A Pivotal Moment:
Assessing Houston's Plan for Pension Reform

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About the Laura and John Arnold Foundation

Our core objective is to improve the lives of individuals by strengthening our social, governmental, and economic systems.

At a Glance

- Houston owes $8.2 billion in pension debt, plus an additional $586 million in pension obligation bonds. As a result, the city does not have enough money to pay for nearly half of the benefits that workers have already earned.

- This debt has had a direct impact on the city's finances and its ability to provide essential public services. For example, the number of public safety personnel has declined during the past decade, even as spending on public safety has risen—driven by a 55 percent increase in pension costs.

- Without reforms to the pension systems, the city's financial problems will get worse. In light of the serious issues facing Houston, Mayor Sylvester Turner developed a proposal that would make a number of changes to the city's pension systems. The city is currently seeking approval from the Texas Legislature to implement the proposal, as the state controls the city's police, fire, and municipal employees pension plans.

- The proposed changes include lowering the plans' assumed rate of return on investments; reducing benefits for public workers; and implementing a financial corridor provision that would cap the city's contributions to the pension systems, and provide a mechanism to address future cost increases. The city would also issue a total of $1 billion in pension obligation bonds to provide lump-sum payments to the police and municipal employees plans.

- If approved by the state legislature, the proposal would place the plans and the city on firmer financial footing. It would also accomplish key principles of responsible pension reform. Specifically, it would provide a plan to pay down the pension debt in 30 years or less and would limit the city's—and ultimately, taxpayers'—exposure to cost increases.

- However, public workers, who have already agreed to $2.5 billion in concessions, are poised to shoulder considerably more risk under the proposal. If the city's contribution rates hit or surpass the cap, workers would be required to make additional benefit changes in order to bring costs back below the cap.

- The impact of the corridor provision on workers would depend on the plans' investment performance and demographic trends. For example, the Laura and John Arnold Foundation's (LJAF) modeling shows that if the police plan's investment portfolio earned average investment returns of 7 percent during the next decade, there would be a two in five (40 percent chance that the city's contribution rate would hit the cap for the police fund at least once by 2027. There would be roughly a one in three (33 percent) chance that the city would hit that rate at least twice within that time period.

- If the police plan performs as expected, the odds would be one in three (33 percent that contribution rates for members of the plan would increase by five percentage points or more during the next 10 years.

- The corridor provision could prove to be unsustainable in the long run if workers bear a disproportionate share of pension costs. Given this risk, city leaders must take steps to protect public employees. This includes limiting the amount of money invested in volatile, hard-to-value assets such as real estate, private equity, and hedge funds.

- The city should also consider enrolling new workers in retirement systems that are simpler and easier to manage, such as a Defined Contribution plan or a Cash Balance plan. These plans would limit the accrual of additional pension debt and provide the city with the flexibility to respond to changing economic and demographic trends.

- Houston's financial future will depend in large part on decisions made in the next month. The city's proposal represents meaningful progress toward establishing a fair and sustainable solution to its pension problems. Houston should have the opportunity to implement reforms developed by local stakeholders in order to improve the pension plans' financial stability.

Introduction

Houston has experienced record growth during the last decade. Yet despite its strong economic performance, the fourth-largest city in the United States is facing financial challenges caused by years of mismanagement of its public pension systems. According to local officials, Houston owes $8.2 billion in pension debt, plus an additional $586 million in pension obligation bonds—more than any other city in Texas.

This growing unfunded liability has had a direct impact on city finances. Today, Houston does not have enough money to pay for nearly half of the retirement benefits workers have already earned. Moreover, local officials have been forced to dedicate more of the budget to pension payments, leaving less money for critical public services. During the last 10 years, the city has cut public safety positions, even as spending on public safety has grown by hundreds of millions of dollars due to a 55 percent increase in pension costs.

In light of the serious issues facing Houston's pension systems, Mayor Sylvester Turner developed a reform plan following discussions with the Houston Police Officers' Pension System (HPOPS), Houston Municipal Employees Pension System (HMEPS), and the Houston Firefighters' Relief and Retirement Fund (HFRRF) that is intended to address flaws in the city's pension funding practices.

Under the proposal, the city would lower its assumed rate of return on pension investments; reduce benefits for current workers and retirees; and implement a financial corridor provision that would cap the city's contributions to the pension systems and provide a mechanism to address future cost increases. Houston would also issue $1 billion in pension obligation bonds to provide an infusion of cash into the two plans facing the largest deficits—the municipal employees plan and the police plan.

The proposal incorporates key principles of responsible pension reform. It establishes a road map to pay down the pension debt in 30 years or less and would reduce the city's exposure to risk by lowering investment return assumptions. It would also provide substantial new protections for taxpayers. However, public workers' exposure to risk would increase, as the financial corridor provision would require employees to make benefit changes if the city's pension costs were to exceed the cap.

In the short term, the proposal would place the pension plans—and the city—on firmer financial footing. The long-term impact would depend on how the changes are implemented. A key caveat is that the Texas Legislature ultimately controls Houston's pension plans, and local officials and the pension boards must seek approval from state lawmakers before implementing many of the proposal's provisions. Given that the legislature meets every two years, Houston leaders have a limited window to seek such approval.

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This brief examines various aspects of Houston's pension reform plan in order to provide policymakers, workers, taxpayers, and other members of the public with a better understanding of how the proposal would affect the city's pension systems. In addition, the brief explains the risks for current and future workers, and outlines safeguards—such as improvements to the plans' investment policies and stronger transparency measures—intended to protect workers and taxpayers.

The Current Situation

Rising pension debt in Houston has prompted significant financial challenges. In 2016, Houston ended the year with its first-ever operating deficit, which Mayor Turner said was directly tied to unfunded liabilities and growing pension payments. The seriousness of this trend is evidenced by a recent report from Moody's Investors Service, which ranked Houston fourth in the country among large metropolitan areas for the size of debt compared to revenue.[1] According to Moody's, Houston's pension debt is four times larger than general fund revenue, which means that the city is at risk of not being able to pay its retirement promises in full.

Table 1. Houston's Pension Debt Is Four Times Larger Than General Fund Revenue

	Pension Debt (in Millions)	Funded Ratio	Share of Total Shortfall	ADC* (in Millions)
Pension Plan	**$8,208**	**55%**	**100.0%**	**$423**
Houston Firefighters' Relief and Retirement Fund	$1,588	70%	19%	$87
Houston Municipal Employees Pension System	$3,182	43%	39%	$175
Houston Police Officers' Pension System	$3,437	54%	42%	$160

Pension Obligation Bonds Payable	**$586 Million**
General Fund Revenue	**$2,294 Million**

Source: Authors' calculations; City of Houston, Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System comprehensive annual financial reports; Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System actuarial valuation reports; Guide to Public Retirement Systems in Texas by the Texas Pension Review Board; State Pension Review Board of Texas Board Meeting — November 3, 2016 by the Texas Pension Review Board; HPOPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and HMEPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.
*Actuarially Determined Contribution (ADC).
Note: Pension debt is estimated using market value of assets and Governmental Accounting Standards Board (GASB) results in accordance with Statements Nos. 67 and 68. Data corresponds to Fiscal Year 2016, which ends June 30, 2016.

Due to Houston's growing unfunded liabilities, Actuarially Determined Contributions—or the amount needed to cover the cost of new benefits earned by workers each year along with the contributions needed to pay down the debt—have increased by $284 million since 2000. The city's recommended contributions are now equivalent to nearly 20 percent of general fund revenue; however, Houston has failed to contribute the recommended amount each year since 2006. Thus, even though Houston is paying millions of dollars more into its pension funds annually, the contributions are still not enough to cover the full cost of its retirement promises.

1 Aaron, Thomas and Blake, Timothy. (Nov. 4, 2016). "Pensions Increasingly Prominent in Credit Profiles of Many Large Local Governments." Moody's Investors Service.

As pension costs have risen, officials have been left with less money to spend on infrastructure improvements and critical public services. The most notable example of this problem is the budgetary constraints facing the city's police and fire departments. The number of public safety personnel has declined by 1.9 percent since 2007. Yet public safety costs have grown by $475 million—driven by a 55 percent increase in pension costs. This is especially troubling given Houston's rapid population growth during the last decade. More than 125,000 people moved to the greater Houston region in 2016 alone, creating new demands for public safety services and further exacerbating the funding problems.[2]

Projections show that Houston's pension debt will continue to grow unless the city improves its pension funding practices. Currently, the plans use what is known as an "open amortization" schedule to calculate payments to the pension systems. Under this method, the plans reset the payment period each year. This means that pension debt will never be fully paid off, and Houston will incur costly periods of negative amortization, or compounding interest, which will cause unfunded liabilities to increase.

Projections show that Houston's pension debt will continue to grow unless the city improves its pension funding practices.

Furthermore, Houston currently assumes that it will earn returns of 8 percent or more on the plans' investments. These investment assumptions are among the highest in the nation, and the funds have repeatedly earned less than expected.[3] In fact, during the past 10 years, the plans have averaged returns of just 6.2 percent. The city has failed to contribute enough to cover these shortfalls, which has added to the rising debt.

By using overly optimistic investment return assumptions to calculate pension payments, the plans have mischaracterized to taxpayers the cost of providing benefits. It is unlikely that the funds will achieve their current expected rate of return in either the short or long term, and therefore, the cost to taxpayers of providing benefits is ultimately much higher than local officials have reported in recent years. For example, in 2016, the most recent year for which comprehensive annual financial reports are available, the plans reported it would cost $15.7 billion to pay for liabilities, which are the benefits that workers have already earned. However, using an assumed rate of return of 7 percent, which is a more reasonable expectation for future returns, liabilities increase to $18.4 billion. Under this more reasonable investment return assumption, pension debt increases from $5.5 billion to $8.2 billion.

2 Kriel, Lomi. (March 23, 2017). "Harris County drops to No. 2 nationally in population growth, according to Census data." Houston Chronicle. Retrieved from http://www.houstonchronicle.com/news/houston-texas/houston/article/Harris-County-drops-to-No-2-nationally-in-11024290.php.

3 The median investment return assumption for public pension plans is 7.6 percent.

Although Houston must make changes to the pension system to improve its financial stability and pay down its unfunded liabilities, given the size of its debt, it will not be financially feasible to simply change the funding practices. Forecasts released by the city indicate that if it were to lower its investment rate to 7 percent and commit to paying down the debt in 30 years or less, the recommended contribution rate for the police plan alone would increase by nearly 18 percentage points to 59.4 percent of payroll for Fiscal Year 2018.[4] This means that for every dollar the city spends on police payroll costs, it would need to contribute 59 cents to the pension system largely in order to pay off its debts. This would require astronomical tax increases or cuts to public services.

In comparison, if the city were to lower its expected investment rate to 7 percent for the fire plan, the city's recommended contribution rate would increase from 30.8 percent of payroll to 70 percent of payroll. Similarly, the city's recommended contribution for the municipal employees plan would increase from about 31.8 percent of payroll to 39.4 percent of payroll.

Thus, reforming the pension system and balancing the budget will require shared sacrifice from all stakeholders, including both workers and taxpayers. In December, Mayor Turner said he would not "sugar-coat" the dramatic increase in pension payments.[5] He has worked with members of the pension plans to develop a proposal to improve the city's funding practices. However, Houston's pension plans, like those in other major cities across the state, including Dallas, Austin, San Antonio, and Fort Worth, are controlled by the state legislature. This means that local leaders' ability to implement changes to the system is limited, and any substantial reforms will require state approval.

4 Houston's fiscal year begins July 1 and ends June 30.
5 Ackerman, Todd. (Dec. 30, 2016). "For first time, city ends year with deficit." Houston Chronicle. Retrieved from http://www.houstonchronicle.com/news/houston-texas/houston/article/Houston-s-liabilities-exceeding-assets-fueled-by-10827756.php.

The City's Proposal

Summary

Houston's flawed funding practices are one of the key drivers of the city's growing pension costs. The city's proposal is intended to strengthen the plans' financial security by making three primary changes to the pension systems.[6]

- It would lower the assumed rate of return to 7 percent for all plans, down from 8.5 percent for the fire plan, and 8 percent for the municipal employees and police plans. Officials would also make the city's Actuarially Determined Contribution in full each year, and the city would pay off the pension debt within 30 years.

- To address the fact that lowering the assumed rate of return would cause contributions to rise to a level that would be financially unsustainable for the city, the plans would implement benefit adjustments, including changes to Cost of Living Adjustments (COLA) and additional savings accounts known as Deferred Retirement Option Program (DROP) accounts.[7]

- A financial corridor provision would cap the city's payments to the systems at five percentage points above the expected cost of the pension plans. Workers would be required to make additional benefit adjustments or increase their contributions if city contributions exceed that cap. This mechanism would provide relief to taxpayers, who have thus far assumed the burden of rising pension costs, and would shift some of the market risk to workers.

In addition, Houston would issue $1 billion in pension obligation bonds in order to shore up the municipal employees and police pension plans. The police plan and municipal employees plan would receive $750 million and $250 million, respectively, from the sale of the bonds, providing a significant infusion of cash into each plan.

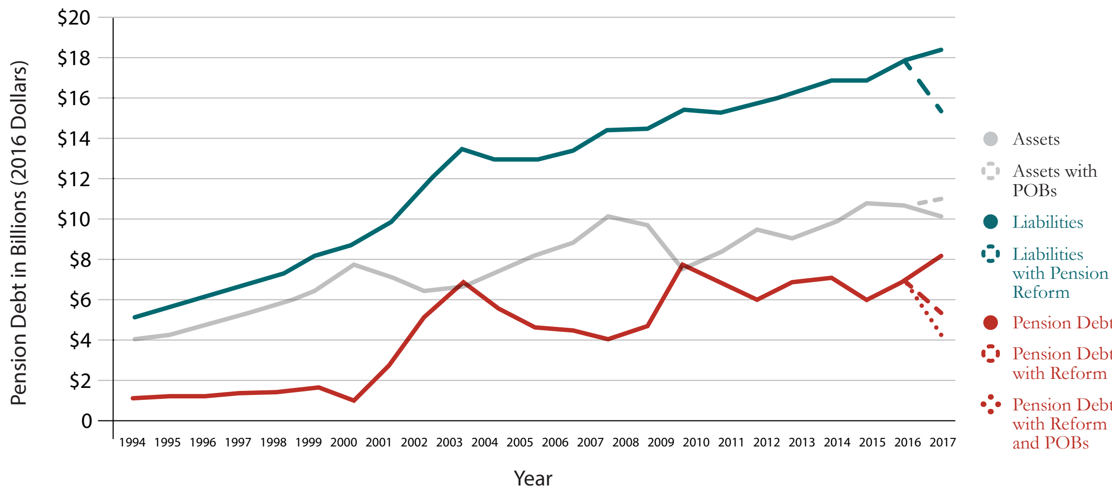
6 The information included in this section is from actuarial analyses provided by the City of Houston and the pension plans, and from publicly available sources such as comprehensive annual financial reports. The projected effects of reform may deviate from actual effects, as the Laura and John Arnold Foundation's modeling is based on the information included in these reports and does not reflect amendments or changes that might have been made during the legislative process.

7 Deferred Retirement Option Program (DROP) accounts are intended to incentivize experienced employees to stay in the workforce. DROP offers workers who are eligible to retire a guaranteed investment return in exchange for deferring their pension benefits. Employees can choose to withdraw their savings immediately upon retirement or leave them in the account in perpetuity. When an employee withdraws the funds from his or her account, the savings and guaranteed investment returns are paid out as a lump sum in addition to the individual's monthly annuity benefit.

Analysis

LJAF's analysis indicates that the proposed changes would improve the stability of the pension systems. Lowering the plans' investment assumptions to 7 percent would provide a more accurate estimate of Houston's total debt, and help to ensure that the city sets contributions at an appropriate level to cover its retirement promises and pay down legacy costs.

Graph 1. Houston Owes $8.2 Billion in Pension Debt (7 Percent Assumed Rate of Return)



Source: Authors' calculations; Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System comprehensive annual financial reports; Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System actuarial valuation reports; Guide to Public Retirement Systems in Texas by the Texas Pension Review Board; State Pension Review Board of Texas Board Meeting – November 3, 2016 by the Texas Pension Review Board; HPOPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; HMEPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and Bureau of Labor Statistics.
Note: Pension debt is estimated using market value of assets and 15-year conservative assumption of approximate duration of pension liabilities. Adjusted for inflation.

Although Actuarially Determined Contributions would increase, city officials have proposed roughly $2.5 billion in benefit reductions that would lower the unfunded liability to $5.7 billion and keep pension payments at a level that Houston can afford.

The financial corridor provision also provides a risk-sharing mechanism that would limit the impact of future cost increases on taxpayers. Up to this point, taxpayers have picked up the tab for the city's growing unfunded liabilities. As mentioned previously, pension payments have risen by hundreds of millions of dollars since 2000. Capping the city's contribution rate would help to ensure that taxpayers are not solely responsible for covering increases in pension costs going forward.

However, the proposal's impact on public workers would ultimately determine the sustainability of the reforms. Defined Benefit plans require pension plan managers to make a number of complex calculations about demographic and economic trends in order to assess how much money is needed to cover the cost of benefit promises. Although the financial corridor provision is a reasonable approach to managing retirement costs, it could place an unfair burden on future public workers.

Minor fluctuations in investment returns or other assumptions could result in large increases in the city's contribution rate. As a result, plan members would be required to make additional benefit adjustments. Thus, the corridor provision could prove to be unsustainable in the long run if workers are forced to bear a disproportionate share of the pension costs. Moreover, if the provision were to fail, the city has not proposed a back-up plan to address the issue.

The city and the plans should take additional proactive steps to control pension contributions, including lowering the level of risk in their portfolios over time; strengthening transparency and oversight of their investments; and enrolling new workers in retirement systems that are simpler and easier to manage, such as a Defined Contribution plan or a Cash Balance plan.

The Corridor Provision

The success of the city's proposal hinges on the implementation and management of the financial corridor provision in particular. Under the corridor provision, actuarial studies performed by the city and the pension plans would be used to set a "midpoint," which would reflect the city's expected pension costs for the next 30 years. Minimum and maximum contribution rates for the city would be set five percentage points below and above the midpoint, respectively, and there would be a pre-specified set of actions that local leaders would take if the city's contribution rate fell below the minimum or surpassed the maximum. Notably, if costs were to exceed the maximum, the pension plans would be required to make changes, such as reducing benefits or increasing their contributions, to compensate for rising costs and bring the city's payments back below the cap.

The success of the city's proposal hinges on the implementation and management of the financial corridor provision in particular.

The corridor provision—which is unique to Houston's proposal and has not been tested in any other jurisdiction to date—would establish substantial financial protections for the city and taxpayers. The impact on workers would depend on the plans' investment performance and demographic trends, as these factors would determine how often the city's contribution rate hits the cap. LJAF's modeling estimates that even if long-term returns average 7 percent, there is a two in five (40 percent) chance that the city's contribution rate would hit the proposed maximum for the police fund at least once by 2027. There is roughly a one in three (33 percent) chance that the city would hit that rate at least twice within that time period.

Another factor to consider when evaluating how the reforms would affect employees is the probability that the funds would achieve the expected rate of return of 7 percent as outlined in the proposal. That rate is below the current median rate for public pension plans, which is about 7.6 percent. But the city would still be relying on assumptions that are more than four percentage points higher than the risk-free rate of return in order to pay down its debts. This means that Houston, and ultimately, workers and taxpayers, would continue to take on significantly more risk than public plans did in the 1990s, when assumed returns were much closer to the prevailing interest rates and nearly all public pension plans were fully funded.[8]

If Houston's pension plans consistently miss the proposal's expected rate of return by even one percentage point, the odds that the city's contributions would hit the cap increase. For example, there is a one in two (50 percent) chance that the city would hit the contribution cap for the police plan at least once during the next 10 years if the plan's long-term returns average 6 percent. In fact, if the plan consistently earns returns of 6 percent, it would hit the cap around 2024. If the plan consistently earns 5 percent returns, it is projected to hit the cap even sooner—around 2020.

Each time the city hits the cap, members would be required to increase their contributions by a minimum of 2.5 percentage points or would have to cut benefits by an equivalent amount. The benefit cuts would be at the discretion of the plans; however, it is likely that changes would be made to the COLA or the DROP because minor adjustments to either benefit can result in significant savings.

If the police plan's long-term returns average 7 percent, as the city anticipates, there is a one in three (33 percent) chance that member contribution rates would increase by five percentage points or more during the next decade.[9] Contribution rates could also increase by more than 10 percentage points, although that scenario is less likely if long-term returns match the plan's assumptions. Over the next decade, the odds are about one in five (20 percent) that rates would increase by 10 percentage points or more for members of the police plan and one in seven (roughly 15 percent) that contribution rates would increase by 15 percentage points or more.

The potential impact of the corridor provision would also vary across the funds. There is a greater chance that the city's contributions would hit the cap for the police and fire plans than for the municipal employees plan. The police and fire plans have made larger benefit promises relative to

8 As of April 17, 2017, the risk-free rate of return was set at 2.3 percent. On average, pension plans assume nominal returns of 7.6 percent on their investment portfolios. In comparison, private investment firms, including Bogle and Nolan, Charles Schwab, Goldman Sachs, J.P. Morgan, and McKinsey & Company, have projected average annual returns of 7 percent or less for the foreseeable future, according to a report released by the Center for Retirement Research at Boston College.
9 This is modeled using 7 percent as the long-term geometric average return with a standard deviation of 14 percentage points.

payroll and also hold more in assets. Therefore, it would be costlier for either of those plans to make up for investment losses than it would be for the municipal plan.

If contribution rates were to dramatically increase for workers during the next 10 years, it would have a detrimental effect on Houston's ability to recruit and retain public workers.

If contribution rates were to dramatically increase for workers during the next 10 years, it would have a detrimental effect on Houston's ability to recruit and retain public workers. City employees have already agreed to billions of dollars in concessions. Although Houston's police officers and firefighters earn salaries above the national average for public safety personnel, under the proposal, they would contribute a higher percentage of their salaries to the pension systems than their peers across the country.[10] Additional increases in contribution rates could affect employment in other ways. Economic research shows that changes to take-home pay often result in increased worker turnover as compared to when employers make changes to deferred compensation. The city has reportedly already seen a wave of retirements among police officers since the proposal was introduced.[11]

Pension Obligation Bonds

If the proposal is approved, the city and the pension plans would need to take appropriate steps to avoid hitting the corridor cap given the impact it could have on workers. The city would need to make payments on time and in full, while the plans would need to adopt investment practices that take into account downside risk and place limits on allocations to volatile, complex, and hard-to-value assets such as real estate, private equity, and hedge funds, which often come with a hefty price tag.

Another key obligation Houston would need to follow through on is its promise to provide a cash infusion to the police and municipal employees plans. City officials used pension obligation bonds as a bargaining chip during the negotiations, and officials owe it to public workers to make good on this promise in return for employees agreeing to accept substantial benefit reductions. However, the bonds also pose some risk to workers and taxpayers. In order to benefit financially, Houston would need to earn more in the market than it costs to borrow the money. If investment yields are lower than borrowing costs, the city will have to pay off the loan and make up the difference between earnings and what was promised to the plans.

10 Fulton, Bill. (Oct. 25, 2016). "Houston's Pension Reform Package: Our Latest Analysis." The Urban Edge. Retrieved from http://urbanedge.blogs.rice.edu/2016/10/25/houstons-pension-reform-package-our-latest-analysis/#.WPeSslXyscU.
11 Morris, Mike. (Dec. 22, 2016). "Top commanders among surge in HPD retirements." Houston Chronicle. Retrieved from http://www.houstonchronicle.com/news/politics/houston/article/Top-commanders-among-surge-in-HPD-retirements-10814708.php.

Historically, the city has been charged interest between 4.5 and 6.5 percent on pension bonds.[12] Under current market conditions, the spread between bond interest rates and expected returns is relatively small. According to data provided by the city and LJAF's estimates, the maximum savings—or cost avoidance—that the city would generate through the issuance of the bonds would be about 2 percent of payroll for the police plan and 0.5 percent for the municipal plan.[13]

Furthermore, there is a reasonable chance that it would cost the city more to borrow money than it would if Houston were to contribute an equivalent amount to the plans over the same term as the loan. Despite the risk, the pension obligation bonds are a good-faith measure that indicate the city's commitment to upholding its funding promise in the future.

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The bottom line is that the city's proposal would make important changes to Houston's pension systems that would help protect workers' retirement security and improve the city's overall fiscal health. It includes several elements of foundational reform that would help to address the plans' legacy costs.

Going forward, the city will need to make additional changes to the plans' investment policies to protect workers. Houston should also consider enrolling new employees in alternative plans that are simpler and easier to manage, such as a Defined Contribution plan or a Cash Balance plan, in order to ensure there is a comprehensive, permanent solution to the city's pension problems.

12 Houston issued about $586 million in pension obligation bonds during the mid-2000s. According to research conducted by the Center for Retirement Research at Boston College, these bonds have not resulted in savings for the city. Rather, if the term of the loan were to end today, the proceeds would be $18 million less than the amount owed to the bondholders.

13 This projection assumes a 4 percent interest rate.

Conclusion

Houston's $8.2 billion pension debt poses significant risks to workers and taxpayers. Without reform, citizens will be forced to make difficult decisions between cutting public services and raising taxes, while workers' retirement security could be compromised.

Local leaders should be commended for their efforts to reach an agreement and develop a proposal that would improve the pension systems' financial stability. The proposal would accomplish key goals of responsible pension reform by establishing a plan to pay off Houston's pension debt within 30 years and by providing a mechanism—through the financial corridor provision—to control future cost increases. However, more will need to be done in the future to establish a lasting solution to the city's pension problems.

The city's proposal is an important first step. If state legislators give local leaders an opportunity to implement reform, Houston city officials will need to uphold their end of the bargain. They will need to make payments on time and in full. In addition, they will need to deliver on the promised pension obligation bonds, as workers have already agreed to a number of substantial concessions and are poised to bear considerably more investment risk.

Going forward, Houston should make additional changes to reduce risk and protect workers, including limiting the amount of money allocated to volatile, hard-to-value assets. The city will also need to closely monitor the effect of the corridor provision. If the plans' assumptions turn out to be overly optimistic and pension costs dramatically rise over time, the corridor provision could place an undue financial burden on future workers. In such a scenario, the city and the pension plans would need to act quickly and make additional reforms to address the situation.

The city should also consider adopting retirement plans for new employees that are simpler and easier to manage. These plans would provide additional protections for new workers and taxpayers. While placing new employees in a Defined Contribution plan or a Cash Balance plan would not reduce current unfunded liabilities, it would help ensure that the city does not accumulate large and costly pension debts in the future. It would also provide Houston with the flexibility to respond to changing economic and demographic trends.

Mayor Turner and members of the pension boards have shown leadership in their willingness to address Houston's pension problems. The issue now rests with the state legislature. There are just a few weeks left in the 2017 session—and without the ability to make changes to the pension systems on its own—the city is running out of time. Without changes, the debt could spiral into a full-scale financial crisis. The city cannot allow that to happen. Its financial future hangs in the balance and will be decided in large part in the next month.

Local leaders have made considerable progress. There is a deal on the table, and now is not the time to turn back. Houston's proposal represents meaningful progress toward establishing a fair and sustainable solution to the city's pension problems.

Local leaders have made considerable progress. There is a deal on the table, and now is not the time to turn back.

Paying off the pension debt will require shared sacrifice. The city must take action to improve the financial stability of its plans and protect workers and taxpayers. Pension reform in Houston would allow the city to deliver on its promises to workers and preserve critical public services.

Communities across Texas and around the nation are watching. If the Houston plan is enacted, it has the potential to serve as a model for others looking for solutions to their own pension problems.

Appendices

Appendix 1:

- Pension Plan Funding Levels After Reform

Appendix 2:

- Projected City Contribution Rates for the Houston Firefighters' Relief and Retirement Fund
- Projected City Contribution Rates for the Houston Municipal Employees Pension System
- Projected City Contribution Rates for the Houston Police Officers' Pension System

Appendix 3:

- The Impact of the Financial Corridor Provision on the Houston Police Officers' Pension System

Appendix 1

Pension Plan Funding Levels After Reform

	Without POBs*		With POBs	
	Pension Debt (in Millions)	Funded Ratio	Pension Debt (in Millions)	Funded Ratio
Pension Plan	**$5,218**	**66%**	**$4,315**	**72%**
Houston Firefighters' Relief and Retirement Fund	$435	90%	$435	90%
Houston Municipal Employees Pension System	$2,414	50%	$2,188	55%
Houston Police Officers' Pension System	$2,369	63%	$1,691	74%

Pension Obligation Bonds Payable and Future Bonds	**$1,490 Million**
General Fund Revenue	**$2,294 Million**

Source: Authors' calculations; Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System comprehensive annual financial reports; Houston Firefighters' Relief and Retirement Fund, Houston Municipal Employees Pension System, and Houston Police Officers' Pension System actuarial valuation reports; Guide to Public Retirement Systems in Texas by the Texas Pension Review Board; State Pension Review Board of Texas Board Meeting – November 3, 2016 by the Texas Pension Review Board; HPOPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and HMEPS Pension Reform Cost Analysis from the City of Houston and Retirement Horizons Inc.

*Pension Obligation Bonds (POBs).

Note: Pension debt is estimated using market value of assets and Governmental Accounting Standards Board (GASB) net pension liability. If the reforms are implemented, they would take effect July 1, 2017. The table reflects an effective date of June 30, 2016. .

Appendix 2

Projected City Contribution Rates for the Houston Firefighters' Relief and Retirement Fund

		Baseline (7 Percent Assumed Rate of Return and 30-Year Closed Amortization)			After Reform			
Fiscal Year	Payroll (in Millions)	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	City Cont. Difference
2017	$265.0			36.5%				
2018	$272.3	36.7%	34.3%	71.0%	15.1%	10.7%	25.8%	45.2%
2019	$279.8	36.7%	33.7%	70.4%	15.1%	10.7%	25.8%	44.6%
2020	$287.5	36.7%	33.1%	69.8%	15.1%	10.7%	25.8%	44.0%
2021	$295.4	36.7%	32.5%	69.2%	15.1%	10.7%	25.8%	43.4%
2022	$303.5	36.7%	32.0%	68.6%	15.1%	10.7%	25.8%	42.8%
2023	$311.9	36.7%	31.4%	68.1%	15.1%	10.7%	25.8%	42.3%
2024	$320.5	36.7%	30.9%	67.5%	15.1%	10.7%	25.8%	41.7%
2025	$329.3	36.7%	30.3%	67.0%	15.1%	10.7%	25.8%	41.2%
2026	$338.3	36.7%	29.8%	66.5%	15.1%	10.7%	25.8%	40.7%
2027	$347.6	36.7%	29.3%	66.0%	15.1%	10.7%	25.8%	40.1%
2028	$357.2	36.7%	28.8%	65.4%	15.1%	10.7%	25.8%	39.6%

Source: Authors' calculations; Houston Firefighters' Relief and Retirement Fund July 1, 2013 Actuarial Valuation Report; City of Houston HFRRF Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and Pension Obligation Bonds Debt Service Schedule by the City of Houston. Note: Fiscal Year 2017 payroll is estimated by Retirement Horizons Inc. For subsequent years, the modeling assumes 2.75 percent payroll growth for the Houston Firefighters' Relief and Retirement Fund. Baseline and post reform excludes overtime.

Appendix 2

Projected City Contribution Rates for the Houston Municipal Employees Pension System

		Baseline (7 Percent Assumed Rate of Return and 30-Year Closed Amortization)			After Reform (Excluding POBs*)				After Reform (Including POBs)		Total City Cont. (Pension Cont. + POB Debt Service) at Different POB Interest Rates			
Fiscal Year	Payroll (in Millions)	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	City Cont. Difference	Amort. of Pension Debt	City Cont. Rate	~4%	~4.5%	~5%	~6%
2017	$624.6			29.4%										
2018	$641.8	9.8%	29.7%	39.4%	8.4%	20.3%	28.7%	10.7%	18.1%	26.5%	28.2%	28.3%	28.5%	28.9%
2019	$659.5	9.8%	29.0%	38.8%	8.4%	20.3%	28.8%	10.0%	18.1%	26.6%	28.3%	28.4%	28.5%	28.9%
2020	$677.6	9.8%	28.4%	38.2%	8.5%	20.3%	28.8%	9.4%	18.1%	26.6%	28.3%	28.4%	28.5%	28.9%
2021	$696.2	9.8%	27.8%	37.6%	8.5%	20.3%	28.8%	8.8%	18.1%	26.6%	28.3%	28.4%	28.6%	28.8%
2022	$715.4	9.9%	27.2%	37.1%	8.5%	20.3%	28.9%	8.2%	18.1%	26.7%	28.4%	28.5%	28.6%	28.8%
2023	$735.1	9.9%	26.6%	36.5%	8.6%	20.3%	28.9%	7.6%	18.1%	26.7%	28.4%	28.5%	28.6%	28.9%
2024	$755.3	9.9%	26.1%	36.0%	8.6%	20.3%	28.9%	7.1%	18.1%	26.7%	28.4%	28.5%	28.7%	28.9%
2025	$776.0	10.0%	25.6%	35.5%	8.6%	20.3%	28.9%	6.6%	18.1%	26.7%	28.5%	28.6%	28.7%	28.9%
2026	$797.4	10.0%	25.0%	35.0%	8.7%	20.3%	29.0%	6.1%	18.1%	26.8%	28.5%	28.6%	28.7%	29.0%
2027	$819.3	10.0%	24.5%	34.6%	8.7%	20.3%	29.0%	5.6%	18.1%	26.8%	28.5%	28.6%	28.8%	29.0%
2028	$841.9	10.1%	24.1%	34.1%	8.7%	20.3%	29.0%	5.1%	18.1%	26.8%	28.6%	28.7%	28.8%	29.0%

Source: Authors' calculations; Houston Municipal Employees Pension System July 1, 2016 Actuarial Valuation Report; City of Houston HMEPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and Pension Obligation Bonds Debt Service Schedule by the City of Houston. *Pension Obligation Bonds (POBs). Note: Fiscal Year 2017 payroll is estimated by Retirement Horizons Inc. The modeling assumes 2.75 percent payroll growth for the Houston Municipal Employees Pension System. The Pension Obligation Bonds Debt Service as percent of payroll considers 25 percent oftotal debt service regarding the covered payroll of a previous year.

Appendix 2

Projected City Contribution Rates for the Houston Police Officers' Pension System

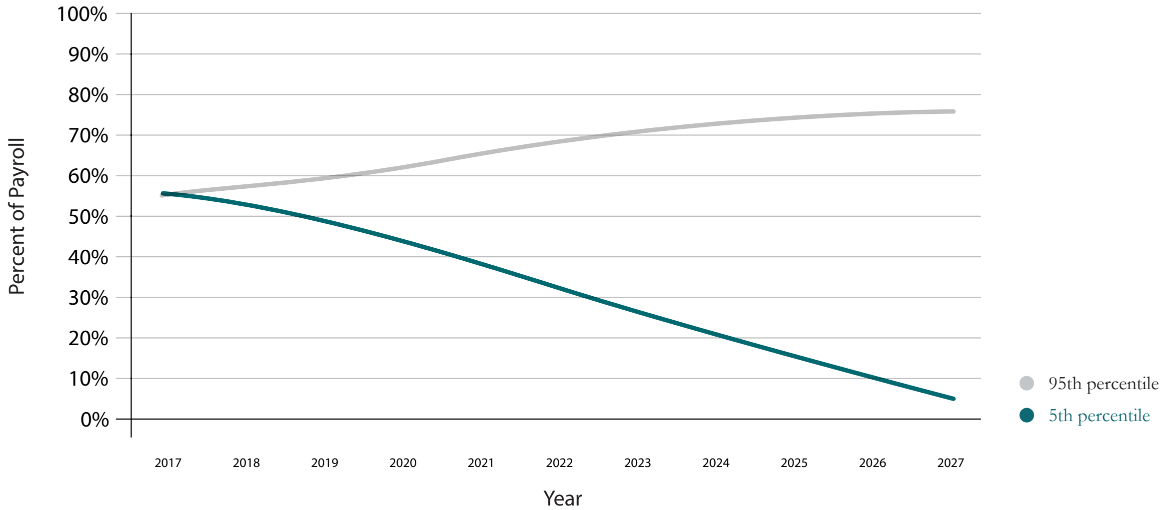
		Baseline (7 Percent Assumed Rate of Return and 30-Year Closed Amortization)			After Reform (Excluding POBs*)				After Reform (Including POBs)		Total City Cont. (Pension Cont. + POB Debt Service) at Different POB Interest Rates			
Fiscal Year	Payroll (in Millions)	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	Normal Cost Rate + Admin. Expenses	Amort. of Pension Debt	City Cont. Rate	City Cont. Difference	Amort. of Pension Debt	City Cont. Rate	~4%	~4.5%	~5%	~6%
2017	$423.7			34.0%										
2018	$435.4	14.7%	44.7%	59.4%	13.3%	28.8%	42.1%	17.3%	19.0%	32.4%	39.8%	40.3%	41.1%	43.0%
2019	$447.4	14.7%	43.9%	58.6%	13.3%	28.8%	42.1%	16.5%	19.0%	32.4%	39.9%	40.4%	40.9%	42.7%
2020	$459.7	14.7%	43.2%	57.9%	13.4%	28.8%	42.1%	15.8%	19.0%	32.4%	39.9%	40.4%	41.0%	42.4%
2021	$472.3	20.8%	42.5%	63.3%	13.4%	28.8%	42.2%	21.1%	19.0%	32.4%	39.9%	40.5%	41.0%	42.2%
2022	$485.3	14.8%	41.8%	56.6%	13.4%	28.8%	42.2%	14.4%	19.0%	32.5%	40.0%	40.5%	41.0%	42.1%
2023	$498.6	14.8%	41.1%	55.9%	13.4%	28.8%	42.2%	13.7%	19.0%	32.5%	40.0%	40.5%	41.1%	42.1%
2024	$512.4	14.8%	40.4%	55.2%	13.5%	28.8%	42.2%	13.0%	19.0%	32.5%	40.1%	40.6%	41.1%	42.2%
2025	$526.4	14.9%	39.7%	54.6%	13.5%	28.8%	42.2%	12.4%	19.0%	32.5%	40.1%	40.6%	41.2%	42.2%
2026	$540.9	14.9%	39.1%	53.9%	13.5%	28.8%	42.3%	11.7%	19.0%	32.5%	40.1%	40.7%	41.2%	42.3%
2027	$558.3	14.9%	38.4%	53.3%	13.5%	28.8%	42.3%	11.0%	19.0%	32.6%	40.2%	40.7%	41.3%	42.3%
2028	$571.1	14.9%	37.8%	52.7%	13.5%	28.8%	42.3%	10.4%	19.0%	32.6%	40.2%	40.7%	41.3%	42.3%

Sources: Authors' calculations; Houston Police Officers' Pension System July 1, 2016 Actuarial Valuation Report; City of Houston HPOPS Pension Reform Cost Analysis by the City of Houston and Retirement Horizons Inc.; and Pension Obligation Bonds Debt Service Schedule by the City of Houston. *Pension Obligation Bonds (POBs). Note: Fiscal Year 2017 payroll is estimated by Retirement Horizons Inc. For subsequent years, the modeling assumes 2.75 percent payroll growth for the Houston Police Officers' Pension System. The Pension Obligation Bonds Debt Service as percent of payroll considers 75 percent of total debt service regarding the covered payroll of a previous year.

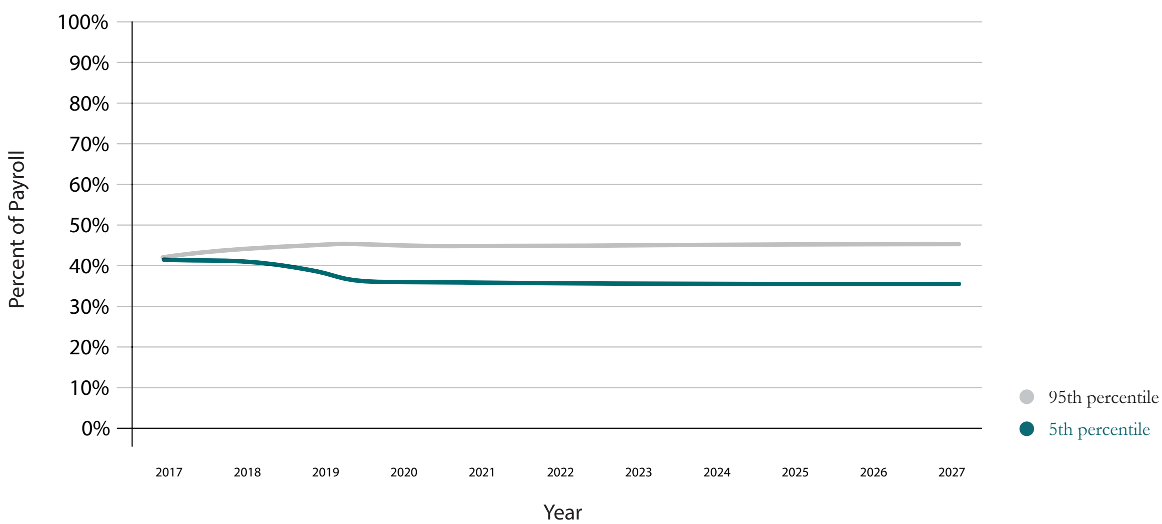
Appendix 3

The Impact of the Financial Corridor Provision on the Houston Police Officers' Pension System

Projected City Contribution Rate (7 Percent Assumed Rate of Return)



Projected City Contribution Rate After Reform (7 Percent Assumed Rate of Return)



Source: Authors' calculations; Houston Police Officers' Pension System comprehensive annual financial reports; and Houston Police Officers' Pension System actuarial valuation reports.
Note: The model assumes a standard deviation of 14 percentage points.