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pension funding levels that are roughly 3 times the funding level of a generous private sector 401k. However, public employees also often receive other lucrative retirement benefits. For example, Deferred Retirement Option Plans or DROP programs can provide long term public employees with lump sum retirement payments that are roughly equivalent to the amount that they would have accumulated in a 401k over the course of 30 years if they had worked in the private sector and fully funded their 401k as described above. In these cases, a public employee receives both a pension and lump sum DROP payment that acts as a 401K surrogate. In the case of Houston, the DROP pay-outs for long term safety employees are often in the million-dollar range. This level of benefit helps to shed light on how California is now spending 30 times what the state paid in retirement benefits before benefits were expanded in 2000. In Houston, the City’s former Chief Pension Officer recently commented that one step towards resolving Houston’s pension problem would be to cap the City’s retirement funding at 20% of payroll. Twenty percent is 2.7 times as generous as the 7.5% matching contribution provided by a good 401K in the private sector.

Low Returns Can Catastrophically Compound the Problem: Contrary to popular opinion, the primary problem has not been low returns. For example, from June of 2008 through June of 2014 a simple 65% S&P 500 stock and 35% U.S. fixed income investment grade portfolio returned 8.10%, a return that supports the average 7.6% return assumptions used by municipal pension plans. To understand the adverse impact that low returns can have on the size of the problem consider that as of 6/30/2014, in aggregate, public pensions reported the total unfunded U.S. public employee pension debt as $1.04 Trillion. In contrast, as of the same date, Stanford’s Institute for Economic Policy Research used a risk free rate of 3.00% and calculated the aggregate unfunded pension liability to be $4.83 Trillion or nearly 5 times what the public sector reported. The enormous $3.8 Trillion gap between these two figures is larger than the entire $3.7 Trillion municipal bond market. Stanford’s number is frightening because from the onset of the financial crisis in 2008 through late 2014 market returns have benefited from the most simulative and accommodative period of monetary policy in U.S. history. However, since late 2014 our slow growth and low interest rate world is now being confronted by Fed policy that is glacially transitioning away from monetary accommodation, which means that market returns are very likely to be lower in the future than they have been in the past. The transition to a lower return world seems to be well underway. For example, from June of 2014 through September of 2016 the same 65% S&P 500 stock and 35% U.S. fixed income investment grade portfolio has returned just 5.05%, a return which is far below the average 7.6% return assumptions used by municipal pension plans. Going forward low returns have the potential to spread the problem of underfunding everywhere and the capacity to catastrophically compound underfunding problems where they are already acute, as they are in Houston.

CURRENT RISK ASSESSMENTS

✓ Duration strategy is neutral v. benchmarks

ATTRACTIVE SECTORS:
✓ 5-7 Yr Treasuries for optimum roll-down returns
✓ Investment grade Finance credits
✓ Super-senior commercial mortgage-backed securities
✓ Short duration high-yield corporate bonds
✓ High quality Municipals with no pension funding challenges
✓ 30-Year Agency Mortgage Backed Securities

UNATTRACTIVE SECTORS:
✓ Investment Grade Credit overall
✓ Emerging Market credit and currency exposure
✓ Developed Market credit exposure
✓ Long duration high yield corporate bonds

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2 The pension gap, Los Angeles Times, Jack Dolan Sept 18, 2016
4 “Mayor’s pension reform plan is a good try, but misses the core problem”, Houston Chronicle, Craig Mason, September 24, 2016
11 We use a mix of 65% S&P 500 (stock) and 35% Barclays Aggregate (U.S. Investment Grade Fixed Income) to represent a standard balanced portfolio. Return information was provided by Bloomberg.
Best Practices: Given the magnitude and seriousness of the underfunded pension problem and the fact that taxpayers will be asked to carry the burden or accept tangible cuts in the level of municipal services, it seems reasonable that the reform process would include open and public discussions of the issues. Where pension reform has occurred it has often been driven by sustained voter education efforts. Two examples of this are San Diego (8th largest city), where voter education was driven by members of the city council and San Jose (10th largest city) where voter education was championed by then Mayor Chuck Reed. In the case of Houston, thus far negotiations have been behind closed doors with local papers reporting the intent is to have a completed deal before presenting it to the city council and then submitting it to the state legislature for approval. It will be interesting to see how or whether voters will have a chance to gain the knowledge and understanding that is required to affect positive reform on this important issue. It is also interesting to note that in the case of both San Jose and San Diego pension reform initiatives passed at a rate of roughly 70%. In a conversation with Chuck Reed, he made the point that with about 20% of his constituents somehow benefitting from or committed to public pensions, only 8 of every 10 voters was truly available to support reform efforts. His point was that by educating the public for a year and a half the reform initiative captured 7 of out every 8 available voters. Voter education is key. Another element of best practices would involve the reconfiguration of the various pension board memberships such that the boards are not permanently controlled by beneficiaries and thereby removing potential conflicts of interest.

Urgency & Growth of Houston’s Problem: Houston’s problem is urgent! To provide context consider the following. At the end of 2014, the City of Houston reported its unfunded pension liability was $1.2 billion. When June of 2015 information was released the unfunded liability jumped to $5.6 billion. The reform plan being discussed calls for reducing return assumptions to 7%, a step which is broadly recognized as a step in the right direction, but this is also a step that pushes Houston’s June of 2015 unfunded liability to $8.3 billion (includes roughly 600 million in outstanding pension obligation bonds). When Fiscal 2016 information is made available later this year, the unfunded liability will get bigger because fiscal year 2016 plan returns fell short of the assumed 7% rate of return. Further, if a discount rate of 5% that takes the prospect of lower future returns into account is used, Houston’s unfunded liability is probably higher by a factor of 40% to 60%, which means that the unfunded liability that will ultimately have to be paid for could be closer to $12 to $14 billion dollars.

Property Taxes: At a minimum Houston has an unfunded liability of $8.3 billion. If a deal can achieve the as yet unspecified $2.5 Billion in benefit reductions, then Houston will still have an unfunded pension liability of roughly $6 Billion (includes pension obligation bonds). The plan being discussed is to amortize the remaining unfunded liability over the next 30 years. To get an idea of how much this will cost, one can perform a simple amortization of the unfunded liability. Using this

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6 CAFR’s for the city of Houston, San Jose, San Diego and Chicago
9 Mayor unveils tentative pension reform deal, Houston Chronicle, Sept 14, 2016
10 Meeting with Chuck Reed in his office, June 28, 2016

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logic one can project that amortizing the unfunded liability over the next 30 years would require Houston to increase current pension funding levels to about $700 million a year which represents roughly a $300 million increase to current levels. Think of this as the true cost to be paid by taxpayers at some point. A cost which Houston would presumably use property taxes to pay for over time. This also represents almost a 30% increase in property tax collections from current levels. However, things are more complicated than the above. Cities do not amortize unfunded pension debt the way an individual or bank would amortize a mortgage. Municipalities can use an amortization technique referred to as level percentage of payroll. Under this method, payments start low and then move higher over time. The idea is payrolls will grow and that payments will increase on an absolute basis, but will remain constant as a percentage of the growing payroll. This method could make it possible for Houston to begin on a path of amortizing its unfunded pension liability without having to raise the additional $300 million in annual property taxes right away, but it would lock in dramatically higher payments for Houston in the future. This could be a good solution when there is sufficient growth in payrolls and the economy. A prudent examination of this issue would include a review of the payroll growth of large cities that have experienced unfunded pension stress. When measured in terms of head count, the experience in San Diego (8th largest city), Chicago (3rd largest city), San Jose (10th largest city) and Houston (4th largest city) all point to a contraction in payrolls since the early 2000’s. Contracting public sector employment growth that is matched to the dramatically increasing pension debt service payments associated with the level percentage of payroll amortization method could be disastrous under these conditions as debt service would balloon as a percentage of payroll.

Even if the method of amortization selected is prudent and Houston taxpayers vote to remove the ceiling on property taxes to pay for amortizing the unfunded pension liability, the unfunded liability could become materially larger if future returns come in below 7%. In the event that this happens, the additional funding needed in Houston could easily double to more than $600 million annually (assumes standard amortization). In this circumstance, taxpayers, most of whom have to fund their own retirement, could be handed an annual property tax increase of close to 60%. The reality of this scenario is validated by Chicago, a city that is presently in a calamitous underfunded pension circumstance. Chicago is about 10% larger in terms of population than Houston. Houston collects just over a billion dollars in annual property taxes. In 2016 Chicago has increased property taxes by $838 million and passed another $239mm in water and sewer taxes. In all just over a billion dollars in new taxes are to be phased in over a period of several years. All but about $40 million of the new tax proceeds will go to funding pensions. Sadly, even more tax increases will be needed to fully amortize Chicago’s unfunded pension liability over a 40-year time horizon. If returns do not come in as expected

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6 CAFR’s for the city of Houston, San Jose, San Diego and Chicago
7 Bloomberg News, Chicago Faces Record Tax Hike as Pensions Compound Deficit, (Sept 22, 2015)
Chicago’s only option may ultimately be bankruptcy because the Illinois legal system makes it nearly impossible to change pension benefits. The good news for the citizens of Houston is that in terms of pension reform the Texas legal system is about as good as it gets, so in Texas pension reform is coming and Houston has the chance to lead the nation in a better direction.

**Risk Sharing:** A possible solution being discussed is risk sharing. Risk sharing would involve as yet unspecified underfunding thresholds that would trigger benefits cuts or additional employee contributions. For example, say Houston adopts the former Chief Pension Officer’s suggestion to limit city pension contributions to 20% of payrolls\(^4\). Followed by Houstonian voters lifting the lid on property taxes by an amount sufficient to pay the incremental $300 million that is needed annually to amortize the balance of the unfunded pension liability over the next 30 years. Then imagine the circumstance where plan returns come in lower than expectation (7%) and another $300 million a year is needed to amortize a now larger unfunded liability. Risk sharing could be used to obtain additional benefit cuts as opposed to going back to taxpayers for additional property taxes to address the additional shortfall. The size of the cap on pension contributions and how cost sharing is structured and enforced will be crucial. It is easy to envision controversy surrounding the setting of thresholds and the cutting of benefits. However, if risk sharing can produce ironclad benefit cuts something along the lines of the above, then there is a real chance for a good outcome in Houston.

**Observation:** Useful perspective might also be gained by examining what the size and scope of the problem would be if benefit levels were reset to levels that existed prior to benefit increases in 2001. If the retirement benefit simply consisted of a plain vanilla defined benefit pension that looked something like 70 to 80% of the average salary for the last 3 years of an employee’s earnings history with full vesting after 35 or more years of service and the city could afford it, that would still be a very generous benefit relative to the 401k benefit offered in the private sector.

**Conclusion:** Nationally, the problem of underfunded municipal pensions has been a slowly developing systemic problem. Today the prospect of lower future returns is now amplifying and accelerating the spread of underfunded pensions. Houston has an urgent problem and Texas has laws that provide the opportunity for pension reform. If Houston can truly address its problem, it will preserve a bright future for the City and can possibly help Texas to lead the way in pension reform nationally. If this happens, investor money will come to Texas because Texas will have demonstrated great responsibility in dealing with a very difficult issue. On the flip side if one can’t fix these issues in Texas, there may be no solution nationally. A lot is at stake.

\(^4\) “Mayor’s pension reform plan is a good try, but misses the core problem”, Houston Chronicle, Craig Mason, September 24, 2016
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