



Hibernation: Alternative or Complement to Annuity Purchases?

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October 11, 2018

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All data presented are as of June 30, 2018, unless otherwise noted.

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ABOUT NISA

24
YEARS
experience with
liability-based
strategies

Clients include
28 out of **50**
of the largest U.S.
corporate
retirement plans

\$310
BILLION
in fixed income,
equity, and
derivatives notional
under management

Over
\$1 TRILLION
total liabilities of
our pension clients

Assets under management (AUM) data represents \$180 billion of physical assets and \$130 billion in derivatives notional value as of 6/30/18. Largest U.S. corporate retirement plans based on data from *Pensions & Investments* online, as of December 31, 2017. Total client pension liability estimate based on NISA calculations and the latest available asset data from Standard and Poor's Money Market Directories. NISA's calculations incorporate NISA's Pension Surplus Risk Index, or PSRX®, and uses the average funded status estimate of the 100 largest US corporate defined benefit pension plans, as determined by NISA based on publicly available information.

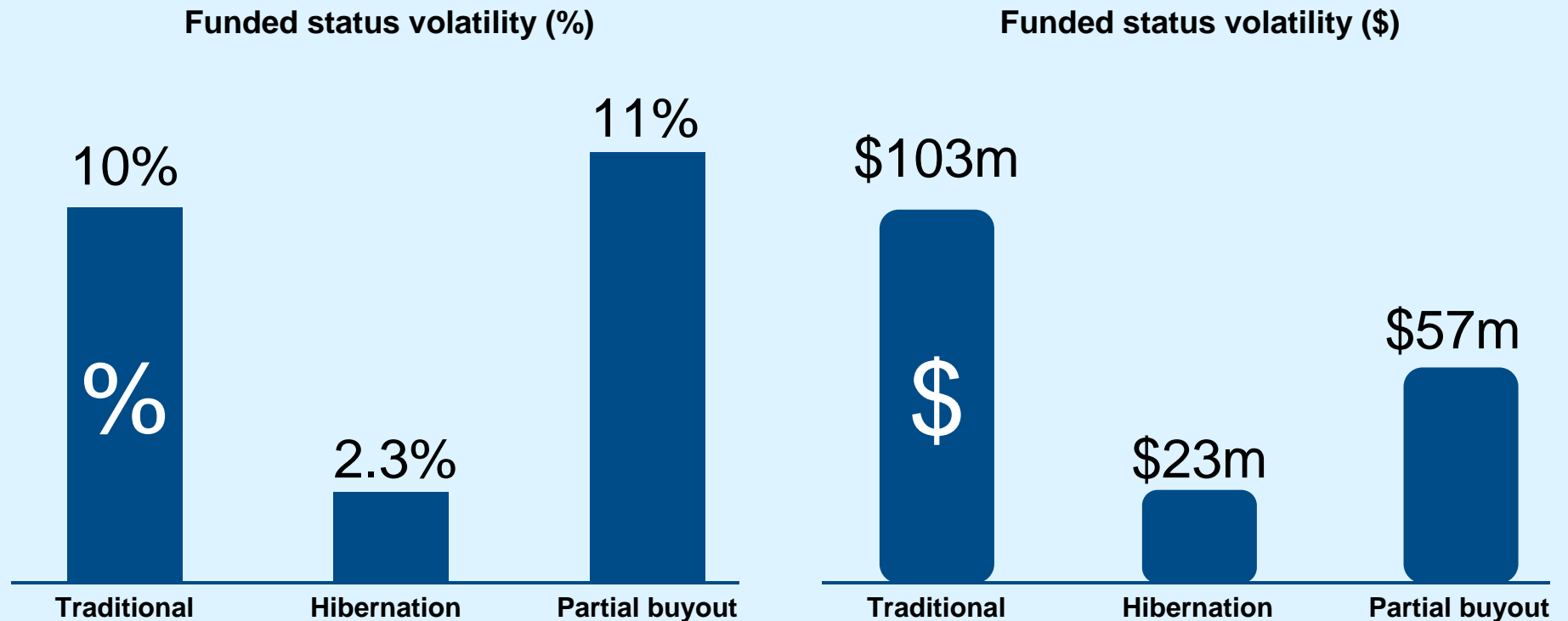
AGENDA

Objective: Examine the current thinking around annuity buyout transactions.

- Risks – Can plans manage risk just as effectively through a hibernation portfolio?
- Costs – What are the cost differences between annuity buyout and hibernation portfolios?
- Enterprise – How do annuity buyouts or hibernation portfolios impact enterprise risk and firm value?

MANAGING ASSET ALLOCATION

True or False: Pensions are inherently risky and only buyouts can reduce risk to reasonable levels.



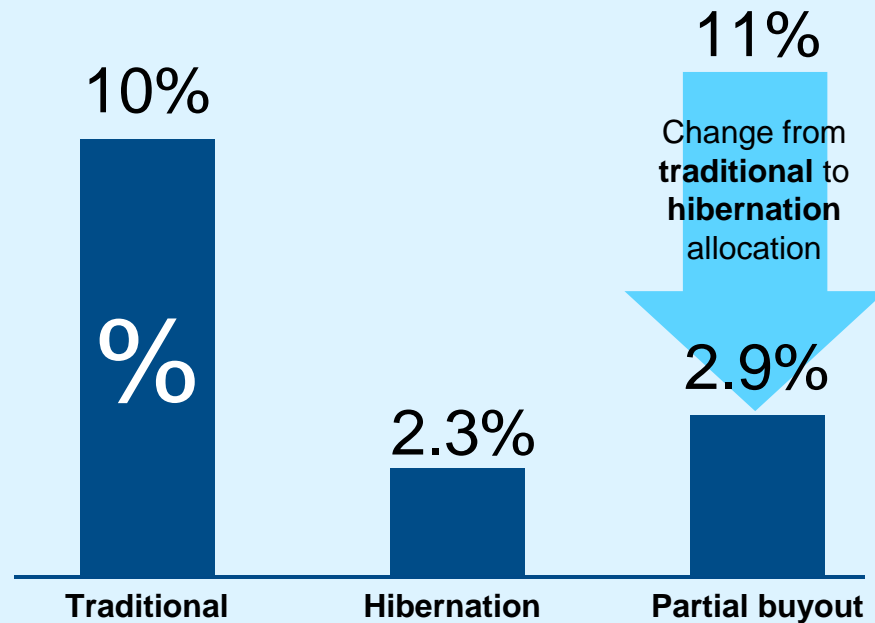
NISA calculations based on data from Bloomberg, Bloomberg Barclays, FTSE, and JP Morgan as of 6/30/18. Funded status volatility represents an annualized one standard deviation range. Based on illustrative plans that are 90% funded on a FTSE AA basis. Traditional and hibernation strategies are based on a \$1 billion, 12-year duration liability. Hibernation allocation based on 90% fixed income allocation comprised of credit and Treasury bonds and a 10% global equity allocation. Partial buyout strategy based on a \$500 million, 15-year duration liability.

MANAGING ASSET ALLOCATION

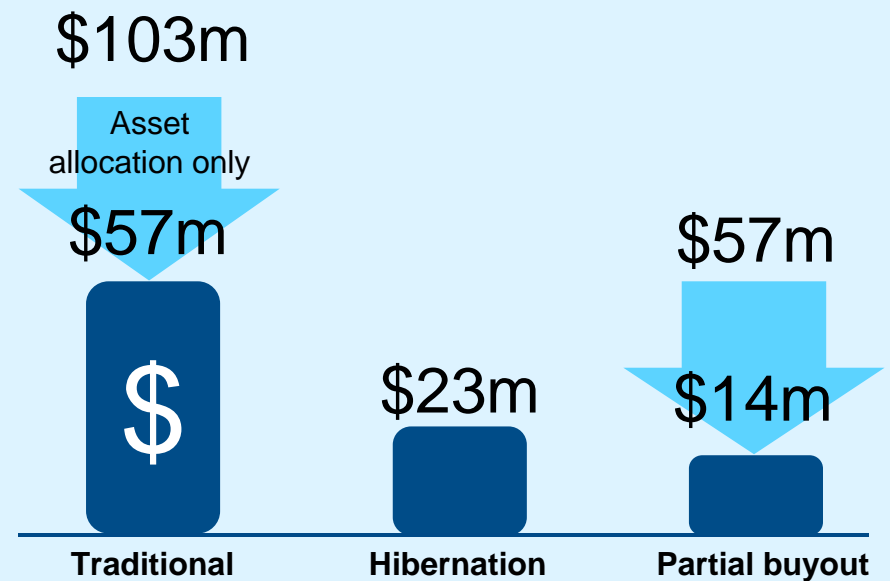
~~False: Pensions are inherently risky and only buyouts can reduce risk to reasonable levels.~~

Plan sponsors can reduce volatility without a buyout.

Funded status volatility (%)



Funded status volatility (\$)



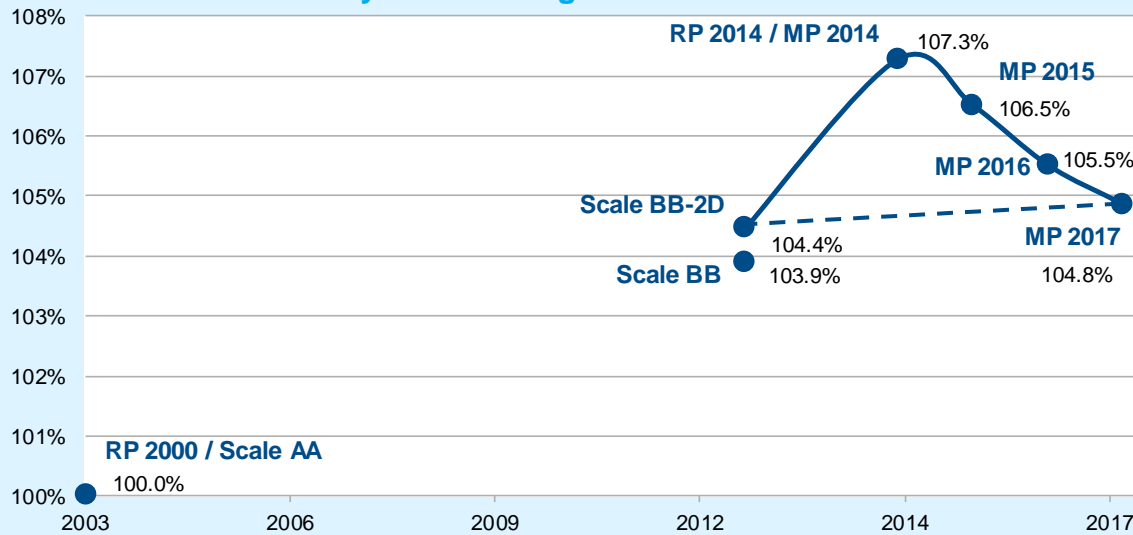
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IMPACT OF LONGEVITY RISK

~~False: Longevity risk is material and represents only downside risk for plan sponsors.~~

Longevity risk is relatively modest and symmetrical.

Effect of Mortality Table Changes on Illustrative Plan



	PBO	Change
RP2000 / Scale AA	100.0%	-
RP 2000 / Scale BB	103.9%	3.9%
RP 2000 / Scale BB-2D	104.4%	0.6%
RP 2014 / MP 2014	107.3%	2.8%
RP 2014 / MP 2015	106.5%	-0.8%
RP 2014 / MP 2016	105.5%	-1.0%
RP 2014 / MP 2017	104.8%	-0.7%

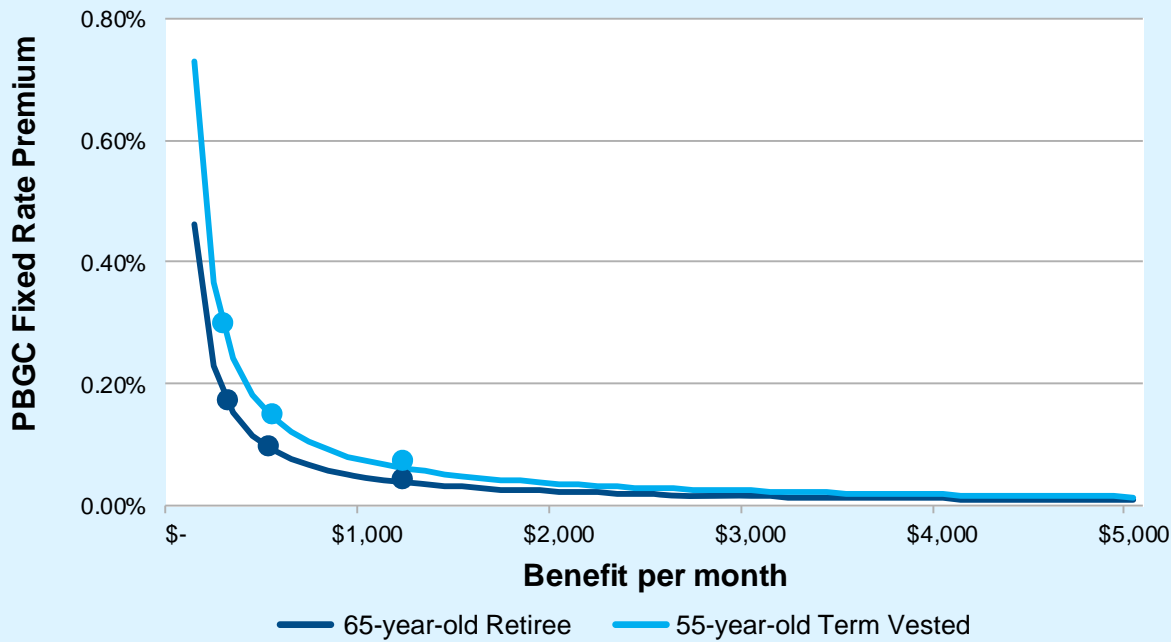
Average Annual Change Since 2003 0.35%

Average Annual Change Since 2012 0.08%

Source: NISA calculations and the Society of Actuaries. Represents data for an illustrative plan with a duration of 12 years as of 10/31/2017.

SMALL BALANCE COSTS

True or False: Small balance plan transfers can be beneficial.



PBGC Fixed Rate Premium

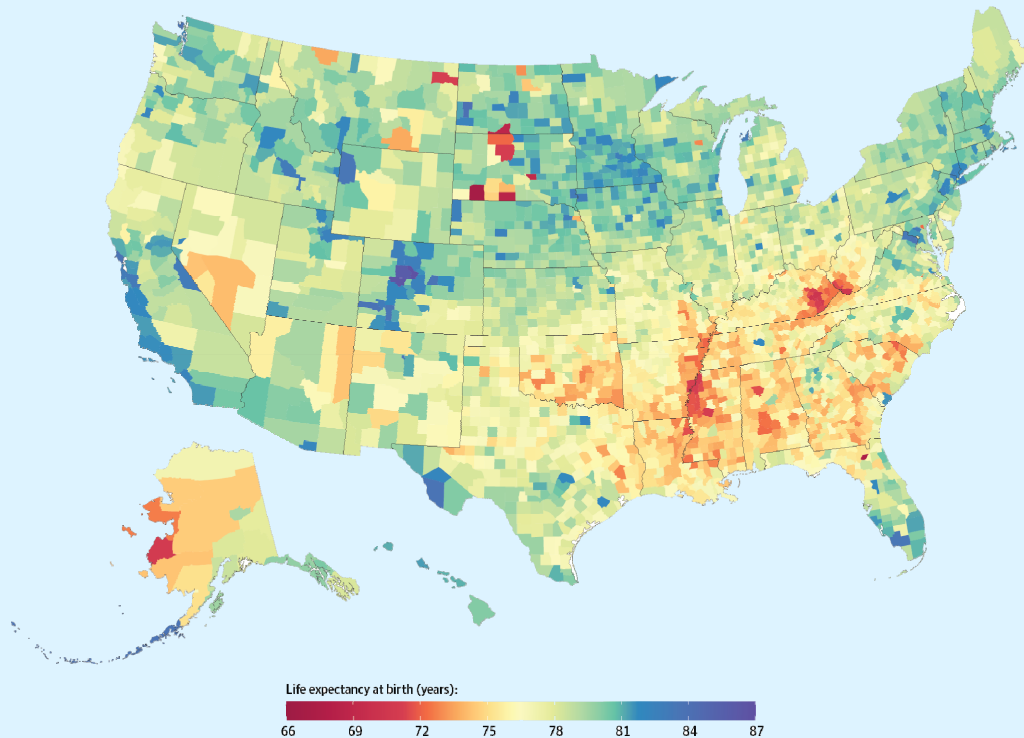
Monthly Benefit	Retiree	Term Vested
\$250	0.18%	0.29%
\$500	0.09%	0.15%
\$1,000	0.05%	0.07%

Source: PBGC Fixed Rate Premium is the annual premium divided by the present value of the liability.

SMALL BALANCE COSTS

~~True or False: Small balance plan transfers can be beneficial.~~

**True: Small balance plan transfers can be beneficial, but...
...it is important to ensure that the transaction is priced correctly.**



Small balance buyouts may have noticeably different mortality rates:

In the UK, Club Vita noted that the smallest balance participants have a ~10% smaller liability value than the largest balance participants, and a 4% smaller liability value than the “average” participant due to differences in mortality rates.*

*Source: Club Vita.
Map image courtesy of JAMA Network.

PUTTING IT TOGETHER

~~False: Plan sponsors face many additional costs that insurance companies do not face.~~

Plan sponsors and insurers face many of the same costs.

Ongoing Costs	Plan Sponsors	Insurers
Plan Management Costs	✓	✓
Downgrades and Defaults	✓	✓
Mortality	✓	✓
Fixed Rate PBGC Premiums	✓	✗
Capital Requirements	✗	✓

STOCK RETURNS AND BUYOUT TRANSACTIONS

True or False: A company's stock price can be materially impacted by a buyout.

Company Name	Announcement Date	PBO Reduction (% Market Cap)	Transaction PBO Size (\$ Million)	1 Day Stock Return vs. S&P 500	1 Week Stock Return vs. S&P 500	1 Month Stock Return vs. S&P 500
General Motors	06/01/2012	72%	25,100	1.60%	-1.97%	-12.31%
Verizon	10/17/2012	6%	7,500	2.61%	-0.94%	-9.29%
Motorola	09/25/2014	19%	3,100	2.33%	3.44%	3.16%
Bristol-Myers Squibb	09/30/2014	2%	1,400	0.75%	-1.94%	-0.76%
TRW	12/16/2014	4%	440	0.65%	-6.43%	-0.93%
NCR	12/17/2014	4%	160	-1.22%	2.56%	-9.77%
Timken	01/22/2015	15%	600	-0.24%	2.76%	2.94%
Kimberly-Clark	02/23/2015	6%	2,500	0.06%	2.47%	1.47%
Lincoln Electric	08/19/2015	9%	425	-1.16%	2.34%	4.89%
West Pharmaceutical Services	09/10/2015	3%	140	0.97%	-0.45%	-0.41%
Philips	10/01/2015	4%	1,100	0.65%	-0.93%	-1.48%
J.C. Penney	10/02/2015	29%	838	5.57%	0.79%	2.30%
Timken	11/20/2015	17%	475	1.33%	-0.14%	-1.58%
PPG Industries	06/27/2016	6%	1,600	0.10%	6.42%	0.07%
WestRock	09/09/2016	20%	2,500	-1.08%	4.84%	-3.95%
United Technologies	10/06/2016	1%	775	-1.15%	2.18%	-0.82%
Sears	05/23/2017	61%	515	-1.08%	-0.20%	5.96%
Accenture	06/23/2017	1%	1,000	0.38%	-0.61%	2.66%
Hartford Financial Services Group	06/26/2017	8%	1,600	1.08%	0.67%	1.04%
Ball Corporation	08/22/2017	1%	220	-0.59%	-1.55%	0.38%
Sears	08/24/2017	56%	512	-0.03%	1.33%	3.85%
International Paper	10/02/2017	5%	1,300	0.60%	-6.70%	-15.34%
CBS Corporation	11/02/2017	4%	800	1.41%	-3.88%	-20.21%
NCR	11/03/2017	5%	190	-1.59%	-0.94%	-5.62%
Molson Coors Brewing Company	12/01/2017	5%	900	1.74%	0.33%	1.37%
FedEx	05/08/2018	9%	6,000	-0.06%	-4.10%	-1.18%

Average: 0.52% **-0.03%** **-2.06%**
Median: 0.49% **-0.17%** **-0.59%**

Source: Bloomberg and NISA calculations based on publicly available information. Listed transactions represent large and noteworthy pension annuity buyouts since June 2012 as reasonably determined by NISA. Transaction announcement date represents the date when the news of the transaction was first released by one of the entities involved or when it was first reported by the media. Plan sponsor pension benefit obligation data and funded status are as of the most recent reporting period available preceding the transaction. For the stock return comparison, the stock of the plan sponsor is compared to the S&P 500 and the relevant (or most appropriate) S&P 500 sector.

STOCK RETURNS AND BUYOUT TRANSACTIONS

False: A company's stock price can be materially impacted by a buyout.

Data is inconclusive, but logic would indicate it is small.

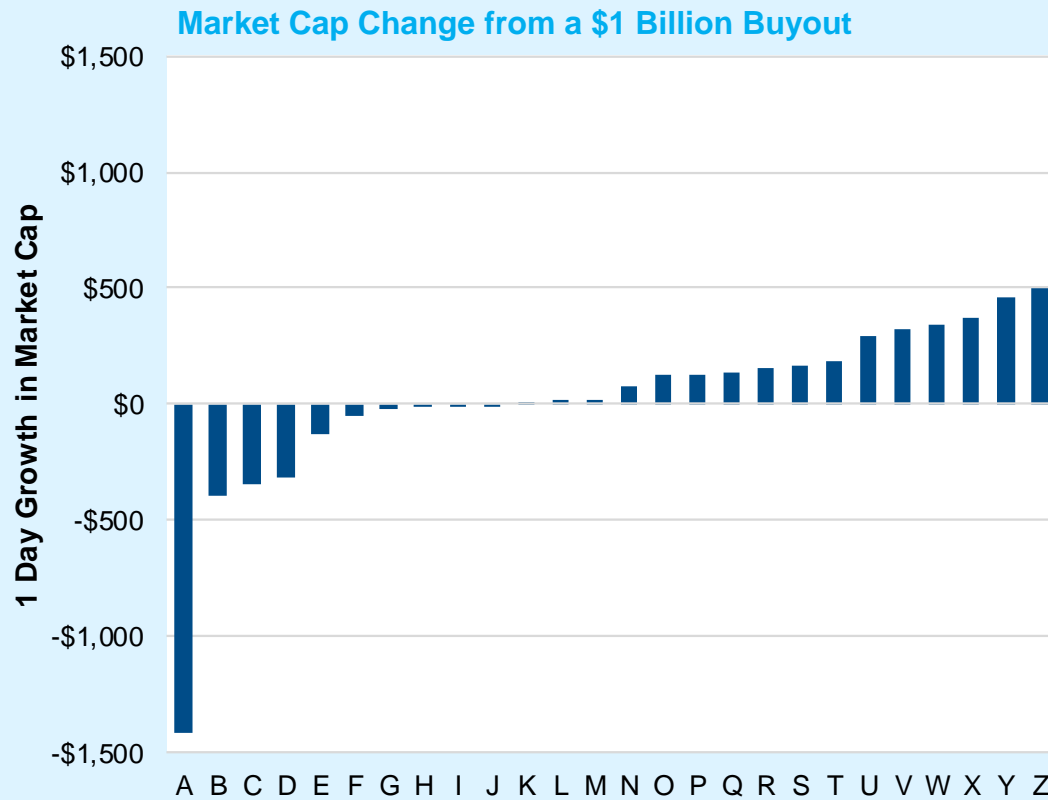
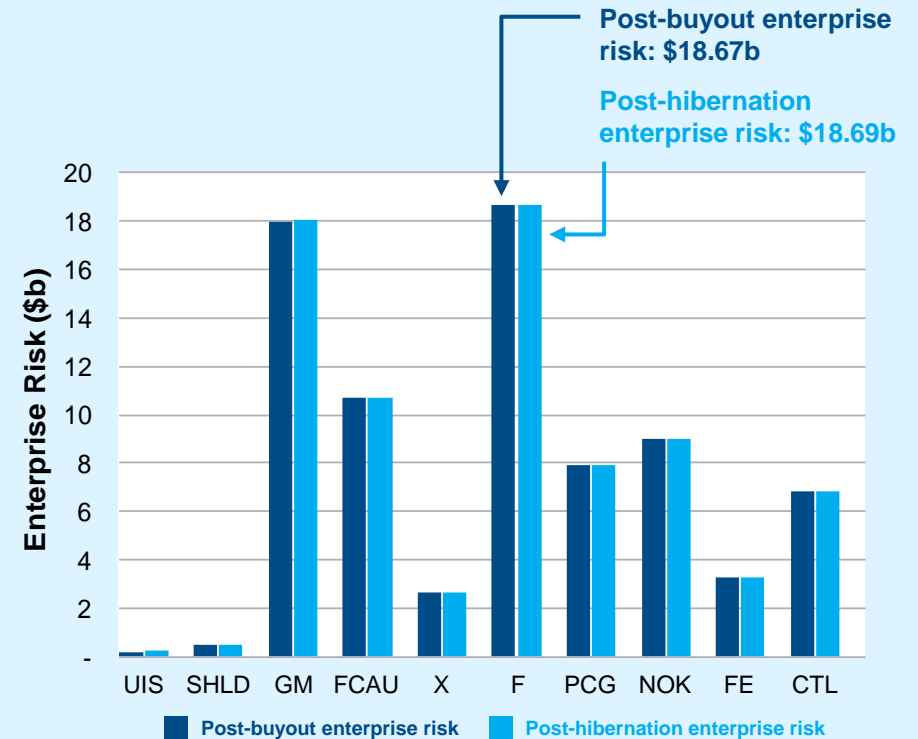
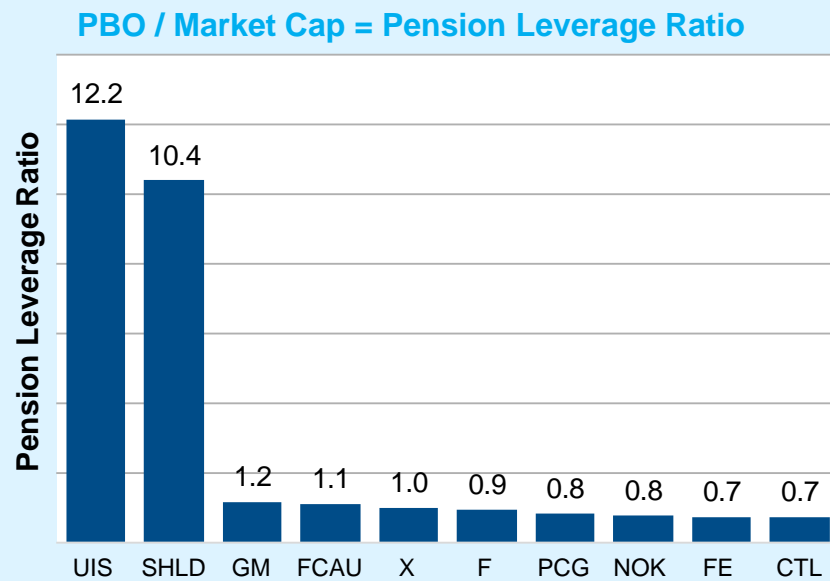


Chart reflects the change in market cap for the prior list of companies on a normalized \$1 billion dollar buyout.

ENTERPRISE VALUE

False: ~~Hibernation portfolios do not reduce enterprise risk.~~

Hibernation portfolios and annuity buyouts result in the same level of enterprise risk – even for pension levered firms.



CONTROL YOUR DESTINY

Life: Control your destiny or someone else will!

Pensions: Control your destiny or market sentiment will!

- Market Participants only know what you share with them. Shareholders and analysts only know the pension is under control if you tell them.
- Communicating de-risking strategies to shareholders and why they are important shifts the conversation from reactive to proactive.
- **Buyouts use press releases; so should material de-riskings and hibernation portfolios.**

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