
- UBS served as joint book running manager for the State of Wisconsin's $1,794,850,000 General Fund Annual Appropriation Bonds of 2003, $850 million Series A (Taxable Fixed Rate) and $945 million Series B (Taxable Auction Rate Certificates)
- The State sold bonds to retire the Unfunded Pension and ASLCC Liabilities owed to the Wisconsin Retirement System ("WRS") and lower its financing cost from 8% to the bond rate
- Bonds were structured against the combination of the State's projected pension liability and ASLCC liability payments shown below as the "red line"



Case Study: The State of Wisconsin's $1.794 Billion POB

Structure	
Series A – 10 Year Bullet	$ 250,000,000
Series A – Term Bond 2018	100,000,000
Series A – Term Bond 2026	500,000,000
Series A - Total	**$ 850,000,000**
Series B – ARCs Unhedged (assumed rate of 5.59%)	$ 349,700,000
Series B – ARC Synthetically Fixed	595,150,000
Series B – Total	**$ 944,850,000**
TOTAL GFAAB Issue	**$ 1,794,850,000**

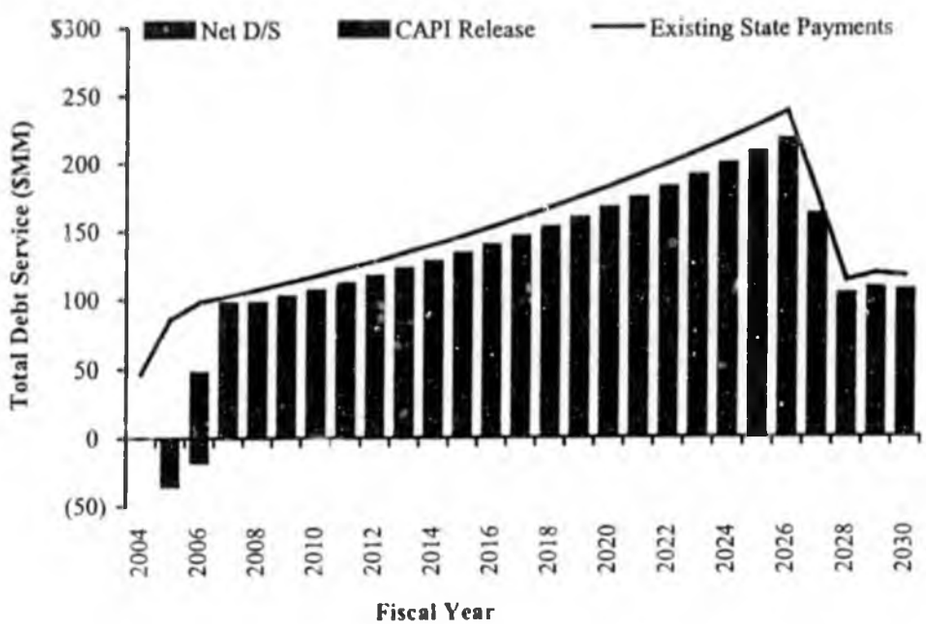
Ratings	
Unenhanced	A1/A+/AA-
Enhanced	Aaa/AAA/AAA
Corporate Equivalent:	Aa1
Credit:	General Fund Annual Appropriation Bonds of 2003
Pricing Date:	12/10/2003
Dated Date:	12/18/2003
Call Feature:	Make-Whole Call 2014 at Treasury Rate plus 12.5 bps



Case Study: The State of Wisconsin's $1.794 Billion POB

Benefits

- The State was able to fully fund its accrued pension and sick leave liabilities
- The transaction generated substantial expected PV savings of over $323 million or 22%
- The State realized immediate cash flow savings and significant budgetary relief
- An all-in true interest cost of 5.804% for the entire transaction (assumes unhedged ARCs at 5.59%)
- The State reduced its overall financing costs by executed its first synthetic fixed rate swap of $595 million with an all-in swap rate of 5.47% (average life 25.24 years)
- First issuance of ARCs issued at an initial rate of 1.20% offer future financial flexibility



Case Study: The State of Wisconsin's $1.794 Billion POB

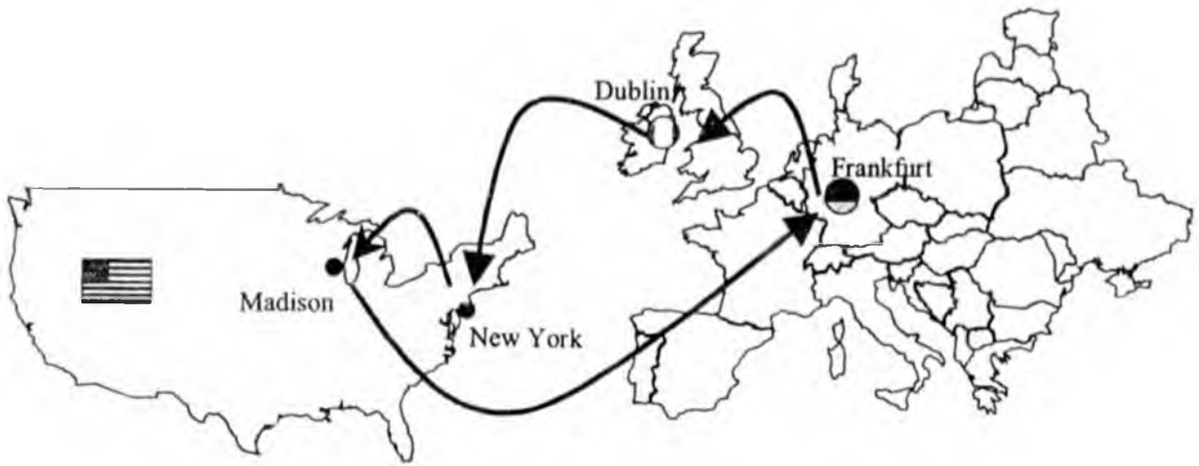
Credit and Call Features

- The bonds are backed by State appropriations as part of the General Fund Annual Appropriation Bond credit; a new credit, which UBS help the State inaugurate. The key security features include:
  - -- Moral Obligation
  - — High Priority Payment Status
  - — Continuing Budget Authority
  - — Appropriation Mechanism
  - — Stabilization Fund
  - — Cashflow/Debt Management Techniques
  - — Bond Insurance
- Underlying ratings of (A1/A+/AA-) with a Moody's corporate equivalent rating of (Aa1)
- The entire issue was insured: Series A by FSA and Series B by XL Capital Assurance
- A $32.935 million Stabilization Fund was established to protect against rising interest rates associated with the unhedged ARCs and which serve as additional security for the issue
- The structure included a $250 million, non-callable, 10-year bullet. The State expects to refinance this entire amount in on or before 2013 with additional bonds that have already been authorized under the Indenture
- Two term bonds (2018 and 2026) have an optional, make-whole call provision
- Issue included nine subseries of ARCs totaling $350 million, which provides the state with significant financial flexibility

Case Study: The State of Wisconsin's $1.794 Billion POB

Marketing

- UBS managed a global offering plan. Clearance through DTC, Euroclear, and Clearstream. The Bonds are listed on the Luxembourg Stock Exchange
- UBS coordinated and helped present at an International Roadshow, which included meetings in the United States, Germany and Ireland
- In addition to UBS's domestic capabilities, UBS's global sales force helped set up in-person meetings with 17 institutional investors in Europe and UBS's global roadshow coordinator helped ensure flawless meeting arrangement for the State and UBS bankers
- UBS scripted and recorded a Bloomberg Electronic Roadshow for institutional investors in all market segments to use in considering the Bonds



Case Study: The State of Illinois' $10 Billion POB

$10,000,000,000
State of Illinois
General Obligation Bonds
Pension Funding Series of June 2003 (Taxable)

RATINGS	**Moody's Corporate Equivalent**	**Municipal**	**S&P**	**Fitch Ratings**
	Aa3	Aa3	AA	AA
RELEVANT DATES	**Pricing**	**Dated**	**Delivery**	**First Interest**
	June 5, 2003	June 12, 2003	June 12, 2003	Dec 1, 2003

OPTIONAL REDEMPTION None
TAX STATUS Taxable
PUBLICLY OFFERED United States, Europe and Asia
LISTED Luxembourg Stock Exchange
GLOBAL BOOK ENTRY DTC, Clearstream and Euroclear

AMORTIZATION

Date	Principal	Sinking Fund	Coupon	Yield	Price	Benchmark	Yield	Spread
June 1, 2008	50,000,000		2.500	2.522	99.897	5 Yr. Note	2.222	30 bps
June 1, 2009	50,000,000		2.800	2.822	99.879	5 Yr. Note	2.222	60 bps
June 1, 2010	50,000,000		3.300	3.324	99.851	10 Yr. Note	3.324	0 bps
June 1, 2011	50,000,000		3.550	3.574	99.833	10 Yr. Note	3.324	25 bps
June 1, 2012	100,000,000		3.750	3.754	99.968	10 Yr. Note	3.324	43 bps
June 1, 2013	100,000,000		3.850	3.874	99.802	10 Yr. Note	3.324	55 bps
June 1, 2014	100,000,000		3.950	3.974	99.787	10 Yr. Note	3.324	65 bps
June 1, 2015	100,000,000		4.050	4.074	99.773	10 Yr. Note	3.324	75 bps
June 1, 2016		100,000,000						
June 1, 2017		125,000,000						
June 1, 2018	375,000,000	150,000,000	4.350	4.354	99.955	10 Yr. Note	3.324	103 bps
June 1, 2019		175,000,000						
June 1, 2020		225,000,000						
June 1, 2021		275,000,000						
June 1, 2022		325,000,000						
June 1, 2023	1,375,000,000	375,000,000	4.950	4.960	99.872	30 Yr. Bond	4.380	58 bps
June 1, 2024		450,000,000						
June 1, 2025		525,000,000						
June 1, 2026		575,000,000						
June 1, 2027		625,000,000						
June 1, 2028		700,000,000						
June 1, 2029		775,000,000						
June 1, 2030		875,000,000						
June 1, 2031		975,000,000						
June 1, 2032		1,050,000,000						
June 1, 2033	7,650,000,000	1,100,000,000	5.100	5.100	100.000	30 Yr. Bond	4.380	72 bps