Thoughts on the Looming Pension Problems Facing Chicago, Cook County and Illinois

Joseph L. Pagliari, Jr.†

December 5, 2019

Caveat: This is not a traditional academic study (e.g., it does not rigorously examine one or more data sets in order to accept or reject a testable hypothesis). Instead, it combines the tenets of a survey paper and the advocacy of an opinion piece – with regard to a particular set of vexing economic and political problems affecting a specific geography.

† University of Chicago Booth School of Business: joseph.pagliari@chicagobooth.edu

The author thanks Hines Interests and Riverside Investment & Development Company for commissioning this study. Additionally, the author would like to thank Rob Arnott, Michael Belsky, Austin Berg, Kage Brown, Mike Caron, Rafael Carreira, Pete Constant, Lew Collens, Orphe Divounguy, David Friedman, Peter Glick, Joe Gyourko, Blake Johnson, Sandeep Mathrani, Brian McCarthy, Laurence Msall, Kevin Murphy, John O’Donnell, John Petrovski, Greg Saulnier, Adam Schuster, Brian Septon, Brandon Svec, Kent Swanson and Sarah Wetmore for their helpful comments and perspectives, as well as research assistance provided by Mitch Bollinger and George Posner. However, any errors or omissions are the responsibility of the author.
Thoughts on the Looming Pension Problems Facing Chicago, Cook County and Illinois

Abstract

Recent increases in Cook County’s property taxes have reignited longstanding political controversies about the public-sector expenditures of the City of Chicago, Cook County and the State of Illinois. These fiscal problems leave Illinois with among the worst fiscal health of any of the fifty states. Much of the state’s poor fiscal condition is attributable to the unfunded pension liabilities of its various governmental entities. These liabilities have an adverse impact on property values (due to increased property taxes, uncertainty about how these unfunded pension liabilities are to be ultimately resolved, and the crowding out of public-sector services). Partly as a result of these harmful forces, the Chicago area has seen the lowest home appreciation rate of any major metropolitan area in the country. Importantly, these fiscal problems are expected to worsen, as the gap between the pension plans’ assets and liabilities is expected to widen considerably over the coming decades. Moreover, it is challenging to raise taxes in an environment where Illinois’ overall taxes are the third-highest in the country (and, specifically, its property taxes are the second-highest in the country and its sales taxes are the seventh-highest in the country). Without a comprehensive plan to arrest these runaway pension liabilities, the economic engine that is the Chicago metropolitan area will slowly falter. Now that the Democrats control the governorship as well as both legislative bodies, it would seem an appropriate time to consider a “grand bargain.” I propose three bold items: a) all new public-sector employees are to be enrolled in defined-contribution pension plans, b) all new significant sources of revenue, cost-cutting mechanisms and the monetization of the state’s assets are to be dedicated to the pay-down of unfunded pension benefits, and c) a constitutional amendment is needed to moderately reduce the future benefits (of the current defined-benefit pension plans) of the existing public-sector employees (and their beneficiaries).
I. **INTRODUCTION**

The recent and extraordinary increases in Cook County property taxes\(^1\) (e.g., see Gallun 2019b) have reignited longstanding political controversies about the level of public-sector expenditures and, more threateningly, current commitments to future spending levels. These county-level fiscal problems are intertwined with those of the City of Chicago and the State of Illinois – where the former is the state’s largest economic engine. While this paper does not purport to comprehensively address the many fiscal problems facing the City of Chicago, Cook County and the State of Illinois, this paper does attempt to highlight some of the major problems and present robust/bold solutions.

Importantly, these fiscal problems are well-known and longstanding (for at least 50 years – see: Hinz (2019b)) to anyone who is willing to devote a modest amount of time to investigate them. For example, Illinois has the worst fiscal health of any of the fifty states:

![Map of the United States showing fiscal health rankings](image)


\(^1\) The dramatic increases in property taxes has two components: \(a\) the overall increase in taxes due to spiraling governmental budgets, and \(b\) the allocation (due to the “classification system”) of the property tax burden as between residential and commercial properties. This paper largely focuses on the former.
Much of the state’s poor fiscal condition is attributable to the unfunded pension liabilities of its various governmental entities.² As reported in Norcross and Gonzalez (2018), the market value of the (collective) state’s unfunded pension liabilities is approximately $445 billion, equal to roughly 2/3 of the state’s personal income.³ Consider these and other statistics:

<table>
<thead>
<tr>
<th>2016 TOTAL LONG-TERM OBLIGATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STATE DEBT</strong></td>
</tr>
<tr>
<td>General obligation bonds</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Illinois</td>
</tr>
<tr>
<td>National average</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>PENSION LIABILITY</strong></td>
</tr>
<tr>
<td>Unfunded pension liability</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Illinois</td>
</tr>
<tr>
<td>National average</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>OTHER POSTEMPLOYMENT BENEFITS (OPEB)</strong></td>
</tr>
<tr>
<td>Total unfunded OPEB</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Illinois</td>
</tr>
<tr>
<td>National average</td>
</tr>
</tbody>
</table>


The gap between the state’s official estimate of the unfunded pension liability ($131 billion) and that of Norcross and Gonzalez ($446) is immense. It should be underscored that these estimates are driven by a variety of important assumptions (e.g., the rate of return on future investments, the average age at which public employees retire, the average post-retirement lifespan of public-sector employees, etc.) and that there can be such a wide gap between these estimates gives some sense of the uncertainty (or riskiness) of such estimates. The “true”

² Illinois’ poor fiscal condition is not shared by most of its neighboring states. Indiana, Iowa, Missouri and Wisconsin all rank somewhere between the 15th and 29th, as the most fiscally solvent states. Only Kentucky, which is ranked 46th, displays a similar level of fiscal imbalance to Illinois.

³ To compute the market value of the pension liability, the authors use the risk-free (i.e., 15-year Treasury) rate. This rate is significantly lower than the rate (≈6.75–7.25%) used by the state to determine its unfunded liabilities, estimated to be approximately $130 billion. This paper will subsequently touch upon these (and other) differing assumptions.
liability likely falls between these two numbers (note: the simple average of the two estimates (approximately $290 billion) is more than twice the official estimate).

No matter how one squares the circle on these estimates, these unfunded pension liabilities\textsuperscript{4} have an adverse impact on property values, harming those values in several ways:

1) The estimated present value of future increases in property taxes\textsuperscript{5} represents a reduction in property values.

2) The uncertainty revolving around how these unfunded pension liabilities are to be ultimately resolved also represents a further reduction in property values.

3) Politicians are forced to walk a financial tight rope, trying to balance raising taxes (of all sorts) against a reduction in services (e.g., infrastructure, schooling, policing, etc.); this reduction in services represents yet another reduction in property values.

One perspective on these harmful impacts is given by ten-year home appreciation rates for selected metropolitan areas:

\textsuperscript{4} For simplicity (and less otherwise noted), this report uses: \textit{a}) the terms “the State or Illinois” to encompass to the City of Chicago, Cook County and/or the State of Illinois, and \textit{b}) the term “pension liabilities” to refer to also include other post-employment benefits (e.g., medical and dental coverage).

\textsuperscript{5} At some point, the unfunded liabilities must be paid and there is likely to be a significant increase in property (and other) taxes. See §V.
Over the last ten years, the Chicago area has seen the lowest home appreciation rate (essentially, tied with New York at 1.6% per annum) of any major metropolitan area in the country. Moreover, that appreciation rate failed to keep pace with the rate of inflation, such that homeowners experienced a real (i.e., inflation-adjusted) decline in home values.

The fiscal problems of the city, county and state are expected to worsen, as the gap between the pension plans’ assets and the estimated present value of future benefit payments is

---

6 In today’s hyper-politically charged environment, I have purposefully refrained from referring to these problems as a “crisis,” which Merriam Webster defines as “an unstable or crucial time or state of affairs in which a decisive change is impending – especially: one with the distinct possibility of a highly undesirable outcome.” (Indeed, Bruno, Kass and Merrimen (2019) advocate for avoiding the term “crisis.”) Semantics aside, these sorts of looming fiscal problems can easily develop into a full-blown crisis. In some instances, the transition from problem to crisis proceeds slowly and, in other instances, the transition proceeds quite rapidly.

The former is well exemplified by the bankruptcy filing of Detroit (once, America’s fifth-largest city), which was, by some accounts, “a slow-moving train wreck” taking place over ≈40-50 years. While Detroit’s problems were vast, some of its fiscal parallels to Chicago – including massively underfunded pension plans (which became a contentious item in Detroit’s court-directed bankruptcy reorganization) – are alarming (e.g., see: Romano (2019)).
expected to widen considerably over the coming decades. Moreover, it is challenging to raise taxes in an environment where Illinois’ overall taxes are the third-highest in the country (and, specifically, its property taxes are the second-highest in the country and its sales taxes are the seventh-highest in the country). Consequently, difficult choices must be made if the city, county and state are to work their way out of their current financial dilemmas gradually (i.e., there is no “magic bullet” or near-instantaneous cure). And the longer the day of reckoning is deferred, the more painful become the solutions. Without a comprehensive plan to arrest these runaway pension liabilities, the economic engine that is the Chicago metropolitan area will slowly falter; as it does, the movement of employers, households and investment capital looking to relocate to areas outside the state will accelerate. These sources of consumption and investment will seek to relocate to other metropolitan areas offering more-favorable ratios of government-provided services to the costs of providing those services – subject to other important factors: climate, topography, cultural attractions, etc.

Now that the Democrats control the governorship as well as both of Illinois’ legislative bodies, it would seem an appropriate time to consider a “grand bargain.” And while a number of proposals have been floated, few seem to get to the essence of the matter: political leaders’ unwillingness to fully fund the defined-benefit pension plans of its public-sector employees has led to catastrophic fiscal conditions. So, I propose three bold items:

1. All new public-sector employees are to be enrolled in defined-contribution pension plans (resulting in the gradual phase-out of the current defined-benefit system).

2. All new sources of revenue (e.g., the further legalization of casino gaming, sports betting and/or marijuana, a graduated income tax, an income tax on retirement benefits, etc.) are to be dedicated to the pay-down of unfunded pension benefits. The same is to be said of any cost-cutting mechanism (e.g., the consolidation of the state’s

The latter is well exemplified by the global financial crisis of 2007-08; for which, the timing was fairly swift: from the federal bailout out of Bear Stearns’ money-market account (in the spring of 2007) to the decision not to bailout Lehman Brothers (in the fall of 2007) to the ensuing global financial meltdown (in late 2007/early 2008). Here too the some of the parallels (involving too much indebtedness in the financial system) to Chicago are alarming.

The point is that the transition from problem to crisis is difficult to predict; however, no matter how you frame the current fiscal environment, doing little/nothing to correct the current (and unsustainable) fiscal trajectory is surely a calamity.

7 Approximately 70% of the state’s household income is generated by Chicago metropolitan area (encompassing, for purposes of this paper, six counties: Cook, DuPage, Lake, Kane, McHenry and Will – from a total of 102 counties), which contains 65% of the state’s population. (Cook County alone generates about 41% of the income and contains about 40% of the population.) As such, this paper is guilty of taking a Chicago area-centric focus, at the risk of occasionally ignoring the financial contributions of the balance of the state.
huge number of local governmental entities) and/or the monetization of the state’s assets (e.g., the sale of the Illinois Tollway Authority, Illinois Lottery, etc.).

3. The first two items are likely to prove to be fiscally insufficient; therefore, a constitutional amendment is needed to moderately reduce the future benefits (of the current defined-benefit pension plans) of the existing public-sector employees (and their beneficiaries).

The balance of this paper examines these propositions in greater detail.

II. **Killing the Golden Goose**

II. A. The Chicago Metropolitan Area as an Economic Engine

Inhabited by approximately 9.5 million people across fourteen counties, the Chicago metropolitan statistical area (MSA) is one of the most dynamic and successful regions in the United States. Chicago’s thriving economic base, skilled labor pool, and variety of cultural activities make it one of the most influential cities in the world. The Chicago MSA is home to more than 400 major corporate headquarters including 35 *Fortune* 500 companies, and 13 *Financial Times* Global 500 companies. With approximately 4.7 million employees and a (2018) gross regional product exceeding $679 billion, Chicago’s economy is larger than that of most countries, ranking 21st globally.

Consider some of these statistics:

- 8th most economically powerful city in the world (A.T. Kearney),
- Ranked 1st in the Americas in foreign investment and 7th globally (FDI Intelligence),
- Over 4,000 foreign-owned establishments, employing more than 233,000 people,
- 8th in Global Cities Index (A.T. Kearney),
- 83 consulates, 40 international chambers of commerce and 90 foreign-based trade organizations, and
- #1 City for Foreign Direct Investment and “City of the Future” (*Foreign Direct Investment*).

And for the third year in a row, *Conde Nast* (2019) ranked Chicago as the best big-city to visit in the country (see Marino (2019)). But more than words and statistics, pictures of Chicago’s dynamic growth often better convey the message – as one of many such
possibilities, consider these “then” and “now” photographs of Chicago’s Lakeshore East neighborhood:


Source: Okrent Kisiel Associates, Inc.

---

8 An area bounded by the Chicago River to the north, Lake Shore Drive to the east, Randolph Street to the south and Michigan Avenue to the west.
II. B. Slowly Killing the Golden Goose: Taxes & Regulations

However the gears of this economic engine have been slowed by the massive increases in state and local spending, which have led to difficult fiscal choices. Faced with such dilemmas, a significant portion of the citizenry is highly resistant to spending cuts (typically, those services from which they benefit) and a significant portion wants to raise taxes (typically, on those “richer” than themselves). There has been little room for meaningful compromise. And as a consequence, population decline and economic stagnation occurs (if not in absolute terms, then at least in relative terms). Once-vibrant cities such as Baltimore, Detroit, Milwaukee, Philadelphia, etc. have witnessed the sort of population decline and economic stagnation that many fear for Chicago. Consider the population decline of certain cities over the last sixty years:


Despite a growing United States economy and many growing Midwest cities (Renn (2019), the current view for Chicago seems unfavorable. Consider a more recent look at the fifty largest cities, which identifies the top five fastest-growing cities and the bottom five slowest-growing cities:
The Five Fastest and Slowest Growing Major Cities in the U.S., for the Year Ended June, 2018

While the graphic above examines city-level changes, the story is much the same at the state level. As reported by Reyes and O’Connell (2019), more people are moving out of Illinois while fewer people are moving in. Historically, the gap between those leaving the state and those arriving from other states was offset by births and international migration; however, these numbers have also decreased recently. The most recent statistics (2017) indicate that Illinois ranks 49th out of the nation’s 50 states on net-migration loss (only Alaska was worse). And while Illinois ranked 21st on the rate of domestic out-migration, it ranked 47th with regard to the rate of in-migration. When these in- and out-migration patterns are combined with an aging population, declining birth rates and stagnating international migration, the result is decreased population. From 1990 to 2000, 68 of Illinois’ 102 counties gained population; while so far this decade, only nine counties (including Kane, Will and DuPage in the Chicago area), have gained in population.

The graph below highlights both in-migration (i.e., from various states to Illinois) and out-migration (i.e., from Illinois to various states), for the period 2016 to 2017. While the Midwest supplies the largest number of people moving to Illinois, it is also the largest drain of people leaving Illinois for other states (with Indiana and Wisconsin dominating).

---

9 While Indiana, Iowa, Michigan, Missouri and Wisconsin have also had a difficult time both retaining existing residents and attracting new ones, those states have all experienced population growth (albeit, those numbers are fairly small) for most of this decade.
Without the growth\textsuperscript{10} that is often the elixir that cures fiscal problems, the current state and local spending habits – which, in turn, drive calls for new and higher taxes – risk slowly killing the state’s golden goose (\textit{i.e.}, economic vibrancy and prosperity of the Chicago area).

In this regard, let’s also consider the state’s growth in the context of the U.S. economy. Here, the trends are more alarming. As pointed out by Laffer and O’Keefe (2019), the metropolitan area and the state have been on a long, slow (relative) decline; consider that Illinois’ share of the nation’s personal income has been fallen markedly for at least 70 years: (against a backdrop of the imposition of new and/or higher state and local taxes\textsuperscript{11}):

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{illinois-income-share.png}
\caption{Illinois Personal Income as a Share of Total U.S. Personal Income (annual, 1950-2018)}
\end{figure}


The trajectory is clearly discouraging: Over nearly 70 years, Illinois’ share of the nation’s personal income has approximately declined from 7\% to 4\% – roughly a 40\% decline. Other

\textsuperscript{10} We should be quick to point out that the aggregate population statistics can mask important differences between who is moving to and who is moving from a certain area. Fiscal policies that disproportionately encourage the wealthy to leave often have adverse impacts on the remaining citizens.

\textsuperscript{11} Note: “PIT” refers to personal income tax, while “CIT” to corporate income tax.
statistics tell a similar story. Consider these (also from Laffer and O’Keefe (2019)): “Since 1976, amongst all U.S. states, Illinois has the 4th lowest growth in employment, the 10th worst growth in gross state product (GSP), the 5th worst rate of personal income growth and the 6th lowest increase in its labor force.”

As the fiscal woes of the city, county and state worsen, there seems to be an unending series of revenue grabs (i.e., new and higher taxes). Over the same nearly 70 years, the state and local tax revenues as a share of the state’s personal income has approximately climbed from 6.5% to 11.5% (i.e., it has not quite doubled):

![Illinois State and Local Tax Revenues as a Share of Personal Income](image)


When economists and policy makers consider raising taxes, one of the considerations is the likely impact on consumption and investment decisions of the citizenry. In other words, people respond to economic incentives. (Recall the old adage: “If you want less of
something, tax it; if you want more of something, subsidize it.”) This is one of the reasons why a so-called “head tax” has the effect of driving businesses from a given municipality.\textsuperscript{12}

Putting aside various service fees (e.g., “head” taxes, drivers’ licenses, vehicle taxes, \textit{etc.}, which tend to be a \textit{de minimus} portion of total revenues), state and local taxes are essentially derived from three sources: (corporate and personal) income taxes (which are levied on investment and labor), sales taxes (which are levied on consumption), and property taxes (levied on real-estate ownership). Let’s consider each in turn.

\textbf{II. B.1. State Income Taxes}

From the perspective of high-income taxpayers, one of the few taxes where Illinois fares well is the state’s “flat” income-tax rate of 4.95\%. When this top marginal tax rate is compared against those rates\textsuperscript{13} of other states, Illinois’ income-tax rate ranks as the 13\textsuperscript{th} lowest in the country.

\textsuperscript{12} Chicago had a head tax from 1973 to 2012; it was ultimately phased out by Mayor Rahm Emanuel in 2014, who had earlier described the tax as a “job killer.” See: Lentino (2017).

\textsuperscript{13} This is a crude comparison, as it ignores state-by-state differences in tax brackets, other marginal tax rates, deductions, credits, \textit{etc.}
When looking at income taxes at the state level, consideration should be given to the share of state revenues attributable to income taxes and to the concentration of those taxes amongst the state’s citizens. In comparison to some of its peer states, Illinois currently relies less on the income tax as a source of state revenue and that tax is less concentrated among the state’s wealthiest citizens.
This lesser reliance on the state income tax behooves Illinois in several respects: (a) the income of the very rich tends to be more volatile than those in lower income brackets (and, as such, state revenues are more volatile\(^{14}\)), (b) the rich have greater mobility (when the burden of higher taxes outweighs the perceived benefits of living in a given state, they move

\(^{14}\) As one perspective on the volatility of state income taxes, consider that at the peak of the most recent recession, U.S. state tax revenues fell 17 percent below their level one year earlier, while personal income taxes were 27 percent lower – see Davis, Singh and Wintner (2019).
more easily than most) and $ once a progressive income tax system is in place, it is typically quite difficult to replace it with a flat tax system. However, these benefits accruing to Illinois may be reversed if Governor Pritzker’s proposal to replace the current tax system with a graduated income tax is enacted\textsuperscript{15} – increasing the state’s overall tax to the 48\textsuperscript{th} most costly (see Walczak (2019)). Of course, another potential problem (discouraging further investment) is that once a graduated tax system is in place there are likely to be creeping tax rates over time from future politicians.

II. B.2. State & Local Sales Taxes

With regard to the sales taxes, Illinois’ relative position is much less favorable; Illinois’ (combined state and local) sales-tax rate is seventh highest in the country:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{sales-taxes-map}
\caption{Combined State & Average Local Sales Tax Rates, January 1 2019}
\end{figure}


\textsuperscript{15} For an overview of his proposal (which ultimately requires an amendment to the Illinois state constitution), see Fuller, Puzella and Bayan (2019) – among others.
Chicago (along with Long Beach and Glendale, California) imposes the highest sale-tax rate in the country, with a combined (city, county and state) rate of 10.25%. Not surprisingly, high sales-tax rates encourage cross-border shopping (both between the city and its suburbs and between the neighboring states (e.g., all of the states surrounding Illinois have substantially lower sales-tax rates)), as well as black-market sales; all of which reduces the tax base.

II. B.3. Property Taxes

According to Divounguy, Chattopadhyay and Hill (2019), Illinois’ property owners witnessed an increase in property tax rates of 38% from the pre-housing bubble (2002-04) to post-recession period (2013-15), while the rest of the U.S. experienced an average increase of 8% (i.e., Illinois’ property taxes grew four-times faster than the national average over this period).


16 See: Walezak and Pino (2019), who acknowledge the lack of uniformity in the interstate definitions of what is taxable and what is not (e.g., groceries are exempt in some jurisdictions, partially taxed in some others and fully taxed in yet others).
Illinois went from 10th in the ranking of property taxes by state in 2002 to second in 2015; only New Jersey’s are higher:

According to Kiernan (2019), the top ten states with highest property tax rates\(^\text{17}\) were:

---
\(^{17}\) Given Cook County’s classification system (see: §II.B.4), commercial properties in Cook County pay the highest tax rate in the country. Moreover, if one is concerned with the equitable apportionment of property taxes, is it really “fair” to have a single office building pay, say, $10–20 million in annual property taxes? It sends no children to school (generally, over half of the tax property taxes collected are paid to the local school district(s)), removes its own trash, shovels snow from its own sidewalks and parking facilities, often provides its own (albeit, limited) security, etc. While this is not meant to suggest that commercial properties should pay zero in property taxes, it is meant to suggest that something far less than $10-20 million per year might more fairly represents the burden placed on municipal services by your typical high-end office building. And by way of context, each $10 million in property taxes impairs the building’s value, at today’s pricing, by approximately $200 million.
As indicated by Kaeding (2019), the 2017 revision to the U.S. Tax Code, informally known as the Tax Cuts and Jobs Act (TCJA), generally reduced the federal income-tax liability of most Americans. However, the Act (starting with the 2018 tax year) also limited the annual deduction for state and local income taxes paid to $10,000 (also known as the SALT limitation). Six states – California, New York, New Jersey, Illinois, Texas, and Pennsylvania – claimed more than half of the federal deductions for paid state and local taxes. As such, the limitation most affects those (federal) high-income taxpayers, who itemize their deductions and live in high-tax jurisdictions with high home values. However and as the following map illustrates, the impact of the SALT limitation is not monolithic within a state:

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Effective Real-Estate Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>New Jersey</td>
<td>2.44%</td>
</tr>
<tr>
<td>49</td>
<td>Illinois</td>
<td>2.31%</td>
</tr>
<tr>
<td>48</td>
<td>New Hampshire</td>
<td>2.20%</td>
</tr>
<tr>
<td>47</td>
<td>Connecticut</td>
<td>2.07%</td>
</tr>
<tr>
<td>46</td>
<td>Wisconsin</td>
<td>1.94%</td>
</tr>
<tr>
<td>45</td>
<td>Texas</td>
<td>1.83%</td>
</tr>
<tr>
<td>44</td>
<td>Vermont</td>
<td>1.83%</td>
</tr>
<tr>
<td>43</td>
<td>Nebraska</td>
<td>1.80%</td>
</tr>
<tr>
<td>42</td>
<td>New York</td>
<td>1.68%</td>
</tr>
<tr>
<td>41</td>
<td>Rhode Island</td>
<td>1.66%</td>
</tr>
</tbody>
</table>

Clearly, those portions of the map shaded in dark blue – which includes Chicago and its collar counties – are expected to be most severely hurt by limiting the SALT deduction (to $10,000 per annum) and, in turn, are expected to have the most adverse effects on home values.\footnote{These adverse impacts may be mitigated by: \textit{a}) the limitation is scheduled to expire on December 31, 2025 (when most of the individual tax changes in the TCJA are also set to expire), and \textit{b}) some taxpayers may simply opt for the newly expanded standard deduction, which was doubled in the TCJA (rather than itemizing their deductions, with the capped SALT limitation).}

According to the Klemens (2019), Illinois’ property taxes were 37.5\% of total state and local tax collections. The national average was 31.5\%. Only ten states were higher than Illinois; six

\begin{figure}
\centering
\includegraphics[width=\textwidth]{map}
\caption{Which Places Benefit Most from State and Local Tax Deductions?}
\end{figure}
of those states either charge no income tax (Alaska, New Hampshire, Texas and Wyoming) or no sales tax (New Hampshire and Montana).

| Chart 2. Property Taxes as a Percentage of Total State and Local Tax Revenue, 2016* |
|----------------------------------|---------------|
| US Average                       | 31.5          |
| Illinois                         | 37.5          |
| Illinois Estimated**             | 34.1          |
| Indiana                          | 25.0          |
| Iowa                             | 32.4          |
| Missouri                         | 26.4          |
| Wisconsin                        | 34.1          |
| California                       | 25.7          |
| New York                         | 31.1          |
| Pennsylvania                     | 29.2          |
| Texas                            | 43.8          |

Source: Taxes and Tax Measures, Tax Foundation, 2019
* 2016 is the most recent year for which federal census data is available for all states.
** Illinois Estimated recalculates the percentage assuming the 2017 tax increases had been in effect.


The state’s greater-than-average reliance on property taxes is a double-edged sword: On the positive side, property taxes are much less volatile than income taxes, sales taxes and usage fees; this volatility was fully displayed during and immediately after the 2007-08 global financial crisis and led to crippling budget decisions by many state and local governmental entities. On the negative side, the reliance on property taxes exacerbates the differences between wealthy and poor communities: more dollars available to spend on infrastructure, schooling, policing, etc. tends to drive up property values and, conversely, fewer dollars available to spend on such attributes tends to drive down property values. In other words, the rich get richer, while the poor get poorer.
An Aside: Cook County’s Classification System

Cook County is the only county in the state (and one of the few counties in the country) that utilizes a “classification” system. More specifically, commercial (i.e., industrial, office and retail) properties in Cook County are taxed at a rate equal to 2.5 times that of the tax rate on owner-occupied housing.\(^{19}\) Naturally, the weight of these higher property taxes (given the classification system), increasing property taxes, the uncertainty of future tax increases and the crowding out of governmental services has adversely impacted the market for Chicago office and retail properties, in particular.\(^{20}\) Consider three perspectives:

First, let’s consider property taxes as a proportion of total (or gross) rents for high-quality office and retail properties in Chicago, as compared to other major markets in the United States:

<p>| Property Taxes as a Percentage of Gross Rents for Class A Office Properties in Selected U.S. Cities |
|--------------------------------------------------|--------------------------------------------------|</p>
<table>
<thead>
<tr>
<th>Market</th>
<th>Property Taxes</th>
<th>Gross Rents</th>
<th>Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chicago</td>
<td>$8.81</td>
<td>$35.17</td>
<td>25.0%</td>
</tr>
<tr>
<td>2. Minneapolis</td>
<td>$4.90</td>
<td>$28.37</td>
<td>17.3%</td>
</tr>
<tr>
<td>3. New York</td>
<td>$9.40</td>
<td>$58.27</td>
<td>15.9%</td>
</tr>
<tr>
<td>4. Washington</td>
<td>$7.48</td>
<td>$48.25</td>
<td>15.5%</td>
</tr>
<tr>
<td>5. Denver</td>
<td>$5.29</td>
<td>$34.27</td>
<td>15.4%</td>
</tr>
<tr>
<td>6. Houston</td>
<td>$5.46</td>
<td>$37.68</td>
<td>14.3%</td>
</tr>
<tr>
<td>7. Miami</td>
<td>$5.25</td>
<td>$44.56</td>
<td>11.8%</td>
</tr>
<tr>
<td>8. Dallas-Fort Worth</td>
<td>$3.48</td>
<td>$29.55</td>
<td>11.6%</td>
</tr>
<tr>
<td>9. Phoenix</td>
<td>$1.62</td>
<td>$18.55</td>
<td>11.5%</td>
</tr>
<tr>
<td>10. Tampa</td>
<td>$1.35</td>
<td>$13.71</td>
<td>9.8%</td>
</tr>
<tr>
<td>11. Atlanta</td>
<td>$2.91</td>
<td>$32.48</td>
<td>9.0%</td>
</tr>
<tr>
<td>12. Portland</td>
<td>$3.20</td>
<td>$36.34</td>
<td>8.8%</td>
</tr>
<tr>
<td>13. San Jose</td>
<td>$3.95</td>
<td>$47.05</td>
<td>8.4%</td>
</tr>
<tr>
<td>14. Pittsburgh</td>
<td>$2.40</td>
<td>$28.85</td>
<td>8.3%</td>
</tr>
<tr>
<td>15. Los Angeles</td>
<td>$3.49</td>
<td>$42.72</td>
<td>8.2%</td>
</tr>
<tr>
<td>16. Orange County</td>
<td>$2.86</td>
<td>$36.32</td>
<td>7.9%</td>
</tr>
<tr>
<td>17. Seattle</td>
<td>$3.51</td>
<td>$46.02</td>
<td>7.6%</td>
</tr>
<tr>
<td>18. Philadelphia</td>
<td>$2.23</td>
<td>$31.71</td>
<td>7.1%</td>
</tr>
<tr>
<td>19. San Francisco</td>
<td>$4.23</td>
<td>$62.52</td>
<td>6.8%</td>
</tr>
<tr>
<td>20. Charlotte</td>
<td>$2.08</td>
<td>$33.45</td>
<td>6.2%</td>
</tr>
<tr>
<td>Average – Excluding Chicago</td>
<td>$4.15</td>
<td>$39.10</td>
<td>10.6%</td>
</tr>
</tbody>
</table>

<p>| Property Taxes as a Percentage of Gross Rents for Class A Retail Properties in Selected U.S. Cities |
|--------------------------------------------------|--------------------------------------------------|</p>
<table>
<thead>
<tr>
<th>Market</th>
<th>Property Taxes</th>
<th>Gross Rents</th>
<th>Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chicago</td>
<td>$8.81</td>
<td>$24.72</td>
<td>34.6%</td>
</tr>
<tr>
<td>2. Minneapolis</td>
<td>$4.90</td>
<td>$22.55</td>
<td>18.0%</td>
</tr>
<tr>
<td>3. New York</td>
<td>$9.40</td>
<td>$38.06</td>
<td>15.0%</td>
</tr>
<tr>
<td>4. Denver</td>
<td>$7.48</td>
<td>$27.82</td>
<td>14.0%</td>
</tr>
<tr>
<td>5. Houston</td>
<td>$5.29</td>
<td>$28.96</td>
<td>13.0%</td>
</tr>
<tr>
<td>6. Washington</td>
<td>$5.46</td>
<td>$37.69</td>
<td>13.0%</td>
</tr>
<tr>
<td>7. Dallas-Fort Worth</td>
<td>$5.25</td>
<td>$26.20</td>
<td>12.0%</td>
</tr>
<tr>
<td>8. Phoenix</td>
<td>$3.48</td>
<td>$29.99</td>
<td>11.0%</td>
</tr>
<tr>
<td>9. Miami</td>
<td>$3.62</td>
<td>$36.65</td>
<td>11.0%</td>
</tr>
<tr>
<td>10. Philadelphia</td>
<td>$3.95</td>
<td>$25.27</td>
<td>10.0%</td>
</tr>
<tr>
<td>11. Detroit</td>
<td>$3.20</td>
<td>$19.93</td>
<td>9.0%</td>
</tr>
<tr>
<td>12. Atlanta</td>
<td>$3.20</td>
<td>$26.02</td>
<td>8.0%</td>
</tr>
<tr>
<td>13. Los Angeles</td>
<td>$3.62</td>
<td>$38.62</td>
<td>8.0%</td>
</tr>
<tr>
<td>14. Orange County</td>
<td>$2.40</td>
<td>$31.96</td>
<td>8.0%</td>
</tr>
<tr>
<td>15. Seattle</td>
<td>$3.49</td>
<td>$34.48</td>
<td>8.0%</td>
</tr>
<tr>
<td>Average – Excluding Chicago</td>
<td>$4.57</td>
<td>$30.01</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

Sources: CoStar Group | Market Analytics and author’s calculations.

As is readily observable from the table above, Chicago’s property taxes as a percentage of total rent are the highest of any major market in the United States. In the office market, Chicago’s property taxes (per square foot) are more than double the average of the other major markets, while Chicago’s total rent is about 90% of the average of the other markets; consequently, Chicago’s property taxes as a percentage of rents approaches 2.5 times that of

\(^{19}\) Multi-family property tax rates fall somewhere in between.

\(^{20}\) The nature of the tenancy and of the operating leases for industrial properties makes them somewhat less susceptible to these adverse effects.
the other markets. In the Chicago retail market, the effects are similar but not quite as severe. Chicago’s extraordinary percentage of property taxes (relative to rents) is directly tied to the classification system; this system is dampening property values and increasing (gross) rents. To the extent that these high retail rents push retailers outside Chicago, which has one of the highest sales-tax rates in the country (see §II.B.2) and, as such, the city derives a good deal of its revenues from sales taxes (which are generated at retail facilities including hotels, bars, restaurants, etc.), these higher retail rents can be particularly damaging to the city’s finances.

Second, let’s consider the average sales price per square foot of Chicago office and retail buildings (indicated by the red lines below); in comparison to the national average (indicated by the green lines), Chicago prices are clearly falling (as indicated by the blue bars below):

While it is clear that national office and retail property values have rebounded nicely from the global financial crisis of 2007-08, the picture – much like the discussion of Chicago’s

21 A cautionary note about the retail property tax and rent data: CoStar has this data for space that is marketed (or leased) on a “full-service” (i.e., gross) basis. Since a majority of retail space is marketed (or leased) on a net basis, the data set for retail is much smaller (as percentage of total available space) than that for office. It is possible that retail data used here are unrepresentative of the population of retail leases in that market.

22 Net rents are largely a function of the real estate development costs. As a working assumption, development costs – with the exception of land values – are fairly constant across the country. Consequently, an increase in the building’s operating expenses (in this case, due to higher property taxes) causes rents to increase and/or land values to decrease.

23 This push can be particularly pronounced at the city’s border with neighboring municipalities and/or at Cook County’s border with neighboring counties.
home prices (see §III.A) – is far less flattering for Chicago’s office and retail properties (as evidenced by the increasing heights of the blue bars in the graph above).

Third, Chicago’s share of national office and retail building sales (indicated by the dashed red line below) has averaged approximately 5.5% and above 10%, respectively, for more than the last dozen years. More recently and as institutional investors take note of the fiscal and other headwinds facing the Chicago area (e.g., see: Gallun (2019a)), the sales activity has dropped measurably:

![Graph: Chicago Office Sales Volume as a Percentage of U.S. Volume, for the Period 2006 through the 1st Half of 2019](Image)

![Graph: Chicago Retail Sales Volume as a Percentage of U.S. Volume, for the Period 2004 Through 2019](Image)

Taken in combination (falling relative prices and slowing property sales), these factors do not portend well for future office and retail building valuations. In the City of Chicago, commercial properties pay over 36% of all property taxes collected; of which, office buildings pay nearly half. Consequently, these are trends that both homeowners and business owners should take heed; certainly, institutional real estate investors already have (e.g., see Putzier (2019)).

Beyond the first-order effects on real estate prices (and ultimately property-tax collections), the second-order effects (e.g., uncertainty about future tax increases leads to a slowdown in construction and other productive areas of the local economy (and the corresponding multiplier effects)) is another area where the broad cross section of taxpayers ought to be concerned.

---

II. B.5. Overall State & Local Taxes

With regard to overall state and local taxes\textsuperscript{25} expressed as a percentage of the state’s median household income, Illinois citizens rank as the 49\textsuperscript{th} most heavily taxed in the country (only Connecticut and New York are higher\textsuperscript{26}):

\begin{center}
\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
Rank & State \\
\hline
20 & Missouri \\
\hline
26 & Indiana \\
\hline
29 & Kentucky \\
\hline
32 & Iowa \\
\hline
38 & Wisconsin \\
\hline
49 & Illinois \\
\hline
\end{tabular}
\end{table}
\end{center}


II. C. For Illinois: Taxes – Spending = Deficit

So, Illinois’ fiscal problems do not stem from under-taxation; instead, those problems stem from excessive spending. Over the last decade or so, Illinois ranks as the second-worst state in terms of spending relative to revenues (\textit{i.e.}, taxes):

\textsuperscript{25} For purposes of this calculation, overall taxes included the state’s income, sales, property and vehicle taxes.

\textsuperscript{26} This ranking treats Washington, D.C. as a separate jurisdiction; therefore, there are 51 jurisdictions.
This deficit spending (in conjunction with high levels of indebtedness) has led to serious downgrades in the perceived credit worthiness of the state’s financial obligations. As examples of the ongoing additional cost (*i.e.*, the additional interest-expense burden) to Chicago, Cook County and Illinois taxpayers of the poor credit ratings of these jurisdictions, consider three major bond offerings issued by each of these entities since 2018:

- On March 26, 2019, the City of Chicago sold $727 million of general-obligation bonds, which were rated BBB+/BBB- and maturing in 2027-2049 (with a 2029 call option at par). At that time, the 5.5% coupons of the 2035 maturities were priced at 3.96% or 165 basis points (*i.e.*, 1.65%) over the Municipal Market Data (“MMD”) AAA yield (*e.g.*, of entities such as Delaware, Virginia, Utah, *etc.*) as determined by Refinitiv (formerly, Thomson Reuters). In other words, the city of Chicago will pay approximately $12.0 million per year in excess in interest expense, due to its poor credit rating.

---

27 Source: Private conversation with Gregory Saulnier, Municipal Bond Analyst, Refinitiv (October 10, 2019).
On January 18, 2018, Cook County sold $101 million of general-obligation bonds, which were rated A2/AA- and maturing in 2018-2035 (with a 2026 call option at par). At that time, the 5.0% coupons of the 2034 maturities were priced at 3.35% or 87 basis points over the MMD. In other words, Cook County will pay approximately $0.9 million per year in excess in interest expense, due to its poor credit rating.

On August 22, 2018, the State of Illinois sold $968 million of general-obligation bonds, which were rated Baa3/BBB- and maturing in 2020-2033 (with a 2028 call option at par). At that time, the 5.0% coupons of the 2033 maturities were priced at 4.34% or 163 basis points over the MMD. In other words, the state of Illinois will pay approximately $15.8 million per year in excess in interest expense, due to its poor credit rating.

For these three bond offerings, the city, county and state will be spending nearly $30 million per year in excess interest expense, due to their poor credit ratings. More broadly, Boyer (2019) estimates that the state pays an additional $157 million in annual interest expense due to its unfunded pension liability.

II. D. Illinois’ Public-Sector Wages & Pension Benefits

As part of understanding Illinois’ fiscal problems, let’s separately examine public-sector wages and pension benefits and their combined impact vis-à-vis revenues (i.e., taxes).

II. D.1. Illinois’ Public-Sector Wages

An employee’s wages should be viewed in the context of his/her total compensation (e.g., salary, retirement and health benefits, vacation and personal time, growth opportunities, etc.) and in relationship to the rigors of the job that he/she performs (e.g., the amount and quality of the work, the pressure involved with timely delivery of that work, etc.). Unfortunately, many of these characteristics – particularly with respect to the rigors of the job – are unobservable.

In the private sector, it is generally assumed that the employee and employer come to a reasonable compromise on the tradeoff between the employee’s total compensation and the total productivity that he/she provides to the organization (i.e., the employee’s rent-maximizing wage is balanced with the profit-maximizing behavior of the firm); in the long run, the self-correcting mechanisms of the private marketplace generally arrive at or near “fair market value.” In the public sector however, the self-correcting mechanisms of the marketplace are generally much duller and protracted; moreover, these mechanisms are often muted by the high levels of (collectively bargained) unionization and the political pandering of certain politicians. Consequently, there is more uncertainty about the whether employee and employer have arrived at something approaching fair market value.
With these caveats in mind, the table below highlights the average wage rate – adjusted for the cost of living – for public-sector workers for selected states, as well as the national average. Not only are Illinois’ state workers the highest paid in the country, they are paid approximately 20% more than the national average:

**Illinois state workers are the highest-paid in the country**

Annual wages per state employee, nominal and indexed to cost of living, 2014

<table>
<thead>
<tr>
<th>State</th>
<th>Average state-worker annual wage</th>
<th>Cost-of-living-adjustment index, 2013</th>
<th>Annual wage adjusted for cost of living</th>
<th>National rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>$59,679</td>
<td>101.0</td>
<td>$59,088</td>
<td>1</td>
</tr>
<tr>
<td>California</td>
<td>$65,654</td>
<td>114.5</td>
<td>$58,463</td>
<td>2</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$65,292</td>
<td>112.3</td>
<td>$57,023</td>
<td>3</td>
</tr>
<tr>
<td>Alaska</td>
<td>$59,104</td>
<td>106.0</td>
<td>$55,758</td>
<td>4</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$60,220</td>
<td>108.5</td>
<td>$55,502</td>
<td>5</td>
</tr>
<tr>
<td>Iowa</td>
<td>$48,974</td>
<td>90.3</td>
<td>$54,235</td>
<td>6</td>
</tr>
<tr>
<td>National average</td>
<td>$49,224</td>
<td>100.0</td>
<td>$49,224</td>
<td>--</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>$42,445</td>
<td>92.9</td>
<td>$45,689</td>
<td>28</td>
</tr>
<tr>
<td>Kentucky</td>
<td>$40,309</td>
<td>89.1</td>
<td>$45,240</td>
<td>34</td>
</tr>
<tr>
<td>Missouri</td>
<td>$37,820</td>
<td>89.2</td>
<td>$42,400</td>
<td>42</td>
</tr>
<tr>
<td>Indiana</td>
<td>$37,981</td>
<td>91.4</td>
<td>$41,555</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Economic Analysis

II. D.2. Illinois’ Public-Sector Pension Benefits

As noted earlier, the other significant dimension of public-sector employment compensation is that of retirement benefits. Here too, Illinois provides some of the most lavish pension benefits in the country. By way of comparison to other states’ pension benefits (after having adjusted for the cost of living in each state) awarded to its public-sector employees (using 2014-2015 data – the most-recent available), Illinois ranks as having the second highest pension payout per capita in the country (and nearly 50% higher than the 50-state average):

---

28 For purposes of simplicity, this discussion will largely ignore post-retirement medical, dental and sundry other benefits – typically described as “other post-employment benefits” (OPEB) in the financial reporting of state and local jurisdictions.
We can also examine the average payout per pension beneficiary of individual plans in Illinois and compare them to other states’ public plans through the country. The Judges’ Retirement System of Illinois has the highest per capita average payout\(^{29}\) of any state pension plan in the country; moreover, five Illinois plans are among the highest average payout per beneficiary of the top 60 state-offered public-sector pension plans in the U.S.:

\(^{29}\) Because of the nature of the pension-retirement formula, those public-sector employees with the highest wages (likely to include judges) during their working years tend to have the largest benefit packages upon their retirement.
II. D.3. Illinois’ Pension Benefits \textit{v.} Revenues

Not surprisingly, the state’s highly paid workers (both via wages and retirement benefits) contribute to the state’s fiscal problems. Viewed in a slightly different context, the growth in pension-plan benefits has far outpaced the growth in statewide economic productivity (which acts as a proxy for the growth in statewide revenues \textit{(i.e., tax collections)})). Over the last decade or so, Illinois ranks as the second-worst state in terms of spending relative to revenues \textit{(i.e., taxes)}:

Sources: \textit{Burypensions Blog} and \textit{World Population Review}.
In the long run, this pattern is economically unsustainable; at some point, pension benefits consume more than all of the state’s revenues (i.e., taxes). Consider this simple example: Today, the state’s annual pension benefits to public-sector employees (i.e., the “normal cost”) consume about 19.3% of the state’s revenues; assuming that those benefits continue to grow at nearly 9% per annum while the state’s revenues grow by nearly 4% per annum (as indicated in the graph above), then those benefits will consume more than 100% of the state’s revenues within 35 years! But of course, the entire system will implode well before then. Consider that, as services decline (due to the “crowding out” attributable to pension-fund costs) and/or further tax increases are imposed, wealthy households and corporations will have already left the state.

The spending problems are equally problematic at the city and county levels. For example, Moody’s (2019) examined the adjusted net pension liability of the country’s 50 largest city and county governmental entities, using 2017 data (the last year for which complete data are available). Both the city of Chicago and Cook County ranked worst among their respective peer groups. For simplicity’s sake, let’s focus on Chicago; by Moody’s estimate, the city’s annual pension obligations exceed 55% of the city’s annual revenues – the worst ratio of any large city in the country:

Mathematically: Given that today’s annual pension benefit equals 19.3% of the state’s revenues, then: 19.3*(1+.088)^N = 100*(1+.038)^N, where N = the numbers of years from today. N ≈ 34.5 years represents this crossover point – at which point, the annual pension benefit consumes 100% of the state’s revenues.

Like other financial advisors, Moody’s is leery of the actuarially assumed discount rates (the median of which was 7.5%) used by state and local officials to determine the present value of the (estimated) future pension benefits and other post-employment benefits by these local governmental entities when preparing their annual financial reports; instead, Moody’s used a more conservative discount rate (the median of which was 3.6%) to determine the present value of estimated future benefits. It is their belief that the lower rate of return is more in keeping with present capital-market conditions, for prudently invested financial assets.

Included in these financial obligations is Moody’s estimate of the “pension tread water gap.” Like many of its fiscally struggling peers, Chicago’s annual contribution to its employees’ pension plans is less than the actuarially estimated contribution to keep the fund’s net pension liability unchanged (i.e., to merely “tread water”). The “gap” is the difference between employers’ actual annual contribution and the amount necessary to cover the present value of the projected retirement benefits earned by plan participants in that year (also known as the “service cost”) – assuming all of the actuarial assumptions are realized – plus the annual interest on the unfunded pension liability.
Adjusted Net Pension Liabilities as a Percentage of City’s Annual Revenues


According to Moody’s calculations, the next three-worst cities have fiscal obligations representing slightly more than 35% of those cities revenues. This is a significant difference from Chicago’s current plight (e.g., these next-worst cities are spending approximately 65% of what Chicago is spending, as a percentage of revenues, on its debt and pension-fund obligations) and has substantial, adverse ramifications for the city of Chicago’s future. From such a perspective, it is clear to see that these pension-related liabilities are crowding out other important expenditures on city services (e.g. infrastructure, education, policing, etc.).

II. E. Crowding Out Services

At the state level, the most-recent state budget effectively summarizes the crowding out (due to the increase pension-fund contributions) of state-provided services over nearly the last twenty years:

---

33 If one prefers to ignore the “tread water gap,” Chicago’s the city’s annual pension obligations exceed 35% of the city’s annual revenues, while next three-worst cities have fiscal obligations representing approximately 30% of those cities revenues.
As one example of this crowding out, consider the shocking proportion (both in terms of levels and increases) of the state's funding of public (K-12) schools dedicated to pension payments for current and retired teachers (and their beneficiaries):
An Example of Crowding Out: Teacher Pensions vs. Classroom Spending

\(K\)-12 classroom spending vs. spending on teacher pension costs in real terms (in millions)


Shuster (2019b) indicates that, in the current school year, 36% of the money that the state allocates to education will be diverted away from current teachers and students to meet required pension payments. Consider that the percentage was only 22% ten years ago and was just 12% twenty years ago. Real (i.e., inflation-adjusted) educational spending on current teachers and educational programs has only increased at the rate of approximately 0.9% per annum over the last twenty years, while real spending on teachers’ benefit plans has increased at the rate of approximately 8.6% per annum over the same time period. This crowding out has important consequences: these growing pension costs divert funds needed to operate local schools and, in turn, contributes to possible cuts in educational programs, increased class sizes, teachers’ layoffs, etc. None of these are favorable outcomes, particularly in an environment moving ever-so-steadily towards more of a “knowledge-based” economy, which tend to offer the most-lucrative employment opportunities.

Without a fix on spending (including, of course, pension liabilities), the current fiscal problems create an investment climate (not limited to real estate) that accentuates

---

34 This is particularly true in poorer school districts that rely heavily on state funding. Because so much of the local school district’s funding is provided by the local (property) taxing district (or township), the richer school districts have a substantial funding advantage over poorer districts. To mitigate this problem, the state produces an “adequacy target” for each school district and funds the difference between the target and the each district’s local resources (e.g., see Illinois State Board of Education (2017)).
uncertainty and reduces growth prospects – neither of which is good for long-term prosperity. Renowned real estate investor, Sam Zell, summed up the predicament when he said:

“On a pure competitive basis, Chicago is far and away the No. 1 place that Amazon should pick for their second headquarters – major international airport, major universities, talent, etc. – and yet if I were Amazon, that’d be the last place I’d consider because you’re taking on, excuse the expression, pre-existing conditions.”

By “pre-existing conditions,” Mr. Zell was referring to Illinois' and Chicago's troubled finances, including their unfunded pension liabilities (Marek (2018)).

**II. F. Regulatory Burden**

Another form of taxation, at least as a frictional cost to the economy, is the level of regulatory burden. While these frictional costs are in many ways less observable than other forms of direct taxation, economists have long held (e.g., Stigler (1971)) that a high level of regulation acts like a tariff which are enacted to protect domestic producers; these high levels of governmental bureaucracy (or “red tape”) favor the large, incumbent firms (which can better afford to navigate the labyrinth of red tape found in heavily regulated jurisdictions) and disfavor the small, nascent firms. It is these small, nascent firms which are typically the source of new employment opportunities in a dynamic economy.

Ruger and Sorens (2018) rank Illinois as the 38th worst state in terms of regulatory burden, which – as illustrated below – is significantly worse than most of its neighboring states:
When the burdens of taxation are coupled with those of regulation, sources of Illinois’ flagging competitive role becomes more apparent.  

III. Another Look at Property Values vs. Taxes & Services

III. A. Depressing Property Values

Despite the city of Chicago’s remarkable productivity as an economic engine, it strains under the burden of significant unfunded liabilities:

---

35 Another factors contributing to Illinois’ declining relative prosperity includes that the state is ranked as one of the worst states (rated an “F” on a scale from F to A+) for small business (see: The Economist (2014)).
These fiscal imbalances (often concentrated in underfunded pension liabilities) have the dual impact of rising property taxes and decreased services (*i.e.*, infrastructure, education, policing, *etc*). As noted earlier, home prices are partly determined by the estimated present value of future property taxes. When those taxes increase unexpectedly, the present value of the marginal increase in taxes is deducted from the value of the home. There is another effect however, which is the uncertainty of future tax increases; this uncertainty further depresses prices. And finally, the reduction in services is yet another factor adversely effecting prices. The interplay of home prices and the first of these three adverse impacts are vividly displayed in the following graph:

---

**THE CITY’S BILLS EXCEED ITS ASSETS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>$40,385,882,000</td>
</tr>
<tr>
<td><em>Minus:</em> Capital assets</td>
<td>-$26,249,256,000</td>
</tr>
<tr>
<td></td>
<td>-$3,445,624,000</td>
</tr>
<tr>
<td>Assets available to pay bills</td>
<td>$10,691,002,000</td>
</tr>
<tr>
<td><em>Minus:</em> Total bills</td>
<td>-$45,109,152,000</td>
</tr>
<tr>
<td>Money needed to pay bills</td>
<td>-$34,418,150,000</td>
</tr>
</tbody>
</table>
| Each taxpayer’s share of this debt | -$38,100

**BILLS THE CITY HAS ACCUMULATED**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>$28,463,852,000</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>$8,125,453,000</td>
</tr>
<tr>
<td><em>Minus:</em> Debt related to capital assets</td>
<td>-$22,282,588,000</td>
</tr>
<tr>
<td>Unfunded pension benefits</td>
<td>$30,117,803,000</td>
</tr>
<tr>
<td>Unfunded retiree health care</td>
<td>$684,632,000</td>
</tr>
<tr>
<td>Bill</td>
<td>$45,109,152,000</td>
</tr>
</tbody>
</table>

Changes in Home Values Compared to Changes in Property Taxes

Changes in Home Values Compared to Changes in Property Taxes

More broadly, the drag of these three adverse forces can be seen in the laggardly appreciation rates of the Chicago area’s housing stock – an appropriation of homeowners’ equity via government taxation. Had the Chicago-area home prices kept pace with large-city composite, the average Chicago-area homeowner would now enjoy a nearly 50% increase in home values:

While some commentators have suggested that the low home-appreciation rates have improved Chicago’s affordability relative to its peer cities, others suggest that anticipated future property-tax hikes are embedded in Chicago’s laggardly appreciation rates (e.g., Cowen (2018)). The risk in all of this is whether or not today’s prices fully reflect these factors; there may be future unpleasantness with regard to home pricing.

In addition to the long-term trend in Chicago’s overall home prices, it is also interesting to observe the price changes within various price cohorts. The graph below tracks the home appreciation rates (indexing all home prices to January 1, 2000) for the upper, middle and lower thirds – or tiers – of home prices. As indicated below, the lower tier not only shows the most variability or amplitude (e.g., its relative price appreciation was the greatest leading up to the 2007-08 global financial crisis and its price depreciation was also the greatest following the financial crisis) over this period of time, it is also the tier that is now closest to its pre-crisis home prices. On the other hand, the high-tier of home prices shows just the opposite characteristics; instead, it displayed the least variability and is now furthest from its pre-crisis home prices.

Note
Chicago’s ≈ 20-year performance!
Unlike other indices shown here, Chicago has yet to exceed its earlier peak.
Many of the upper-tier homeowners are often those creating jobs and economic opportunities for others (as well as themselves). They also tend to be among the most potentially mobile homeowners (as their affluence often allows them to move more easily to other jurisdictions). So, despite the “tax the rich” sentiments of some, the laggy pace of high-tier home appreciation (both locally – in comparison to the Chicago area’s middle and low tiers – and nationally – in comparison to other major metropolitan areas) ought to be a concern to all.

III. B. Depressing Services

And against this backdrop of excessive public-sector spending, how well have state and local governmental entities delivered services? In other words, many citizens might find the higher taxes worthwhile if these governmental entities provided superlative services. However and as earlier noted, the excessive pension-fund liabilities also have the adverse effect of crowding out important government-provided services. This crowding out can be observed in the state’s lowly ranking on a number of service-related fronts; according to McCann (2019), Chicago ranks 126th (out of 140 cities) in terms of city-provided services:
Sources: McCann, “Best- and Worst-Run Cities in America,” 2019 and author’s calculations.

To pay more, to get more, seems reasonable; to pay more, to get less, seems unreasonable.

Moreover, the adverse effects of this crowding out of public-sector-provided services falls disproportionately on the poor – because the rich can often afford to circumvent these deteriorating service (while sending their children to private schools may be the most-often cited, other examples (moving to expensive suburbs, gated communities, etc.) exist as well).

To echo an earlier section (§II.B): While (state and local) taxes and the quality of government-provided services are not the only factors effecting the state’s population and economy, they certainly play a key role. Clearly, Illinois’ high taxes and deteriorating services have contributed to a population and economy which is slowing relative to the rest of the country over the last five years. Consider:

IV. The Persistent Mismanagement of Defined-Benefit Plans

Warren Buffett (2002) once famously referred to financial derivatives as “weapons of mass destruction” seeing them as “carrying dangers that, while latent now, are potentially lethal.” Much the same could be said about mismanaged defined-benefit pension plans.36

To be fair, not all states equally share the problem of unfunded pension liabilities. One way to consider the magnitude of the problem is view the problem on per-capita basis:


Whereas the nationwide average unfunded liability is approximately $18,300 per capita, that number is approximately $29,000 for each Illinois resident – ranking it the 47th worst state in the country (only California, Connecticut and Alaska are worse). This is sharp contrast to neighboring Indiana and Wisconsin, which rank 2nd and 6th, respectively; as noted earlier (§II.B), these are also the two states receiving the largest outflow of migration from Illinois.

36 These problems are not new. As but two examples, consider the books of Lowenstein (2008) and Whitney (2013). Instead, the size and complexity of the problems reminds one of the old saying: “hidden in plain sight.”
IV. A. Perverse Incentives

The very nature of Illinois’ pension system creates a series of perverse political incentives. As a much simplified overview, consider that the state mandates the basic terms (e.g., retirement age, vesting provisions, pension formula,37 cost-of-living adjustment, etc.) for all eligible public-sector employees.38 Local officials have little to no discretion over these terms (with regard to, for example, teachers and municipal workers who are covered by the state’s pension fund system); they are bound by these state-legislated mandates.39 Moreover, the local jurisdiction’s financial contributions to its employee’s pension benefits ends with the employee’s retirement (or resignation or dismissal); thereafter, the promised pension benefits are the financial obligation of the state. This financial transfer is fraught with potential conflicts. Perhaps the most notorious of these is the “spiking” of an employee’s compensation in the last few years of his/her employment (for some notorious examples, see Mahr (2015)), such that the increase in pension benefits is off-loaded from the local entity’s financial obligations to the state’s obligations.40 A less obvious impact of “spiking” is, for example, the school district’s use of this technique to help persuade older, more-

37 As an overly simplistic example of such formula, consider:

Years of Service × Annual Accrual Benefit × Final Average Annual Compensation

For example, consider an employee with 30 years of service whose final average compensation rate was $100,000 per year and a 2% annual accrual benefit (such benefits initially range from 1.67% to 3.5% and often increased in a stepped manner with increments of 5 to 10 years of service). This employee would initially receive an annual pension benefit of $60,000 (i.e., 30 years × 2% × $100,000). This annual benefit would then escalate at 3% per annum (as the legislated cost-of-living adjustment). This is vastly complicated area. Martin, et al. (2012) is recommended to interested readers.

38 The state administers five defined-benefit pension plans (listed according to their size): Teachers Retirement System, State Employees Retirement System, State Universities Retirement System, Judges’ Retirement System and General Assembly Retirement System. So, for example, all public (K-12) school teachers (outside the city of Chicago) are members of the state’s Teachers Retirement System.

39 Part of the controversial revisions to Wisconsin’s pension system (the 2011 Wisconsin Act 10, also known as the Wisconsin Budget Repair Bill), made by then-Governor Scott Walker, was directed at providing local officials with more autonomy regarding these and other financial obligations (e.g., compensation, health insurance and sick leave of public-sector employees). For example, see: Greenhouse (2014). It should also be noted that Wisconsin’s pension system is widely regarded as one the country’s best-funded and -run systems.

40 If public-sector employees anticipate this “spiking” of their retirement benefits, then they are willing to accept lower compensation today. While today’s (pre-retirement) compensation is paid by the local jurisdiction, the future (post-retirement) compensation is paid by the state.

The 2005 budget bill mitigated the spiking problem by requiring local school districts pay to pay for the increase in pension liability due to pay hikes greater than 6% per year in the pre-retirement averaging period. The 2018 budget increased the local school district’s cost responsibility to pay hikes of more than 3%. However, the 2019 budget restored the earlier 6% ceiling. See: Bauer (2019).
experienced teachers to elect early retirement; meanwhile, the school district replaces these older and more-expensive teachers with younger, less-experienced and less-expensive teachers. The net result is a financial gain for the school district (replacing more-expensive teachers with a less-expensive ones), a financial loss for the state (as the spiking increases the pension benefits that would otherwise be paid to the beneficiaries) and often an educational loss to the students (who are now taught by the less-experienced teachers, as opposed to the more-experienced ones).

In addition to the five state pension funds, there are seven Chicago-specific pension funds (including teachers, police and fire-fighters), three Cook County pension funds, 355 suburban and downstate police pension funds and 296 suburban and downstate fire-fighters pension funds as well as the Illinois Municipal Employees Retirement Fund (which, despite its name, is funded at the local level) – see Haider (2018).

To provide some sense of how large this economic benefit is to a pension-fund beneficiary, consider the following interplay of rates of return and post-retirement longevity, against a backdrop of the beneficiary’s initial (annual) pension benefit equaling $100,000 and growing at the rate of 3% per annum thereafter:
To be more concrete, assume the beneficiary lives 25 years beyond his/her retirement, then the present value of those future retirement payments is worth (depending on the assumed rate of return) today somewhere between $1.5 million and $2.1 million for every $100,000 of initial benefits. In comparison, it is estimated that the nation’s households where the heads of household are in their 50s have (a median of) $117,000 in retirement savings and the household for those in their 60s have $172,000 (see: Collinson, Rowey and Cho (2019)); in other words, the public-sector retiree with $100,000 of initial pension benefits has effectively more than ten times the household savings of his/her private-sector counterpart. A small portion of this differential is offset by the Social Security benefits received by the private-sector retirees.

Ironically, many of those public-sector (as well as private-sector) employees relocate after their retirement to low-tax states – thereby avoiding the high taxes in Illinois, which those remaining non-retirees pay in order to fund these pension payments – which help financially energize, through what is referred to in Keynesian economics as the “multiplier effect,” those states to which the retirees relocate. As an overly simple example: Assume that the retiree spends 60% of his/her retirement income in the state to which he/she retires; then, the multiplier effect is worth approximately $4.5 million (i.e., an average retirement benefit of \( \approx$1.8 million \div 1/(1 – .6) \)) in today’s dollars to the state in which the retiree locates, for every $100,000 of initial retirement benefits.

---

41 Dabrowski and Klingner (2016) estimate that 60% of eligible public-sector employees retire before 60 years of age.

42 As an example, a private-sector employee born 62 years ago, working for 40 years and currently earning $100,000 per year (this figure, which is not directly comparable to the $100,000 of initial benefits shown above for the hypothetical public-sector employee, makes additional assumption about lifetime earnings), would receive approximately $20,600 in first-year Social Security retirement benefits. [See: https://www.ssa.gov/oact/quickcalc/index.html.] This figure is then indexed to the future rate of inflation (as proxied by the Consumer Price Index for urban wage earners). Conversely, the public-sector employee in Illinois is promised a 3% per annum cost-of-living adjustment.

43 Nationally, according to Miller (2018), the top six states to which retirees locate are (in order of relocating population): Florida, Arizona, North and South Carolina, Nevada and Texas. Three of which (Florida, Nevada and Texas), have no state income tax.

44 Despite some occasional political discussions concerning the perceived unfairness of Illinois-funded pension obligations spent by ex-Illinoisans in other states, the Pension Source Tax Act of 1996 stipulates that, "No State may impose an income tax on any retirement income of an individual who is not a resident or domiciliary of such State." See: Beach (undated).
Currently, Illinois is one of 14 states\textsuperscript{45} that does not tax retirement income (no matter how large). As noted earlier, there are proposals to change this feature. If so, it would likely spur even a greater exodus of retirees from Illinois to other states.

**IV. B. Funding Ratios**

According to Pew (2019) and looking nationwide:\textsuperscript{46}

The growing funding gap, and accompanying decline in state pension funding levels, has occurred despite a substantial increase in employer contributions – resulting in a higher burden for taxpayers who are on the hook for increasing employer costs. Employer contributions as a share of state own-source revenue have nearly doubled since 2001 … meaning that a greater share of state resources is being allocated to pay for past pension obligations rather than current public services. Because pension costs have grown faster than the revenue available to pay for them, states have effectively diverted approximately $180 billion in spending since 2007 that could have been used to pay for teachers, firefighters or bridges.

Not surprisingly, the fiscal condition is worse for Illinois-based governmental entities: Illinois state and local governments spend more on pensions as a percentage of revenue than any other state – and nearly double the national average.\textsuperscript{47} Despite the massive amount of money spent by Illinois, it still ranks as one of the three worst-funded state pension plans in the country (Kentucky and New Jersey are the other two); as the graph below shows, these three states have an aggregate funding ratio of less than 40% – which has steadily declined from more than 60% over the last decade or so. In contrast, the best three states (South Dakota, Tennessee and Wisconsin) have an aggregate funding ratio of approximately 100% – which has stayed nearly constant over the last decade or so.


\textsuperscript{46} Such problems are also observed internationally – e.g., see: Worrachate (2019) and Cumbo and Wigglesworth (2019).

\textsuperscript{47} See Shuster (2019a).
Pension Funding Ratios of the Three-Best States (South Dakota, Tennessee and Wisconsin) v. the Three-Worst States (Illinois, Kentucky and New Jersey)

![Graph showing pension funding ratios over time]


The same Pew (2019) report succinctly summarizes the Illinois’ fiscal plight (in this instance, merely attempting to keep unfunded pension liabilities constant (i.e., “net amortization” equal to zero)):

Despite paying more than 16% of the state’s own-source revenue in pension contributions, Illinois would still need to contribute an additional 20% of payroll to avoid falling below the net amortization benchmark.

**IV. C. Weak Funding Ratios → Riskier Asset Choices**

Given that the underfunded status of public-sector pension liabilities has worsened and when coupled with the deterioration in the fiscal conditions of many state and local public entities,\(^{48}\) it is not surprising that the political pressures of increasing and competing claims on these state and local governmental organizations have led to a well-documented shift towards greater allocations of these pension fund assets to alternative investments, including commercial real estate, leveraged buyouts, venture capital, etc. And in turn, these greater allocations to real estate have – for example – been accompanied by an increasing share of

\(^{48}\) Munnell and Aubrey (2016) indicate that the aggregate funding ratios of state and local pension liabilities has declined from in excess of 100% in the late 1990s to the low 70% currently. Moreover, Andonov and Rauh (2019) find that pension funds with lower funding ratios forecast higher returns and that these higher forecasted returns are, in part, driven by allocations to riskier assets.
the real estate allocation being devoted to the riskiest investments as public officials hope to offset these deteriorating funding ratios with higher expected rates of return. Said another way, there is increased risk-taking by many of the nation’s public-sector pension plans – as the higher expected returns (associated with these more-risky assets) helps keep at bay current calls for contributing more cash to these underfunded plans. While this is the more politically expedient path (rather than seeking the legislature’s approval to appropriate sufficient funds to cure the unfunded liability), the eventual fall-out from increased risk-taking remains to be seen. If such returns prove disappointing, then the taxpayers (and possibly the pension beneficiaries) will suffer the shortfall.

IV. C.1. Weak Funding Ratios → Investment Performance

Let’s examine the investment performance of Illinois’ largest retirement plan, the Teachers Retirement System (TRS), which had net assets of approximately $52 billion as of June 30, 2018. And despite its actual allocation to variety of asset classes, let’s measure its (net-of-fee) performance in comparison to a simple portfolio allocation of 60% to equities and 40% to bonds (i.e., what once was the standard or baseline portfolio allocation of major U.S. pension plans) – see the last column of the table below:

<table>
<thead>
<tr>
<th>Time Period</th>
<th>TRS Investment Performance (net of fees)</th>
<th>Benchmarks: Return Indices (gross of fees)</th>
<th>Comparison of TRS Investment Performance (net of fees)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TRS</td>
<td>Wilshire 5000 Equity Market Return</td>
<td>B of A Merrill Lynch US Corporate Bond Total Return</td>
</tr>
<tr>
<td>1-Year Return</td>
<td>8.3%</td>
<td>16.0%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>3-Year Return</td>
<td>6.9%</td>
<td>12.1%</td>
<td>3.1%</td>
</tr>
<tr>
<td>5-Year Return</td>
<td>8.3%</td>
<td>12.8%</td>
<td>3.6%</td>
</tr>
<tr>
<td>10-Year Return</td>
<td>6.2%</td>
<td>10.8%</td>
<td>5.5%</td>
</tr>
<tr>
<td>20-Year Return</td>
<td>6.6%</td>
<td>7.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>30-Year Return</td>
<td>8.3%</td>
<td>10.5%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

Sources: Teachers Retirement System (TRS), Wilshire Associates, Bank of America Merrill Lynch, and Federal Reserve Bank of St. Louis.

49 For example, the share of real estate capital allocated to opportunistic investments has more than doubled in the last dozen or so years (e.g., it has increased from 10.4% in 2004 to 22.6% in 2016) for state and local pension plans – see PREA (2017).

50 At June 30, 2018, TRS had nearly 30% of its portfolio allocated to real estate and private equity (elsewhere referred to as alternative investments or merely “alts”), nearly 36% to public equities, approximately 23% to fixed-income securities and approximately 11% to other investments. See: Teachers’ Retirement System of the State of Illinois (2018).
Like many of the U.S. public-sector pension plans (e.g., see: Lazaroff (2017)), TRS’ (net-of-fee) performance generally fails to beat the passively managed benchmarks (for which, the annual investment management fees are substantially less than 1.0% per annum). Thus, it appears that TRS has assumed more risk (due to its allocation to alternative investments) without having generated a commensurate increase in (net) returns.

**IV. C.2. Weak Funding Ratios in the “New Normal”**

While Illinois’ state and local financial statements still presume a future rate of return on invested assets of approximately 7% per annum, much of the professional investment world is concerned with a “new normal” (see Gross (2009)) in which the returns on financial assets are much less than that witnessed over the previous 20-30 years. Certainly, central bankers across the globe have done their best (via “quantitative easing” and other fiscal and monetary tools) to usher in this period of the new normal. Simply look at the amount (approximately $17 trillion, globally) of government debt carrying negative interest rates (something nearly unimaginable a decade or so ago) to gain some perspective on this concerted effort to lower the cost of capital (and, hopefully, stimulate the “real economy”).

The table below summarizes the expectations of certain investment managers for future long-run returns by major asset classes:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>BlackRock</th>
<th>Principal</th>
<th>JP Morgan</th>
<th>Voya</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Month U.S. Treasury Bills</td>
<td>2.1%</td>
<td>2.3%</td>
<td>2.0%</td>
<td>3.0%</td>
<td>2.3%</td>
</tr>
<tr>
<td>10-Year U.S. Treasury Bonds</td>
<td>0.3%</td>
<td>3.1%</td>
<td>3.3%</td>
<td>4.2%</td>
<td>2.7%</td>
</tr>
<tr>
<td>U.S. Investment-Grade Corporate Bonds</td>
<td>2.3%</td>
<td>4.2%</td>
<td>4.5%</td>
<td>5.4%</td>
<td>4.1%</td>
</tr>
<tr>
<td>U.S. High-Yield Corporate Bonds</td>
<td>4.7%</td>
<td>6.0%</td>
<td>5.5%</td>
<td>N/A</td>
<td>5.4%</td>
</tr>
<tr>
<td>U.S. Large-Capitalization Equities</td>
<td>6.0%</td>
<td>6.4%</td>
<td>5.3%</td>
<td>7.0%</td>
<td>6.2%</td>
</tr>
<tr>
<td>U.S. Small-Capitalization Equities</td>
<td>6.3%</td>
<td>6.4%</td>
<td>6.0%</td>
<td>N/A</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

Sources: BlackRock (August, 2019), Principal (August, 2019), JP Morgan (September, 2018), and Voya (November, 2018).

Note that none of these financial institutions forecast any of these major asset classes to generate an expected return that meets or exceeds the pension plans’ actuarially assumed rate of return. If these forecasts are roughly realized, then unfunded pension liabilities of state and local plans will worsen.  

---

51 More specifically, let’s assume the standard 60/40 (equity/bond) portfolio allocation using these forecasted returns; then, the forecast of long-run portfolio returns is approximately 4.4% per annum. In contrast, TRS currently assumes a portfolio rate of return equal to 7.0% per annum, which exceeds the consensus view (proxied by the 4.4% estimate above) by 2.6 percentage points per annum. Given that TRS owns approximately $51 billion in assets (as of March 30, 2019), an annual
Beyond these capital-market expectations, there is another reason to doubt that Illinois’ pension funds (and other jurisdictions with poor funding ratios) will fully achieve the market return. During times of intense financial pressure (e.g., the period during and immediately following the 2007-08 global financial crisis), these poorly funded jurisdictions lack the financial wherewithal and discipline to meet their annual full-funding thresholds (such that the unfunded liabilities would otherwise remain constant); as a result, they do not invest new capital in what is generally recovering market (e.g., consider the rise, collapse and rebound witnessed both in the equites and the commercial real estate markets before and after the financial crisis). And, accordingly, we observe a widening disparity in the funding ratios of the well-funded and poor-funded plans since the financial crisis – see Pew (2019).

IV. C.3. The Academic Case for the Appropriate Discount Rate

There has been much debate and confusion about the appropriate discount rate with regard to the present value figure that represents the future retirement benefits that the city, county, or state owes to public employees and retirees. Novy-Marks and Rauh (2011) nicely summarize the prevailing academic view:

A promise to pay retirees a pension is economically equivalent to a promise to make debt payments to investors. Regardless of how pension fund assets perform, the pension payments will still have to be made. Finance is clear that the value of a stream of payments is determined by the risk properties of those payments themselves, having nothing to do with the assets chosen to back them.

This logic does not imply that governments should invest pension money in risk-free assets. It does, however, imply that when measuring the value of the liability, governments should reflect the fact that the liability is a debt that is guaranteed.

If the government decides to invest in risky assets, it decides to invest a lesser amount today with the expectation that this will provide the same future payoff as a greater amount invested in safe assets; then, it must be recognized that the former approach is a transfer from future taxpayers to today’s taxpayers in the event that the risky return is not realized.\textsuperscript{52}

\textsuperscript{52} Merely as an illustration: Assume that “risky” investments are expected to yield 7.25% per annum, while “safe” investments are expected to yield 4.80%; then, assuming a 30-year investment horizon, the risky-investment strategy requires approximately 50% of the initial funding under the safe-investment strategy to produce an identical end-of-horizon accumulation. The chance that the risky-

shortfall of 2.6 percentage points in realized returns would result in a first-year shortfall of $1.3 billion. However, the power of compounding is such that this shortfall would widen considerably over time. After 20 years (assuming no further contributions to or distributions from the plan and the respective rates of return are realized each year), the shortfall is approximately $77 billion.
IV. D. Overpromised, Not Underfunded, Benefits

The focus on the funding ratio, however, obscures the equally important point that Illinois’ promised pension benefits have grown at the astounding rate of nearly 9% per annum over the last 30 or so years, while other measures of economic prosperity have grown (at nearly 4% per annum) much more slowly:

![Growth in pension promises overwhelms Illinois' economy, taxpayer incomes](image)


investment strategy produces less than the expected 7.25% return represents the intergenerational risk transfer (i.e., the initial 50% contribution turns out to be too low; it should have been closer to 100%).

53 The growth in liabilities is attributable to several factors. Some of them relate to factors such as the increasing share of public-sector employees, the growth in their wages (e.g., Andrzelewski (2018) estimates that, across Illinois, ≈ 71,000 public-sector employees annually earn $100,000 or more and ≈ 23,000 retirees annually receive benefits of $100,000 or more), etc. Others relate to the increasing generosity of the Illinois’ political class vis-à-vis the public-sector employees: replacing a cost-of-living adjustment indexed to inflation with an automatic 3% per annum adjustment, significantly enhanced pension-benefit formulae, lucrative early-retirement options, automatic salary increases for graduate degrees, permitting the "spiking" of end-of-career salaries, etc. – see Dabrowski and Klingner (2018).
IV. E. Illinois’ “Ramp” to a 90%-Funding Ratio in 2045

In 1994, then-Governor Jim Edgar signed into law, what later became known as the "Edgar Ramp," a 50-year plan to restore the state's retirement systems to solvency through gradually escalating investments by taxpayers; such that Illinois-administered pension funds must achieve a 90% funding ratio by 2045. It has been roundly criticized, including the Securities and Exchange Commission which filed a 2013 complaint against the state charging that the Edgar Ramp was the "primary driver" of Illinois' worst-in-the-nation unfunded pension liability because its insufficient investments in the first 15 years merely shifted costs to the future and, as a result, created significant financial stress and risks for the state." Subsequent governors have largely contributed to a worsening of the problem – see Zorn (2016).

Here is the state’s forecast of how that increase in the funding ratio for the five pension plans\textsuperscript{54} administered by the state might be achieved (see rightmost column of the following table) such that the 90% funding ratio is achieved:

\textsuperscript{54} As noted earlier, the state administers five defined-benefit pension plans (ranked according to the size of their unfunded liabilities): Teachers Retirement System, State Employees Retirement System, State Universities Retirement System, Judges’ Retirement System and General Assembly Retirement System. The aggregate unfunded liability is reported as approximately $133 billion, with a funding ratio of approximately 40%. See: Commission on Government Forecasting and Accountability (2016).
Given Illinois’ history of financial mismanagement, it strains credibility to believe a forecast that has state pension-fund contributions more than doubling over the next 25 years (i.e., a projected contribution of approximately $9.3 billion in 2020 growing to $19.6 billion in 2045, or approximately 3% per annum) in order to achieve the mandated 90% funding ratio. Furthermore, such calculations presume that the underlying actuarial assumptions (e.g., rate of return on invested assets, beneficiaries’ life expectancy, etc.) are fully realized. As noted here and elsewhere, the assumed rate of return – among other actuarial assumptions – seems...
aggressive in light of today’s capital market yields. Absent some legislative “grand bargain” addressing pension reform, it seems more likely that politicians will once again be in front of the citizenry breaking yet another promise.

IV. F. A Look at Chicago’s Funding Levels

Chicago’s new mayor, Lori Lightfoot, faces an approximate $830 million budget deficit and promises that all (revenue and spending) options “are on the table” – see: Raice and Gillers (2019). Unsurprisingly, much of the deficit relates to the city’s unfunded pension liabilities, which – at $41.7 billion (according to a 2017 analysis by Moody’s) – are the largest net pension liability of any major U.S. city, fueled by the biggest one-year jump in the city’s mandated pension payments (against the backdrop of a declining population) – see Singh (2019). Let’s consider Chicago’s situation more specifically:

As compared to eight other large U.S. cities (see above), Chicago has both: a) the highest levels of indebtedness per citizen (Chicago has approximately $60,000 per capita, as compared to an average of roughly $21,000 per capita for the other eight cities (see graph to


55 There is a vast market, by which private-sector employers with defined-benefit pension plans, which often are “closed” to new employees, transfer this liability to a financial institution (typically, a life insurance company) in return for an upfront cash payment – often referred to as a “pension risk transfer” (e.g., see: Scism (2017)). I have not been able to find an instance of this sort of financial activity taking place with a public-sector defined-benefit pension fund; I suspect it is because the vast majority of such funds are not yet “closed.”
the left], and b) the highest ratio of indebtedness to income per citizen [Chicago is at approximately 190%, as compared to an average of roughly 75% per capita for the other eight cities (see graph to the right)]. Clearly, neither indicator is encouraging with regard to the city’s long-term productivity and vibrancy.

IV. G. Chicago’s Unfunded Pension Liability per Household

On top of these city-owned liabilities, the county- and state-owned liabilities must also be considered in order to draw a more complete picture of the debt-overhang problem faced by Chicago’s property owners. So considering the city’s share of Cook County’s unfunded liability and Illinois’ unfunded pension liabilities, the unfunded pension liability is approximately $144,000 per Chicago household. However, this per-household metric belies the ability of all Chicago households to pay their proportionate share of this unfunded pension liability. As the table below shows, 48% of Chicago households made less than $50,000 per year (in 2017):

![Source: Dabrowski and Klingner, “Wealthy’ Chicago Households on the Hook for Up to $2 million in Debt Each under Progressive Approach to Pension Crisis,” Wirepoints, June 25, 2019.](image)

As we limit the number of households who can plausibly pay their share of this aggregate liability, we see that the proportionate share of this (unfunded pension) liability grows exponentially – as the chart below indicates:
For example, by limiting the repayment of the unfunded liability to those households making more than $75,000 per annum, their proportionate share of the unfunded liability rises to approximately $390,000 per household. And by limiting the repayment of the unfunded liability to those households making more than $200,000 per annum, their proportionate share of the unfunded liability rises to approximately $2 million per household. Given the mobility of higher-income households, it would seem that some plan other than merely the status quo is needed to resolve the fiscal ills of the city, county and state.

V. The Oft-Proposed Property-Tax Solution

V. A. One-Time Capital Levy = f(Real Estate’s Immobility)

Because of real estate’s very immobility, a number of economists\(^\text{56}\) advocate using property taxes to finance unfunded governmental liabilities (including pension plan liabilities). Perhaps the most-prominent, local example is that recently proposed by three economists at

\(^{56}\) For example, Brinkman, Coen-Pirani and Sieg (2016) suggest that equilibrium can be realized when underfunding is capitalized in property prices, noting that differences in funding levels are systematically related to differences in economic fundamentals such as wage levels, the size of the public sector in a city, and the compensation of public-sector workers. Funding policies matter if housing also serves as collateral for households that are potentially credit constrained. Importantly, a policy intervention that mandates higher funding rates for municipalities than those adopted in equilibrium improves household welfare.
the Federal Reserve Bank of Chicago – see: Haasl, Matton and Walstrum (2018) – to use residential property taxes to repay Illinois' unfunded pension liabilities:

In our view, Illinois’ best option is to impose a statewide residential property tax that expires when its unfunded pension liability is paid off. In our baseline scenario, we estimate that the tax rate required to pay off the pension debt over 30 years would be about 1%.

To be clear, a one percentage point increase in the property-tax levy would propel Illinois to 3.31% the highest in the country (see: §II.B.3. – currently, Illinois is at 2.31%, while New Jersey is at 2.44%).

Despite the outcry in the popular press (e.g., see: Rodkin (2018)), Arnott and Meulbroek (2018) explicitly acknowledge the likelihood of property taxes as the instrument for this capital levy and estimate that, nationwide, unfunded state and local pension burdens average 20% of real-estate values – a ratio which exceeds many owners’ home equity. Moreover, if real-estate prices have yet to fully adjust to reflect these unfunded pension obligations, then many homeowners’ equity could be at risk. The authors point to Detroit, as an example of the public pension burden ultimately devastating the housing market. The authors proceed to calculate, among other ratios, each state’s unfunded pension liability per household expressed as a percentage of that state’s median home price:
Unfortunately, such a calculation places Illinois as the 45th worst-ranked state; that is, the state’s aggregate pension liability, when divided by the number of households, represents more than 28% of the state’s median home price. As subsequently discussed, this liability is particularly problematic for highly levered borrowers (i.e., borrowers with more than 70% leverage would, after transaction costs, have “negative” equity in their homes).
V. B. “One-Time” Charge Particularly Hurts Levered Borrowers

Per the proposal of Haasl, Matton and Walstrum (2018), this “one-time” charge is to repaid over thirty years – assuming all of the charge is used to repay Illinois’ unfunded pension liabilities (meanwhile, history suggests that something less than all of the new tax revenues will be used for its intended purpose). As a simple back-of-the-envelope calculation, consider a $250,000 home with an increase in the property-tax rate of one percentage point (i.e., the property-tax liability increases by $2,500 in the first year). Let’s further assume that the tax will grow at 2% per year over 30 years and that the appropriate discount rate is 7% (the approximate rate the state uses in its present-value estimate of its future pension liabilities). Then, this one-time charge will reduce the home’s value by approximately $38,000 or 15% of the initial value. So for those homeowners with a mortgage loan equal to or exceeding 85% of the home’s initial value, they will have “negative equity” (i.e., the mortgage-loan amount exceeds the fair market value of the home). It is already the case, according to Rodkin (2019b), that nearly 8% of Chicago-area homeowners owned homes (as of June, 2019) with negative equity, which is more than twice the rate of "underwater" homeownership nationwide. Clearly, any proposal resembling that of Haasl, Matton and Walstrum (2018) will likely result in a substantial worsening of this 8% figure.

Moreover, it is not only the over-levered borrower who is hurt when such an appropriation of property values takes place. Indeed, there is a “contagion” (or spillover) to other homes in the neighborhood of foreclosed homes. Recall the devastation of the 2007-08 global financial crisis as it relates to home prices; foreclosures freeze the market for non-foreclosure properties as well, while reducing prices and sales volume, by eroding lenders’ profits, destroying the credit of potential buyers, and making buyers more selective – all amplifying the initial wave of foreclosures. Guren and McQuade (2019) calibrated their model to the recent housing bust, suggesting the amplification generated by foreclosures is significant: Ruined credit and choosy buyers account for approximately 25% of the total decline in non-distressed prices and lender losses account for approximately an additional 25%.

V. C. “One-Time” Charge Hurts Low-Income Areas

In low-income neighborhoods, vacant lots are numerous (e.g., see: Ramos (2019)); in those instances, the fair market value of the built structure is less than the (depreciated) cost of the building improvements – even when the cost of the land underlying that structure is worth

57 Again, the issue of the extent to which home prices already reflect the dire conditions of state and local balance sheet should be acknowledged.

58 Among the nation’s 20 largest metropolitan areas, only Miami has a higher rate of negative equity (or underwater homeownership), at approximately 9.5%.
zero. An increase in property taxes will only worsen this condition; that is, the fair market value of the property falls (absent an increase in services or some other positive externality) as property taxes rise – thereby worsening the economics for those lots which are currently vacant (i.e., the chances of redevelopment fall even further) and moving some of those otherwise developable lots to near-permanent vacant status.

For marginal buildings, the new economics (of higher property taxes) simply will not work: the increase in operating expenses (i.e., property taxes) renders the building worthless, as whatever the basket of benefits provided by the building is now outweighed by the costs to operate it. It is unclear how many marginal homeowners will be adversely effected. And, to be clear, there are many potential complications; let’s consider two: a) as noted earlier, some of the impact of an increase in property taxes is already embedded in current market prices (thereby somewhat mitigating the initial effect), and b) there is likely to be a “contagion” effect by which the adverse effects of one or more vacant properties in a given neighborhood casts a pall upon other properties in that neighborhood (thereby worsening the initial effect). In any case, exacerbating the problems attendant to vacant lots in the poorest neighborhoods should be viewed as socially problematic in a city like Chicago, which ranks as the 9th worst in the nation in terms of income inequality – see Lu and Tanzi (2019).

V. D. The One-Time Capital Levy Is Not Credible

Finally, spendthrift politicians – despite earlier promises – often have difficulties allowing a “temporary” tax to expire. Cochrane (2018) nicely summarizes the problem:

There is an economic principle here, the "capital levy." A government in trouble has an incentive to grab existing capital, once, and promise never to do it again. The promise is important, because if people know that a capital levy is coming they won't invest (e.g., build houses). If the government can pull it off, it is a tax that does not distort decisions going forward. Of course, getting people to believe the promise and invest again after the capital levy is... well, let's say a tricky business. Governments that do it once have a tendency to do it again.

A local case in point is the construction of the Illinois Tollway: When proposed in 1953, it was originally funded with a bond issue financed by the expectation of future tolls paid by motorists; once the bonds were repaid, politicians promised the removal of the tolls. As it turned out, revenues exceeded expectations and the bonds were retired early. See Paprocki (2014). Of course, today’s tollway-driving motorists don’t have to be reminded of this
broken political promise. (Instead, politicians used the excess tollway revenue to fund other (non-tollway) governmental services.)

VI. A Robust, Proposed Solution

As earlier noted, the dire fiscal situation of the city, county and state argue for a grand bargain which jointly addresses pension reform and new sources of revenue. This paper examines the broad elements pension reform; such a proposal should include:

VI. A. Defined-Contribution Plans for New Employees

Let’s stop digging! Translation: Let’s move to defined-contribution (or 401(k)-type) plans for all new public-sector employees. According to the Urban Institute, 83% of full-time state and local government employees were participants in a defined-benefit pension plan in 2018, while just 16% of full-time workers in the private sector were participants in a defined-benefit pension plan. The benefits of a defined-contribution plan include:

- Transparency – To put it mildly, the financial reporting around defined-benefit pension plans is murky and convoluted. As noted earlier, there are a host of assumptions (e.g., the rate of return earned on invested assets, the average age at which a public-sector employee retires, the average “final” salary (for purposes of determining initial pension benefits), the life expectancy of the employee, etc.) involved in estimating future pension liabilities, all of which is coupled with complicated accounting practices (e.g., Governmental Accounting Standards Board (GASB), statement 67 and 68) that, among other matters, attempt to smooth periodic variations in the liabilities. As a result, there is often much legitimate disagreement – as also earlier noted – about the amount of the “true” liability (e.g., see §IV.C.3). Cynically, it can be argued that certain politicians use this cloud of

59 While this discussion about defined-benefit v. defined-contribution plans may sound, to the average taxpayer, a bit like the central bankers’ discussions about whether to return to the gold standard, the distinction is critical to a long-term, sustainable solution.

60 Beginning in 2011, Illinois moved to a two-tiered (defined-benefit) pension plan system. Those employees who began their employment before 2011 were part of the Tier-1 recipients, while those starting later are part of the Tier-2 recipients – whose retirement benefits are substantially less than those of the Tier-1 recipients. As reported by Hinz (2019a), some observers are concerned that reduced retirement benefits of the Tier-2 recipients may violate the portion of the Social Security law that requires state and local pension systems to pay at least the same level of benefits as Social Security in order to receive “safe harbor” status. [In Illinois, some public-sector employees do not pay into Social Security and, accordingly, they do not receive Social Security retirement benefits. For example, police and firefighters generally receive a pension instead of social security, But other state workers also receive Social Security, while teachers are somewhere in the middle.]
uncertainty to shroud the taxpayers’ understanding of the magnitude of these financial commitments; in so doing, the politicians’ near-term chances of re-election are better while the taxpayers’ long-term finances are worse.

On the other hand, the adoption of a defined-contribution pension plan would eliminate this opaqueness. The public-sector workers would receive an annual contribution (based on a pre-determined, but negotiated, formula) to his/her retirement account – just as about 84% of the private-sector employees do. This annual employer contribution would be completely transparent to all taxpayers (as well as public-sector employees). There would be no need to make a host of assumptions, coupled with complicated accounting practices; instead, the financial reporting is straightforward and transparent.

- Certainty for Employers and Taxpayers – A switch from a defined-benefit pension plan to a defined-contribution plan impacts both the funding and the benefits sides of the equation. For the employer (and the taxpayer), the annual pension contribution (for each employee) is known with certainty under a defined-contribution plan – while the annual contribution is uncertain with a defined-benefit plan (as actuarial assumptions change, presumably as realizations (e.g., investment returns) deviate from expectations). For the employee, defined-contribution plan shifts the uncertainty of post-retirement benefits from the employer to the employee (again, as is the case with approximately 84% of full-time workers in the private sector). However, such a shift is mitigated when the employer has not fully funded the defined-benefit plan; in poorly funded defined-benefit plans, there is a risk that governmental entity will not have the resources to make those pension payments as they come due.

- Elimination of Inefficiencies – A switch to defined-contribution pension plans would also eliminate the “spiking” and “double dipping” often associated with defined-benefit pension plans (as described earlier) as well as the nudge to have higher-paid, but more-experienced, teachers (as one example) elect early retirement so that they will be replaced with lower-paid, but less-experienced, teachers.

- Reduced Political Incentives – As a class, politicians are well known for making promises today but with financial consequences placed well in the future (to some distant election cycle). One does not have to look any further than the massively

---

Moreover, a retiree who prefers the stability of monthly retirement payment can transfer the net assets of his/her defined-contribution pension plan to one of many (highly rated) life insurance companies who will convert the immediate cash contribution (of net assets) to a future monthly annuity for the life of the retiree (and possibly his/her beneficiary).
underfunded defined-benefit pension plans (at both the state and local level) to gain some sense about the frequency with which this sort of political “kick the can” takes place. Instead, a switch to a defined-contribution plan eliminates this type of financial chicanery — because the very nature of the plan requires immediate funding.

• Employee Mobility — As reported by DiSalvo (2019), four of five teachers will leave their school district before earning their full pension benefits (which often takes 20 to 30 years to accumulate). Consequently, about 80% of the teachers are “shortchanged” in the sense that they change districts (or quit teaching) before vesting or leave when their contributions are still greater than the payout for which they are eligible.62

A similar lack of portability with regard to promised pension benefits also effects other public-sector employees (police officers, fire fighters, etc.). The result is that these employees are “stuck” (if they want to accumulate maximum (or near-maximum) pension benefits) in jobs and/or locales that they might otherwise choose to leave (for a host of professional and/or personal reasons). This lack of mobility ill serves both the employee and the employer. A defined-contribution plan would remedy this immobility; such a plan would allow those employees who decide to stay in a particular job and/or locale the opportunity to do so, while also providing them with the option to leave should they choose — but to leave with the full portability of a defined-contribution pension plan.

• Mandated Full-Funding – The nature of a defined-contribution plan is that it is fully funded each fiscal year, unlike what we have otherwise seen with defined-benefit pension plans. This full funding provides public-sector employees with funding assurances that are sadly missing with many state and local defined-benefit plans.

Recognizing these benefits, the State of Michigan, for example, places all new public-sector employees, beginning in 1997, into a defined-contribution plan — see Liljenquist (2013) — whereby the state automatically contributes 4% of the employees’ salary and matches employees’ contributions up to a maximum of 3%. According to Dreyfus (2013), the State of Michigan saved not only $167 million in normal pension costs and $2 billion to $4 billion in unfunded pension liabilities over the first fourteen years of the plan, but also saved incalculable benefits from eliminating the adverse political incentives associated with defined-benefit plans (e.g., retroactive benefit increases and deferred funding). He writes:

62 In purely economic terms, those teachers who leave the district early, including most of the younger ones, subsidize the “lifers” — see DiSalvo (2019).
In contrast, a defined-contribution plan cannot be legally underfunded, and any increase in the plan’s benefits must essentially be paid for when the change is made. A defined-contribution plan thus reduces the political opportunities to defer funding of pension benefits to a future generation of taxpayers and avoids placing a questionable burden on taxpayers who may have been too young to vote when benefits were granted and funding was postponed.

Some states have instituted “cash balance” plans (which are a hybrid of defined-benefit and defined-contribution plans). For example, the employer contributes a percentage of the worker’s pay into a fund and that amount accumulates based on a targeted rate of return (generally, approximating the yield on corporate bonds) and, upon the employee’s retirement, the balance is transferred to the employee who receives an annuity (i.e., a fixed, monthly payment). As compared to defined-benefit plans, the employer’s financial obligation tends to be significantly lower with cash-balance plans – because the cash-balance plans typically stipulate a rate of return far below that implied in typical defined-benefit plans. See: Liljenquist (2013).

This proposal to move all new public-sector employees to a defined-contribution (or a cash-balance) plan extends well beyond the Michigan example; in fact, at least seventeen states have done so:
Among the *Fortune 500* companies, the trend to moving to defined-contribution plans is more pronounced: In 1998, 238 of those 500 companies offered defined-benefit plans and 199 offered (only) defined-contribution plans (with another 50 offering hybrid plans). In 2017 (twenty years later), only 16 of those 500 companies offered defined-benefit plans and 419 offered (only) defined-contribution plans (with another 65 offering hybrid plans):

![Diagram of retirement plans across the United States](source: Center for Retirement Research at Boston College)

VI. A.1. Cash-Flow Hurdle → Debt to Bridge Transition

A move to defined-contribution pension plans (for all new employees) raises two frictional issues. The first of which is the cash-flow problem experienced when moving from an underfunded defined-benefit plan to a defined-contribution plan. In particular, the current retirement system, as practiced for example in Illinois, is largely a “pay-as-you-go” system: that is, the retirement contributions of current employees are used (along with fund’s net investment returns) to help pay retirement benefits to former employees, who have earlier vested into the retirement system. Replacing a defined-benefit system for all new employees with a defined-contribution system slows (and ultimately ends) this transfer from current employees to future employees (i.e., the current pay-as-you-go system). This transition must be funded either with a cash infusion or (more likely, given the number of cash-strapped state and local entities in Illinois) a loan to bridge this transition. (It should be axiomatic that such borrowing only takes place when the defined-benefit plans are extinguished for all new employees.)

Note that this transition is a purely a cash-flow problem; indeed, the accrued liabilities associated with retirees and the current liabilities associated with active public-sector employees are unchanged (other than the natural, organic changes in such liabilities over time). However, this difference between the required cash payments and the reported accrual of the liability nicely highlights a significant part of the underlying problem: The opaque nature of the financial reporting for defined-benefit plans permits (cynics might suggest that it encourages) substantive departures between the annual accrued liability and the actual cash contributed to extinguish a portion of the liability – particularly by politicians tempted to solve short-term problems, while exacerbating long-term problems. Importantly and as earlier noted, these problems are eliminated when a defined-contribution system is in place.

63 The analogy to the United States’ “pay-as-you-go” Social Security system is obvious. In a modification of the colloquialism about “robbing Peter to pay Paul,” consider the current retirement contributions of Peter (who is currently working) which are used to pay Paul (who is retired); Peter hopes Patrick will be around to fund Peter’s retirement when he is retired. In fact, the whole system is largely built upon generational subsidies – for just about every Tom, Dick and Harry. A more optimistic view of the potential sustainability of these sorts of pay-as-you-go systems is offered in Lenney, Lutz and Sheiner (2019).
VI. A.2. Any Measurable Effect on Wages?

The second of these frictional issues is whether or not the new public-sector employees demand higher wages due to the replacement of a defined-benefit retirement plan with a defined-contribution plan. (And, if so, how much might those wages have to rise?) The initial reaction may be that wages would have to increase by the perceived loss in retirement benefits. In turn, this perceived loss will be a function of the details (e.g., employer’s matching ratio, participants’ discretion with respect to investment alternatives, etc.) of how the proposed defined-contribution plan compares to current defined-benefit plan. However, it is not entirely a dispassionate financial analysis; the differential will also depend on how employees view the trade-off between certain post-retirement financial benefits associated with (fairly rigid) defined-benefit plans and the flexibility (e.g., employees’ mobility, portability, etc. – see above) associated with defined-contribution plans. Additionally, these financial tradeoffs will be mitigated by two other effects:

- Fitzpatrick (2015) challenges the widespread notion that public-sector employees are paying for generous post-retirement pension benefits with decreases in current wages. In a study of Illinois public-school teachers, she finds that such teachers – who receive large fractions of their lifetime income in the form of deferred compensation – displayed little appetite for purchasing additional pension benefits. By estimating employees’ willingness-to-pay for benefits relative to the cost of providing them, the results suggest that employees are willing, on average, to pay only 20 cents for a dollar increase in the present value of expected retirement benefits. She suggests that her findings imply “…substantial inefficiency in compensation and cast doubt on the ability of deferred-compensation schemes to attract employees.” Said another way, it is doubtful that a switch from defined-benefit to defined-contribution plans would require a dollar-for-dollar increase (however that differential might be determined, see above) in the wages of public-sector employees. In her view, this suggests that a “win/win” (for both employees and employers/taxpayers) may include: such employees may be willing to exchange some of these future post-retirement benefits for a substantially discounted lump-sum payment today and/or that even small increases in wages (coupled with a move to defined-contribution pension plans) would make the employees better off.

64 While public-sector employees may well value a marginal increase in their post-retirement benefits differently from the average value placed on the entirety of their post-retirement benefits, the marginal perspective provides some insight as to the employees’ valuation of decreasing (or, for that matter, increasing) promised post-retirement benefits – including the possibility that such employees may be willing to exchange some of these future benefits for compensation today.
For many public-sector employment opportunities, the number of applicants far exceeds the number of available positions (not altogether surprising, given that Illinois’ public-sector employees are among the highest paid in the country – see: §II.D.1). From an economist’s point of view, this excess of applicants vis-à-vis positions can be illustrated as follows:

As with any competitive market, intersecting supply and demand curves create an equilibrium. In this hypothetical illustration, the upward-sloping (green) supply curve intersects the downward-sloping (blue) demand curve such that the equilibrium wage-and-benefit package is $100 and the equilibrium number of employees is 10 – as indicated by the grey, dashed lines. When market participants (e.g., an agreement between the teachers’ union and the school district), however, artificially set the wage-and-benefit package above the equilibrium rate, then there is an excess supply

---

65 These equilibrium values of $100 and 10 are arbitrary; they were selected because they are easily scalable to specific situations (i.e., they are “easy to work with”). For example, the wages and benefits of Chicago public-school teachers may differ from those of, say, Peoria; similarly, the number of employed Chicago public-school teachers may also differ from those of Peoria – so that these two markets would be scaled differently.
of potentially available employees (e.g., a lottery system is often used to correct the imbalance between the number of applicants for a few new police and firefighter positions in Chicago – see: Spielman (2018b)). In this illustration, the wage-and-benefit package is set to $120 (v. the equilibrium wage-and-benefit package of $100) and, as a consequence, there are 12 potential workers (willing to work for the wage-and-benefit package of $120) for every 8 hired workers.66

If the mandated wage-and-benefit package is lowered – due to, for example, a conversion from defined-benefit pension retirement plans to defined-contribution plans – the impact is then to push the employees’ supply curve up and to the left (as shown below). The new supply curve illustrated below was selected to reflect a new equilibrium in which the (public-sector) employee market perfectly clears: the mandated wage-and-benefit package now represents the market-clearing equilibrium and the excess of potential workers over hired workers is eliminated. If the supply curve were to experience a lesser shift, then the earlier condition (i.e., the mandated wage-and-benefit package exceeds the equilibrium wage-and-benefit package and the number of potential workers exceeds the number of hired workers) would remain, but to a smaller degree. If the supply curve were to experience a greater shift, then the equilibrium wage-and-benefit package would exceed the mandated wage-and-benefit package (and the number of hired workers would fall short of the required number of workers); in turn, the value of the mandated wage-and-benefit package would have to rise sufficiently in order attract the required number of hired workers.

66 In the absence of restrictive union hiring practices, this excess would be favorably viewed as allowing the employer(s) to select better-qualified candidates – for a given fixed wage-and-benefit package. However in the presence of such hiring practices, it is not clear that better-qualified candidates are necessarily selected.
While it is ultimately an empirical matter (depending on attributes like relative elasticities, employee preferences, the financial characteristics of the defined-contribution plan, etc.), there are reasons to believe that full financial impact of the trade-offs between defined-benefit and defined-contribution plans, when viewed from the employees’ perspective, will not be fully reflected in increased wages.
VI. B. “Lock Box” for New Revenue Sources

All new sources of revenue (e.g., the further legalization of casino gaming, sports betting and/or marijuana, a graduated income tax, an income tax on retirement benefits, etc.) are to be dedicated to the pay-down of unfunded pension benefits. The same is to be said of any significant cost-cutting mechanism (e.g., the consolidation of the state’s huge number of local governmental entities) and/or the significant monetization of the state’s assets (e.g., the sale of the Illinois Tollway Authority, Illinois Lottery, James R. Thompson building, etc.). Essentially, this is tantamount to a moratorium on discretionary spending until the 90% funding level is obtained (i.e., until the Edgar ramp is reached). However, such a proposal is also fraught with potential political manipulations: For example, what is “discretionary” and what is not? Is 90% the appropriate percentage or something else (e.g., 100% or 80%)? How are changes to the computation (after all, it is only an estimate) of the funding level to be vetted? The list goes on. The point is that both concerned citizens and public-sector employees (and their union representatives, who to-date have been too lax in monitoring the funding status of their constituents’ pension plans) must remain vigilant.

VI. C. A Constitutional Amendment

No one likes the idea of unilaterally altering the terms of a contract (e.g., the pension plan promises between employers and employees) after it has been executed. That said, everyone who signs a long-term contract assumes the risk that the counterparty cannot perform in the future. So, despite the Illinois State Supreme Court’s 2015 ruling that the pension benefits of existing public-sector employees cannot be reduced, these employees face the risk that the (city, county and/or) state’s (economic or de facto) bankruptcy will cause these pension-related promises to be unfilled.

VI. C. 1. Some Legal Context

Monahan (2017) points out that retirement beneficiaries have iron-clad rights to the assets of the pension trust (i.e., each pension plan has its own trust vehicle; into which, contributions are made and, from which, distributions (and expenses) are paid); as long as the trust’s assets exceed the required payout, the pension promise is inviolate. The more difficult legal question arises when the trust’s assets are fully depleted. While the courts may order the payment of the pension benefits,
...courts do not hold the power of the purse and are therefore unable to directly order the payments of benefits. At best, a court could order the legislature to appropriate the necessary funds, and then seek contempt sanctions in the event of noncompliance. In general, problems that require appropriations to solve are problems that courts are ill-equipped to handle. (pp.382-3)

... the political risk of non-payment facing state and local pension participants is not unique; anyone that relies on a government program faces a similar risk. But state and local pension participants may face a greater degree of risk because states bear the full cost of benefits, and the general population would benefit (in some cases, significantly) from non-payment. (p.413)

Monahan (pp.37-38) goes on to point out that cities, unlike states, can file (with the state’s consent) for a reorganization of their financial obligations under a chapter 9 bankruptcy proceeding and, that in previous instances of doing so, the courts have decided that pension obligations are no different from other financial obligations (e.g., municipal bonds) in that they may be modified in the reorganization process; consequently, a city may revise its pension obligations with court consent – while a state may not.

Thus, municipal bankruptcy may be the most efficient path to remedy the financial straits that many cities find essentially unresolvable in any other manner; however, bankruptcy is not without its adverse consequences (e.g., casting a cloud over future municipal bond offerings). Consequently, the bankruptcy option should be shrewdly evaluated.

While Chicago and many of its suburban municipalities may seem far removed from a possible bankruptcy filing, it seems nearly certain for some Illinois cities (e.g., East St. Louis and Harvey) and quite plausible for others (e.g., Peoria and Rockford). If so, consider three scenarios:

a) What if the State of Illinois denies such cities the right to file for bankruptcy? In which case, will the state bail out these underfunded pension plans? (And, in turn, add to its own already significantly underfunded pension liabilities (to $200 billion up from $137 billion – see Schuster (2019c))? If not, those pensioners (and their beneficiaries) may face significant shortfalls with respect to their anticipated (future) pension benefits (while they have a valid legal claim, their economic claim may border on worthlessness).
b) If the state permits such cities to file, those pensioners may face significant restructuring (i.e., reduced benefits) as result of the bankruptcy judge’s decree. Will a statewide standard be set as to the apportionment of municipal assets between the pensioners and other creditors? Or, will the apportionment become ad hoc, with various bankruptcy judges deciding differently?

c) What if the state permits some cities the right to file, while denying the right to others? If so, on what basis? [The federal government’s decision to bail out Bear Sterns and AIG during the global financial crisis, but not Lehman Brothers, comes to mind.] It is not difficult to envision some municipalities attempting to “game” the rules – thereby pitting some citizens against others.

It is also not difficult to envision – that without substantive modification to existing pension benefits – one or more of these municipal bankruptcies (either de facto or de jure) leading to a cascade of bankruptcies throughout the state. If this were to happen, then it seems quite likely that even those municipalities with sound fiscal practices may also be adversely effected.

VI. C. 2. Examples of Restructured Pension Benefits

Municipal legalities aside, let’s consider two well-known instances in which pension beneficiaries have been forced to settle for less than what was initially promised:

- Airline personnel (pilots, flight attendants, mechanics, etc.), due in large part to the bankruptcies within the airline industry, have repeatedly been subject to the renegotiation of their employment benefits (including their pension benefits). Clearly, these people are important to the public’s safety and well-being.67

- Prior to 1984, recipients of Social Security payments (i.e., retirement benefits) were untaxed; then, beginning in 1984, a portion of those benefits has been subject to federal income taxes.68 Going forward, there are frequent proposals floated by

67 The plight of airline employee’s retirement benefits is tied to the flagging financial wherewithal of the federal government’s Pension Benefit Guarantee Corporation (PBGC). According to Gillers (2019), “… the government insurance program (PBGC) that backstops these pensions has warned it expects to run out of money by 2025.”

68 For example, see DeWitt (2001) who writes in part:

Since a pair of 1938 Treasury Department Tax Rulings, and another in 1941, Social Security benefits have been explicitly excluded from federal income taxation. This changed for the first time with the passage of the 1983 Amendments to the Social Security Act. Beginning in 1984, a portion of Social Security benefits have been subject to federal income taxes.
various think tanks and politicians to modify the current promised Social Security benefits to one or more groups (e.g., see: Delorme and Vlasenko (2016)). It is not expected that these Social Security beneficiaries will have any legal recourse (e.g., see Monahan (2017)).

So, clearly other workers (including taxpayers) have suffered an adverse restructuring of their anticipated benefits when the counterparty was no longer willing and/or able to provide those anticipated retirement benefits. It seems that some Illinois’ public-sector employees are now approaching similar economic crossroads. Therefore, it seems appropriate to advocate for a constitutional amendment that mirrors the 2013 state law, signed by then-Governor Pat Quinn, which was subsequently struck down in 2015 by the Illinois Supreme Court. That law essentially stopped automatic compounded yearly cost-of-living increases for retirees, extended retirement ages for current state workers and limited the amount of salary used to calculate pension benefits – e.g., see: Pearson and Geiger (2015).69 These reform concepts – modifying cost-of-living adjustments, increasing retirement ages for younger workers and capping the maximum pensionable salary – would primarily affect the rate of future benefit accruals.

VI. C. 3. The Path towards a Constitutional Amendment

To amend the constitution, three-fifths of the state Senate and House must agree to place the measure on the ballot, which then would have to be approved by a majority of the voters. The earliest such a proposal could appear on the ballot is the fall of 2020. Via constitutional amendment, let’s reinstate the key points of the 2013 law, which (to reiterate) essentially stop automatic compounded yearly cost-of-living increases (at 3%) for retirees, extend retirement ages for current state workers and limit the amount of salary used to calculate pension benefits – primarily effecting the rate of future benefit accruals.

69 As reported by Pearson and Geiger (2015):

Employee unions sued, arguing that the state constitution holds that pension benefits amount to a contractual agreement and once they're bestowed, they cannot be "diminished or impaired." A circuit court judge in Springfield agreed with that assessment in November. State government appealed that decision to the Illinois Supreme Court, arguing that economic necessity forced curbing retirement benefits.

[T]he justices rejected that argument, saying the law clearly violated what's known as the pension protection clause in the 1970 Illinois Constitution.
A wide array of prominent individuals and apolitical organizations are now calling for pension reform to address the dire pension-funding situation, including former Mayor Rahm Emanuel, the Civic Federation and the Commercial Club of Chicago.

According to Spielman (2018a), then outgoing Mayor Rahm Emanuel asked of the City Council, “What kind of progressive, sustainable system guarantees retirees 3 percent annual compounded pay increases when inflation has been at basically zero and current employees have, at times, been furloughed, laid off or received 1 percent raises?” He went on to say, “A 3 percent compounded cost-of-living adjustment in an era of low inflation is not progressive and not sustainable. It made sense in 1970 when we had more workers than retirees and high inflation. But it does not make sense today.” And he added, that the “…mantle of progressivity must not just be more taxes on the wealthy…”

There are a number of additional proposals made by serious organizations. While space and time preclude an extensive listing here, let us innumerate a few of these organizations: the Civic Federation, Institute for Illinois’ Fiscal Sustainability, Taxpayers’ Federation of Illinois, and the Kearny Center for Pension Reform.

VII. Conclusions

It is time to give up the canard that simply raising taxes will solve the fiscal ills of Chicago, Cook County and Illinois. It is challenging to raise taxes in an environment where Illinois’ overall taxes are the third-highest in the country (and, specifically, its property taxes are the second-highest in the country and its sales taxes are the seventh-highest in the country). Much of the state’s poor fiscal condition is attributable to the unfunded pension liabilities of its various governmental entities (e.g., the state’s official estimate of its unfunded pension liability is $131 billion, while certain analysts’ estimate it is $446 billion). So any sustainable resolution must involve the reform of the state’s public-sector pensions. As some context, consider that Illinois’ public-sector employees are among the highest paid in the nation and that their retirement plans are among the most generous. This paper proposes three bold solutions:

---

70 Even with a constitutional amendment, pension reform is likely to face serious legal challenges.

71 I have not included here calls to end the fraud and waste associated with state and local politics. This is not because these items do not exist. They certainly do (e.g., see: Nowlan and Johnson (2014)) – one merely has to look at the long line of imprisoned Illinois governors to gain some sense of the problem. Similarly, I have not included calls to improve the efficiency of government-provided services. This is not because there are not efficiencies to be gained; there certainly are (e.g., see: Clark, et al. (2019)). Instead, the proposals contained herein are intended to stem some of the worst pension-related abuses and to improve the efficiencies of providing those pension benefits.
1. All new public-sector employees are to be enrolled in defined-contribution pension plans — resulting in the gradual phase-out of the current defined-benefit system. (Because this would abandon the current pay-as-you-go system, additional borrowing would be needed to bridge the transition.)

2. All new sources of revenue (e.g., the further legalization of casino gaming, sports betting and/or marijuana, a graduated income tax, an income tax on retirement benefits, etc.) are to be dedicated to the pay-down of unfunded pension benefits. The same is to be said of any cost-cutting mechanism (e.g., the consolidation of the state’s huge number of local governmental entities) and/or the monetization of the state’s assets (e.g., the sale of the Illinois Tollway Authority, Illinois Lottery, etc.).

3. The first two items are likely to prove to be fiscally insufficient; therefore, a constitutional amendment is needed to moderately reduce the future benefits (of the current defined-benefit pension plans) of the existing public-sector employees (and their beneficiaries) and retirees — consistent with 2013 law (stop automatic compounded yearly cost-of-living increases (at 3%) for retirees, extend retirement ages for current state workers and limit the amount of salary used to calculate pension benefits), which was subsequently struck down by the Illinois Supreme Court as unconstitutional.

Without some mechanism to coral these burgeoning unfunded pension liabilities, they will continue to have an adverse impact on property values (due to increased property taxes, uncertainty about how these unfunded pension liabilities are to be ultimately resolved, and the crowding out of public-sector services). Over the last ten years, the Chicago area has seen the lowest home appreciation rate (essentially, tied with New York at 1.6% per annum) of any major metropolitan area in the country. Moreover, that appreciation rate failed to keep pace with the rate of inflation, such that homeowners experienced a real (i.e., inflation-adjusted) decline in home values. And, if the rate of Chicago-area home appreciation had kept pace with the national average, its home values would be 50% higher than today.

Now that the Democrats control the governorship as well as both of Illinois’ legislative bodies, it would seem an appropriate time to consider such a “grand bargain.” And while a number of proposals have been floated, few seem to get to the essence of the matter: political leaders’ unwillingness to fully fund the defined-benefit pension plans of its public-sector employees has led to catastrophic fiscal conditions. Hopefully, the proposals indicate here are sufficiently bold that Illinois’ history of population and job loss is reversed.
VIII. References


Andrzejewski, Adam, “Mapping the Illinois $100,000 Club: 94,000 Public Employees & Retirees Cost Taxpayers $12 Billion,” Forbes, October 2018: Mapping the Illinois $100,000 Club: 94,000 Public Employees & Retirees Cost Taxpayers $12 Billion


Beach, Emily, “Do You Pay Taxes on Pensions From the State You Retired In or the State You're Living In?,” Zacks, (undated): Do You Pay Taxes on Pensions From the State You Retired In or the State You're Living In?


Burypensions Blog, “Most Exorbitant Public Employee Pensions,” August 14, 2016: Most Exorbitant Public Employee Pensions


Lentino, Chris, “Chicago Aldermen Propose $33 per Employee ‘Head Tax’ on City Employers, Illinois Policy Institute, April 24, 2017: Chicago Aldermen Propose $33 per Employee ‘Head Tax’ on City Employers


Lu, Wei and Alexandre Tanzi, “In America’s Most Unequal City, Top Households Rake in $663,000,” Bloomberg, November 21, 2019: In America’s Most Unequal City


McCann, Adam, “Best- and Worst-Run Cities in America,” WalletHub, July 1, 2019: Best- and Worst-Run Cities in America

Mengle, Rocky, “14 States That Won’t Tax Your Pension,” Kiplinger, February 5, 2019: 14 States That Won’t Tax Your Pension


Monahan, Amy B., “When a Promise is Not a Promise: Chicago-Style Pensions,” UCLA Law Review, February, 2017: When a Promise is Not a Promise: Chicago-Style Pensions


In re Pension Reform Litigation, 23 N.E.3d 1 (Ill. 2015).


Raice, Shayndi and Heather Gillers, “Chicago Mayor Searches for Answers to Gaping Budget Hole,” Wall Street Journal, August 29, 2019: Chicago Mayor Searches for Answers to Gaping Budget Hole

Renn, Aaron M., “Midwest Success Stories: These 10 Cities Are Blooming, Not Rusting,” Manhattan Institute, November 2019: [Midwest Success Stories](#)

Reyes, Cecilia and Patrick M. O’Connell, “There’s a Lot of Talk about an ‘Illinois Exodus.’ We Took a Closer Look at the Reality Behind the Chatter,” *Chicago Tribune*, September 25, 2019: [There’s a Lot of Talk about an Illinois Exodus](#)

Rodkin, Dennis, “Local Home Prices Growing at Half Last Year’s Modest Rate,” *Crain’s Chicago Business*, August 27, 2019: [Local Home Prices Growing at Half Last Year’s Modest Rate](#)


Schuster, Adam, “Cost of Illinois’ Education Bureaucracy Crowds Out Classroom Spending,” Illinois Policy Institute, August 8, 2019: [Cost of Illinois’ Education Bureaucracy Crowds Out Classroom Spending](#)

Schuster, Adam, “Nearly 40% of Education Spending Consumed by Pension Costs,” Illinois Policy Institute, August 13, 2019: [Nearly 40% of Education Spending Consumed by Pension Costs](#)


Scism, Leslie, “Your Pension Check May Soon Be Coming From an Insurance Company,” *Wall Street Journal*, March 12, 2017: [Your Pension Check May Soon Be Coming From an Insurance Company](#)

Singh, Shruti, “Chicago Looks for Revenue with Fewer Residents Footing Bill,” Bloomberg, September 17, 2019: [Chicago Looks for Revenue with Fewer Residents Footing Bill](#)