THE FUNDED STATUS OF US PUBLIC PENSION SYSTEMS

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STRATEGIC INVESTMENT SOLUTIONS, INC.

333 Bush Street, Suite 2000
San Francisco, CA 94104
(415) 362-3484

Funded Status Summary – US Public Plans

Introduction

The purpose of this analysis is to produce an accurate picture of the overall funded status of US public retirement systems and to project over the next several years how this funded status may be expected to change under certain scenarios. While an aggregate view is useful, it should be noted that funding, investment, and benefit policies are set *locally*.

The huge decline in the market value of US pension funds resulting from the extraordinary market turmoil, recession, and bear market of 2008 has put many systems in a precarious position with respect to having sufficient assets available to fund their growing liabilities.

In addition, some retirement systems have not received their full required employer contributions over many years, thereby worsening their funded status.

Reversing this trend will require a combination of unpalatable options: increased contributions, requiring a diversion of resources from other uses; reduced benefits to certain plan participants, which can in practice be extremely difficult to implement; and potentially reduced public services.

Continuing deficits can also be expected to put greater strain on the already stretched US public financing system, with implications for all US residents.

Methodology and Assumptions

- Actuarial data for the 25 largest defined benefit public pension plans (the "Top 25") was taken from the most recently available Consolidated Annual Financial Report (CAFR) for each system. The Actuarial Accrued Liability (AAR) for the plan was used to represent the plan's "liabilities". Plan asset market values were taken from the CAFR or, in some cases, directly from the plans if more recent data was available.
- The Top 25 were used as a sample representing the overall US public pension system. Using recent reported market values for the Top 25 plans and a 2007 survey of US public retirement systems conducted by the US Census Department, total US public retirement system assets ($3.38 trillion) are about double the total assets of the Top 25 plans ($1.66 trillion). As a result, actuarial accrued liabilities were increased by a factor of 2X, in line with the market value adjustment.
- The funded status of the total of US public retirement systems is assumed to be the same as that of the Top 25. This is, of course, debatable. On the asset side of this equation, we would suggest that the risk-adjusted returns of the Top 25 are likely to be at least, or better than, average given their access to superior investment talent, deeper resources, and economies of scale with respect to reducing the percentage cost of managing plan assets.
- The most recent plan asset market values were updated to 12/31/09 using approximate asset mixes for each plan and a weighted average of public equity and fixed income index returns. Reported liabilities (AAL) were updated to 12/31/09 assuming a 5% annual growth rate for each plan since the last actuarial valuation date.
- For projecting liabilities, we assumed a 5% annual growth rate. For projecting the market value of assets, we used the current actuarial assumed return for each plan (8% for the median and average of the Top 25).
- We assume plans are, in aggregate, cash-flow-neutral: contributions equal withdrawals over the projection period. Whether the total retirement system is in a cash-flow-positive or negative state would have a significant impact on future results.
- Only defined benefit public pension plans were included in this analysis. It excludes dedicated OPEB plans.

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	1 Estimated Current Market Value of Assets (1)	2 Reported Actuarial Value of Assets (2)	3 Reported Actuarial Accrued Liability (2)	4 = (3 - 2) Unfunded Actuarial Liab (Surplus) / Deficit	5 = (2 / 3) Funding Ratio (%) (Actuarial Asset Value)	Using Estimated Updated Liability and Mkt Val of Assets (est 12/31/2009) 6 Estimated AAL	7 = (6 - 1) Est UAL Mkt Val Assets	8 = (1 / 6) Est Funding Ratio (%)
TOP 25 PUBLIC FDS	$1,802.9	$1,919.7	$2,179.5	$259.8	88.1%	$2,395.4	$592.5	75.3%
US PUBLIC FDS (3)	$3,605.8	$3,839.4	$4,359.0	$519.6	88.1%	$4,790.8	$1,185.0	75.3%

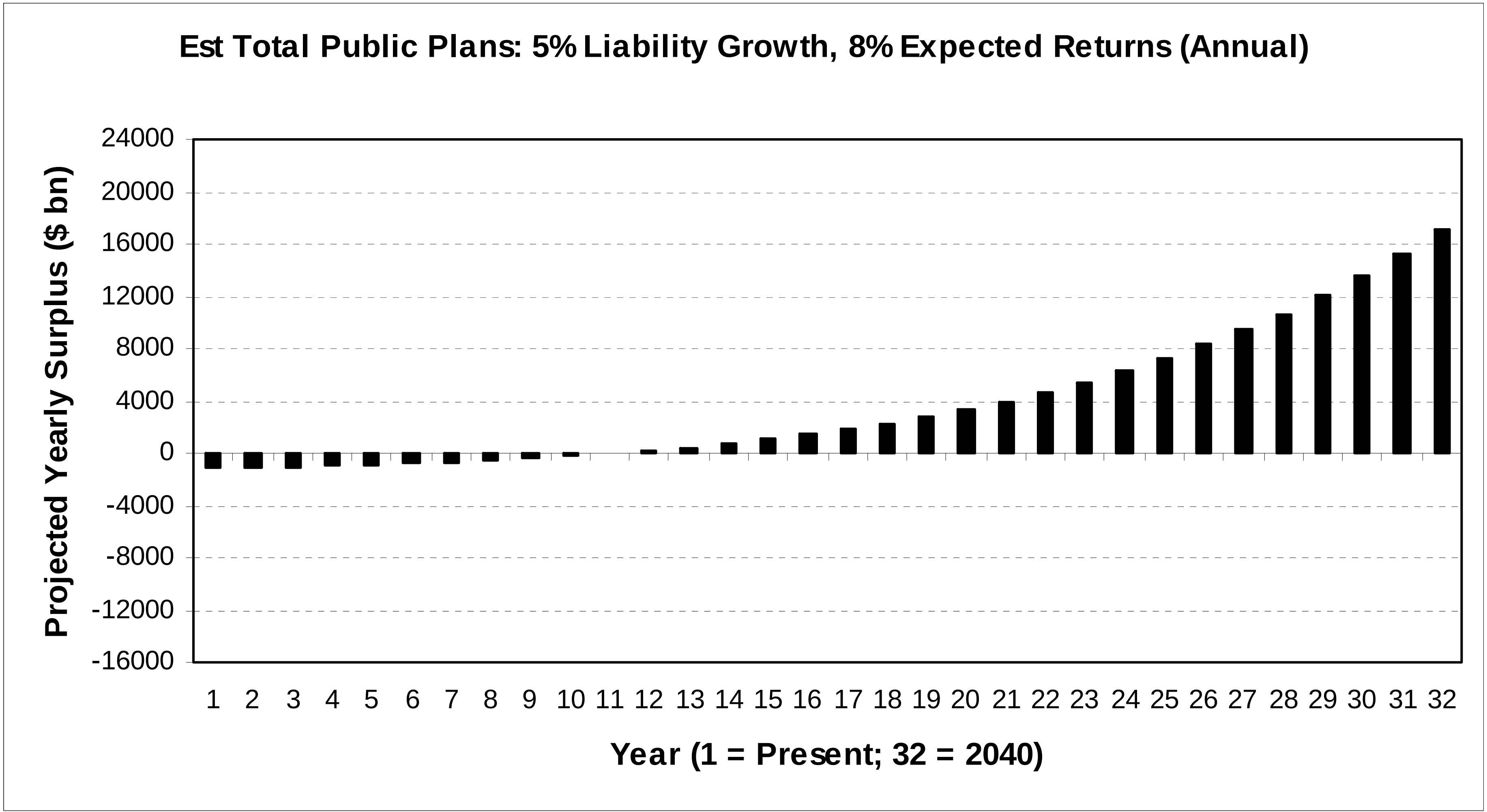
(1) Estimated 12/31/2009 market values, based on the most recent reported market value of assets, updated using each Fund's approximate Equity/Bond asset allocation and an asset allocation-weighted average of the S&P 500 and 10-year UST Bill index returns; Sources: SIS; individual plan sponsors; Pensions & Investments

(2) Source: individual plan sponsors

(3) 2X multiplier factor used to estimate total US public pension system (based on total Top 25 assets of $1.66 trn and US retirement system assets of $3.38 trn a/o 2007-08). Source for Top 25 assets: SIS and plan sponsors. Source for US retirement system assets: *US Census Dept Survey of State & Local Retirement Systems, 2006-2007* .

- Based on the reported actuarial value of assets and liabilities, which incorporates varying smoothing techniques for each fund, the unfunded liability (e.g. deficit) totals $259.8 billion for the Top 25. The funding ratio (assets / liabilities) is 88.1%.
- Using estimates of current market values and actuarial liabilities for each system, this deficit grows to $592.5 billion, or 75.3% funding, as market values have plunged over the past two years.
- The estimated total US retirement system deficit equals over $1.2 *trillion* (see next page for assumptions).

Funded Status Projections – US Public Plans



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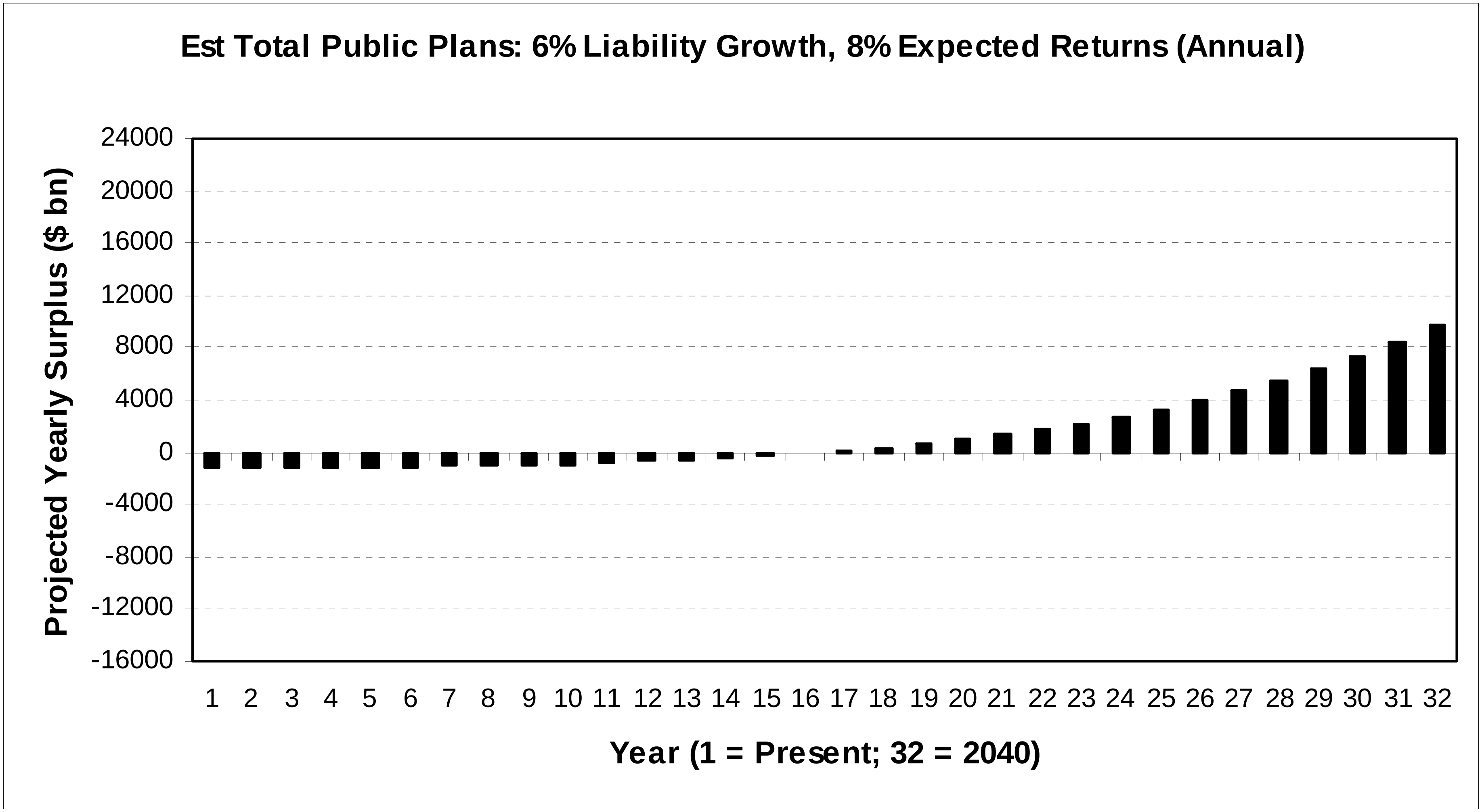

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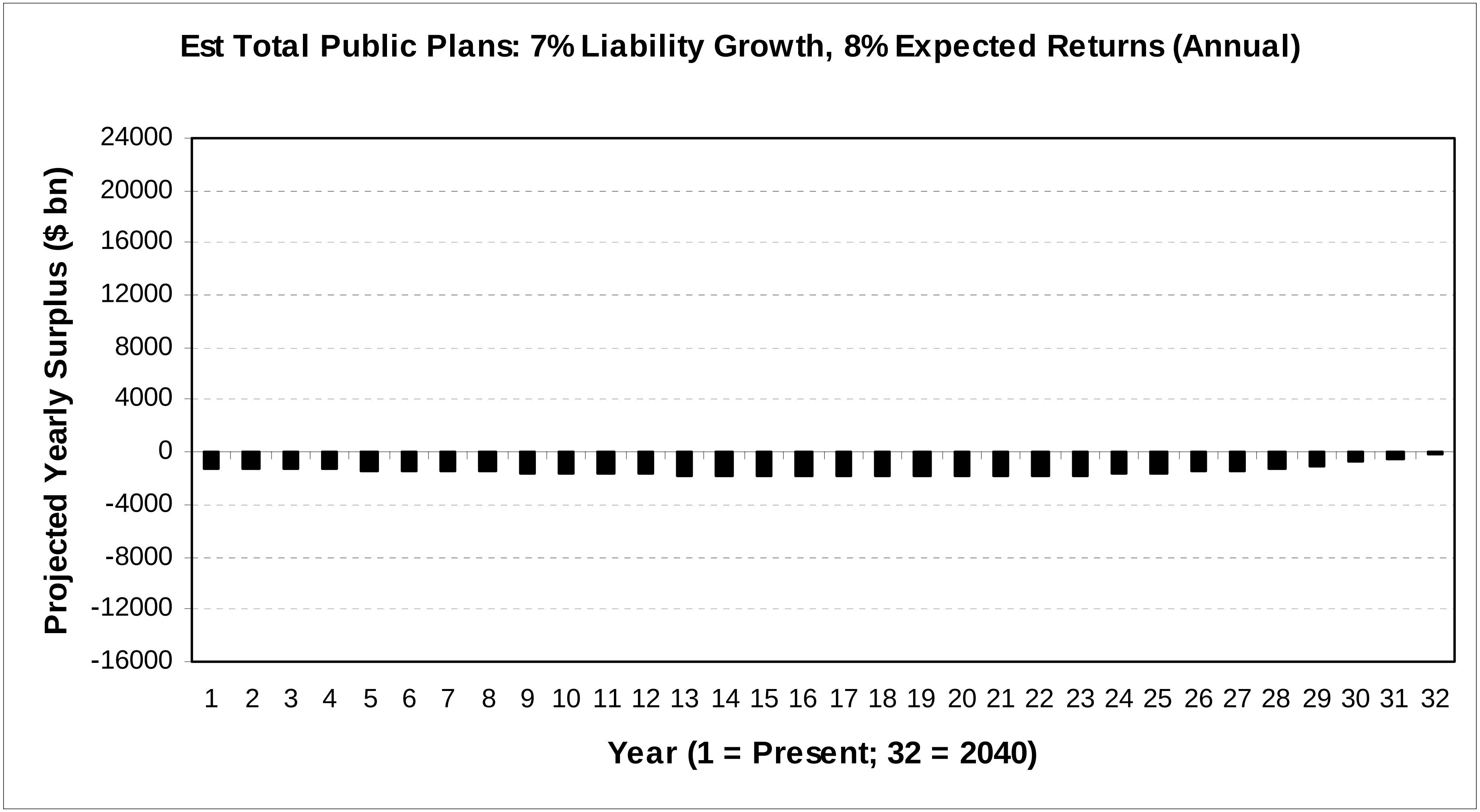

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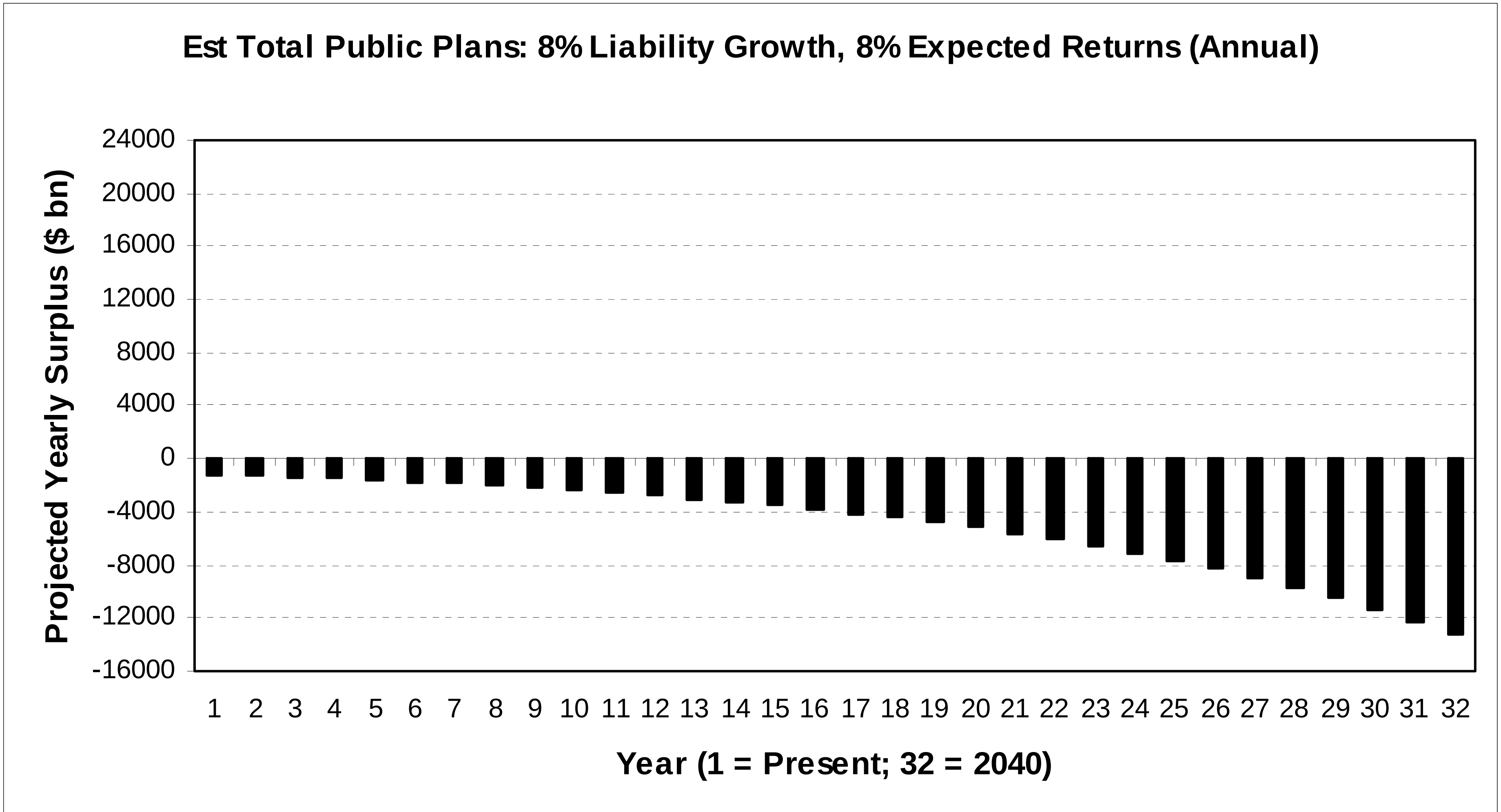

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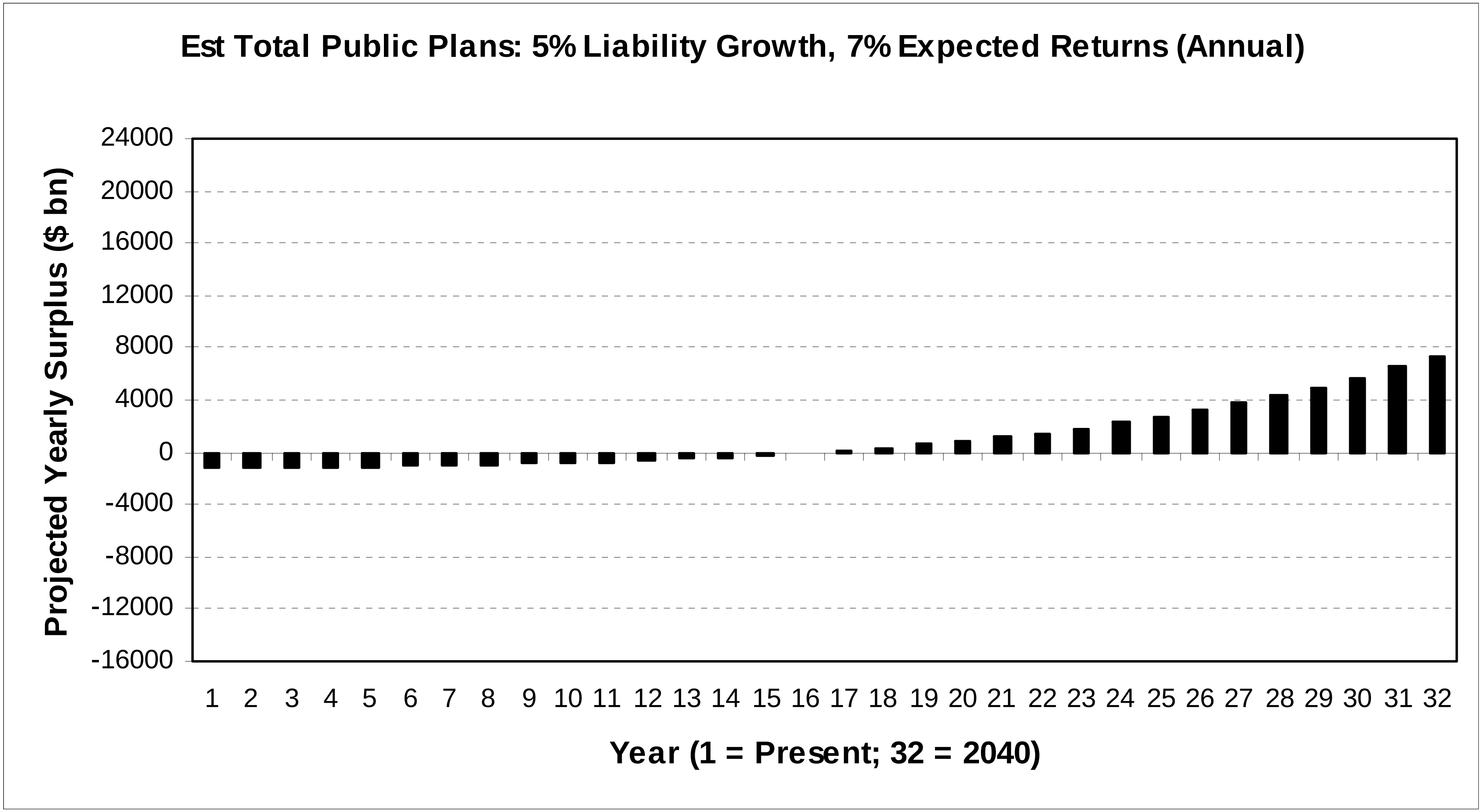

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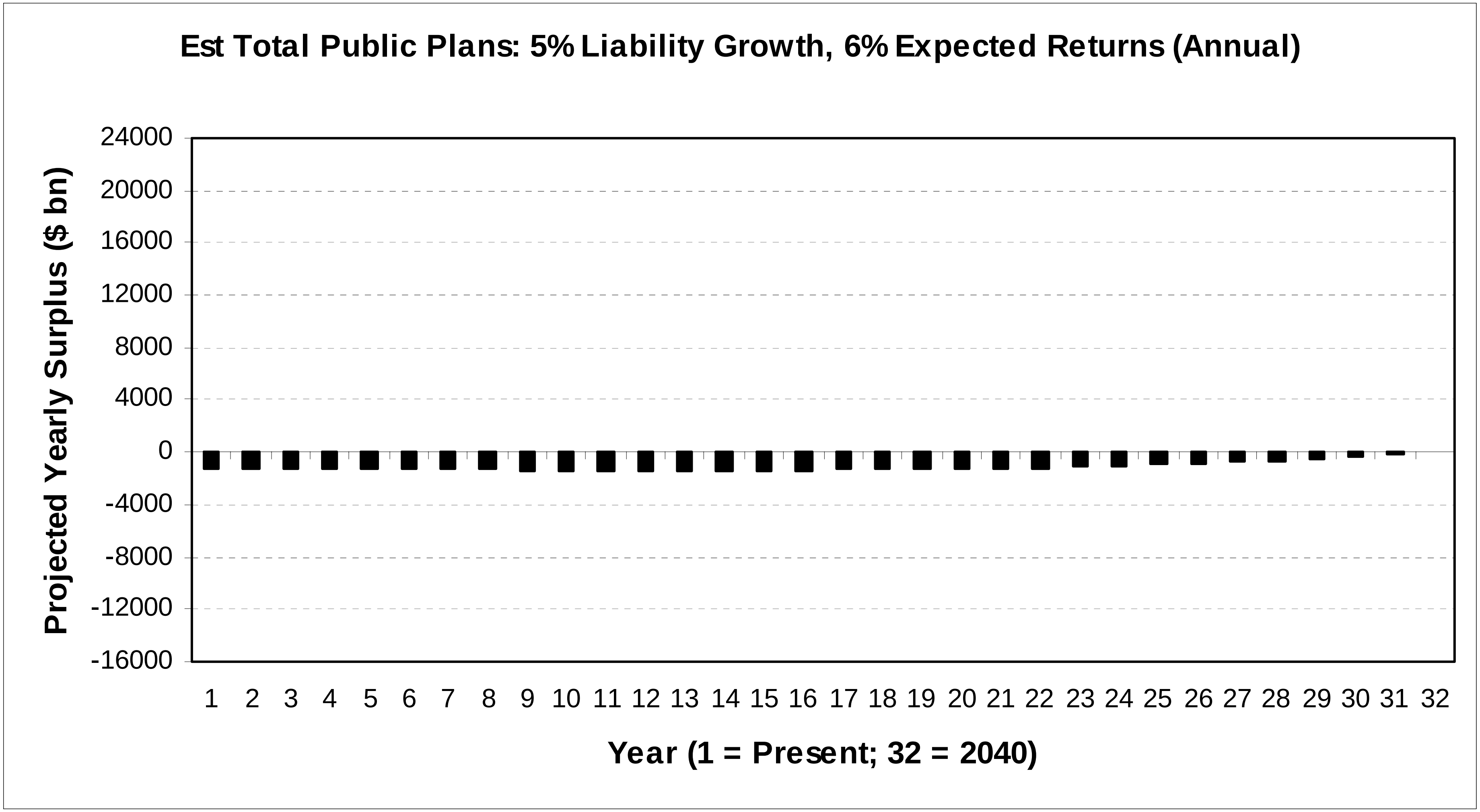

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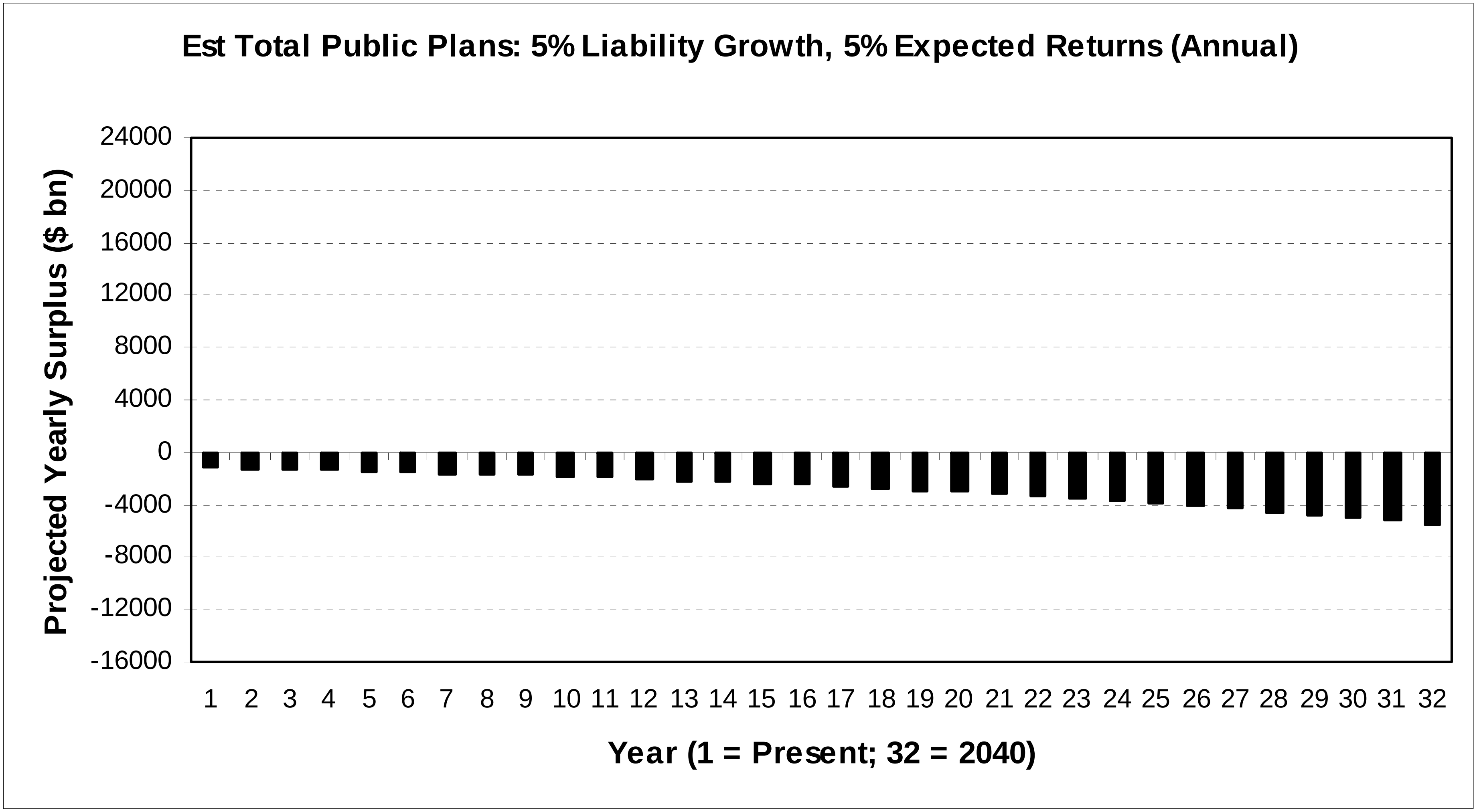

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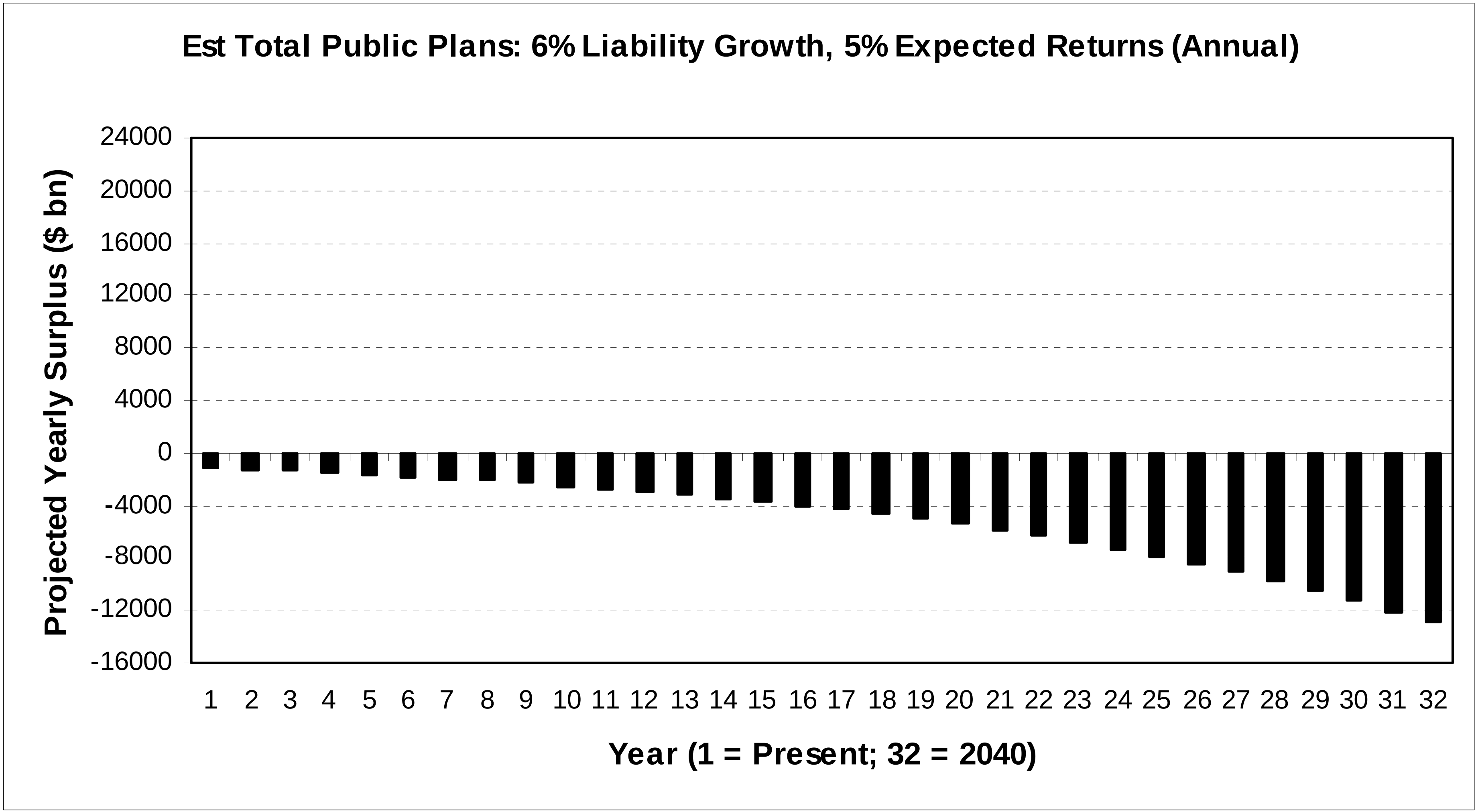

Observations

- Several permutations of liability growth and expected returns were used to project annual funding surplus/deficit to 2040. These were in no way meant to fully incorporate all possible outcomes.
- Based on these projections, the current deficit will switch to surplus as long as, in aggregate:
  - Liabilities grow at an annual rate of less than 6% if assets grow at least 8%
  - Assets grow more than 7% per year if liabilities grow 5% per year or less
- If the systems are now, or become, cash flow negative, assets would need to return greater than 7%, or liabilities grow by less than 6%, to avoid large and growing future deficits.
- This analysis does not reflect the fact that each individual retirement system faces a unique funding circumstance. Well-funded plans can expect to maintain adequate funding at a manageable and sustainable level of contributions and with conservative expected investment returns. For poorly funded systems, however, assets will need to grow at much more than 8%, or liabilities much less than 5%, to avoid continued and growing deficits. Furthermore, the extent to which employer contributions are discretionary, and therefore can be avoided or deferred, vary from system to system.
- This analysis does not factor in changes to contribution rates and/or benefits that would occur if a surplus is achieved. If a retirement system reaches surplus, required contributions would drop, resulting in reduced or reversed surplus growth, and benefits would likely be increased.

Comment

SIS is an independent non-discretionary investment consultant. We assist our clients, many of which include large public pension funds, with making sound *investment* decisions.

SIS does not provide advice to plan fiduciaries on funding or benefit policy.

This analysis should in no way be construed as such.