

# INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

## Investment Decisions in DC Pension Plans

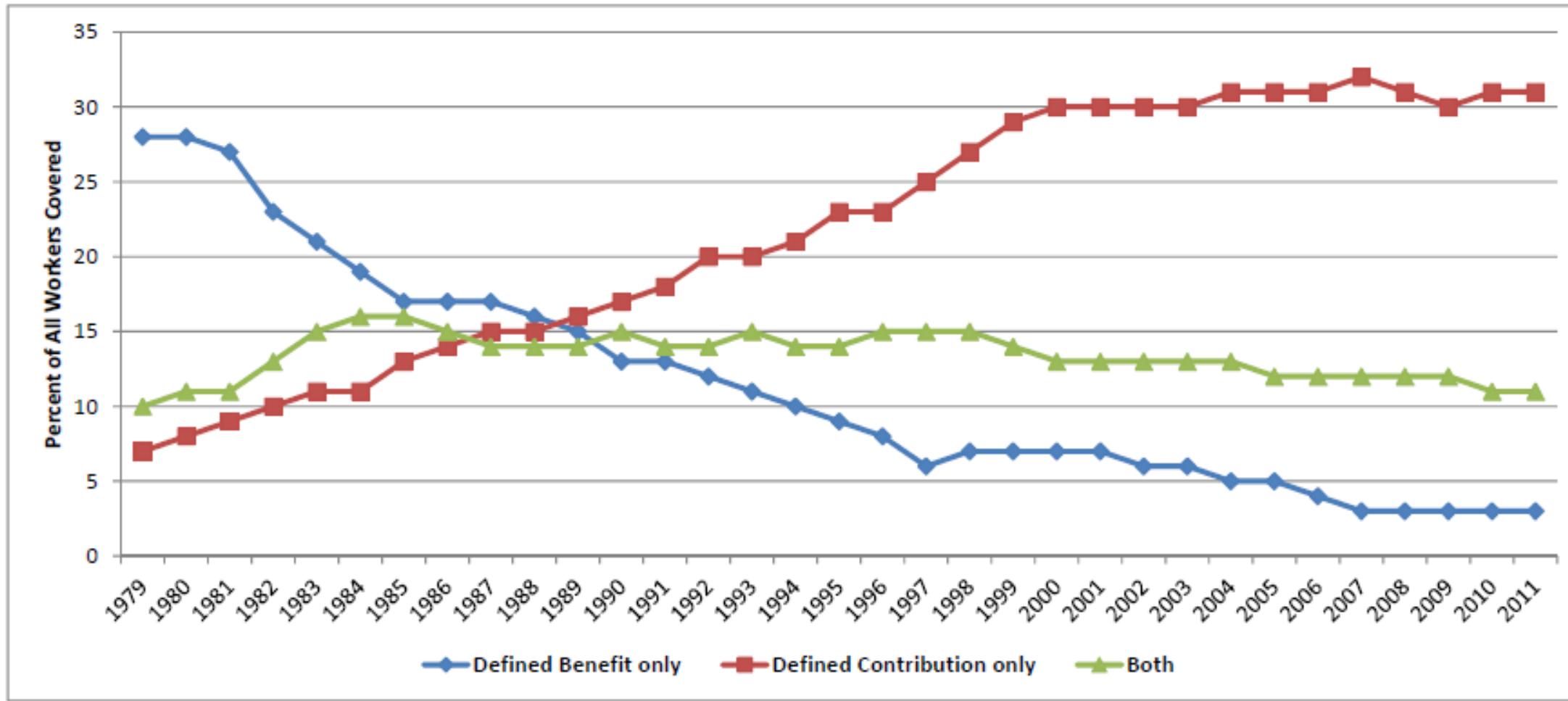
Overview of Key Biases in Decisions



# BEHAVIORAL BIASES IN DEFINED CONTRIBUTION PENSION PLANS

# BIG TREND IN PENSION COVERAGE

Percent of Private-Sector Workers Participating in an Employment-Based Retirement Plan,  
by Plan Type, 1979-2011 (*Among All Workers*)



Source: Employee Benefit Research Institute (accessed 2012)

# DEFINED CONTRIBUTION (DC) PENSION PLANS

Many workers in U.S. save for retirement through defined contribution (DC) plans

These retirement plans require the worker to decide how much to save (up to limits) as well as *how* to save (i.e., make investment choices)

Investment choices typically include various stock and bond mutual funds, a money market fund, and perhaps the firm's own stock

Most firms will contribute to the participant's account (employer match), either in cash or company stock

# DC PENSION PLANS

First issue to consider is simply whether to save!

Power of compounding (shown in my first course) shows the power of saving early!

Also, need to decide how much to save

**Be sure to save enough to max out employer contributions to plan!**

**Take advantage of the tax-deferred nature of the plan!**

Another issue to consider is broad asset allocation, what mix of stocks and bonds matches your risk aversion/tolerance

# DC PENSION PLANS

Another important issue to consider, given your stock/bond mix, is whether to invest in actively-managed funds or index funds

# **STAY TUNED TO MODULE 4**

## **UPCOMING ATTRACTIIONS!**

Do active mutual fund managers  
outperform their benchmarks?

**MODULE 4**

# **STAY TUNED TO MODULE 4**

## **UPCOMING ATTRACTIIONS!**

What is the relation between fees charged  
by a manager and fund performance?

**MODULE 4**

# BEHAVIORAL BIASES IN DC PENSION PLANS

Representativeness

Familiarity

Endorsement Effect

Naïve Diversification (“1/n” investing)

Inertia

Option Confusion

Power of Defaults

# BEHAVIORAL BIASES IN DC PENSION PLANS

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Naïve Diversification (“1/n” investing)

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# AVOID BECOMING PREY TO BEHAVIORAL BIASES!



Source: Megahan (2005)

# AVOID BECOMING PREY TO BEHAVIORAL BIASES!



Source: Tax Credits.net (2012)

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Tax Credits.net. (2012). *Retirement* [Online image]. Retrieved from <https://www.flickr.com/photos/76657755@N04/7027606047>

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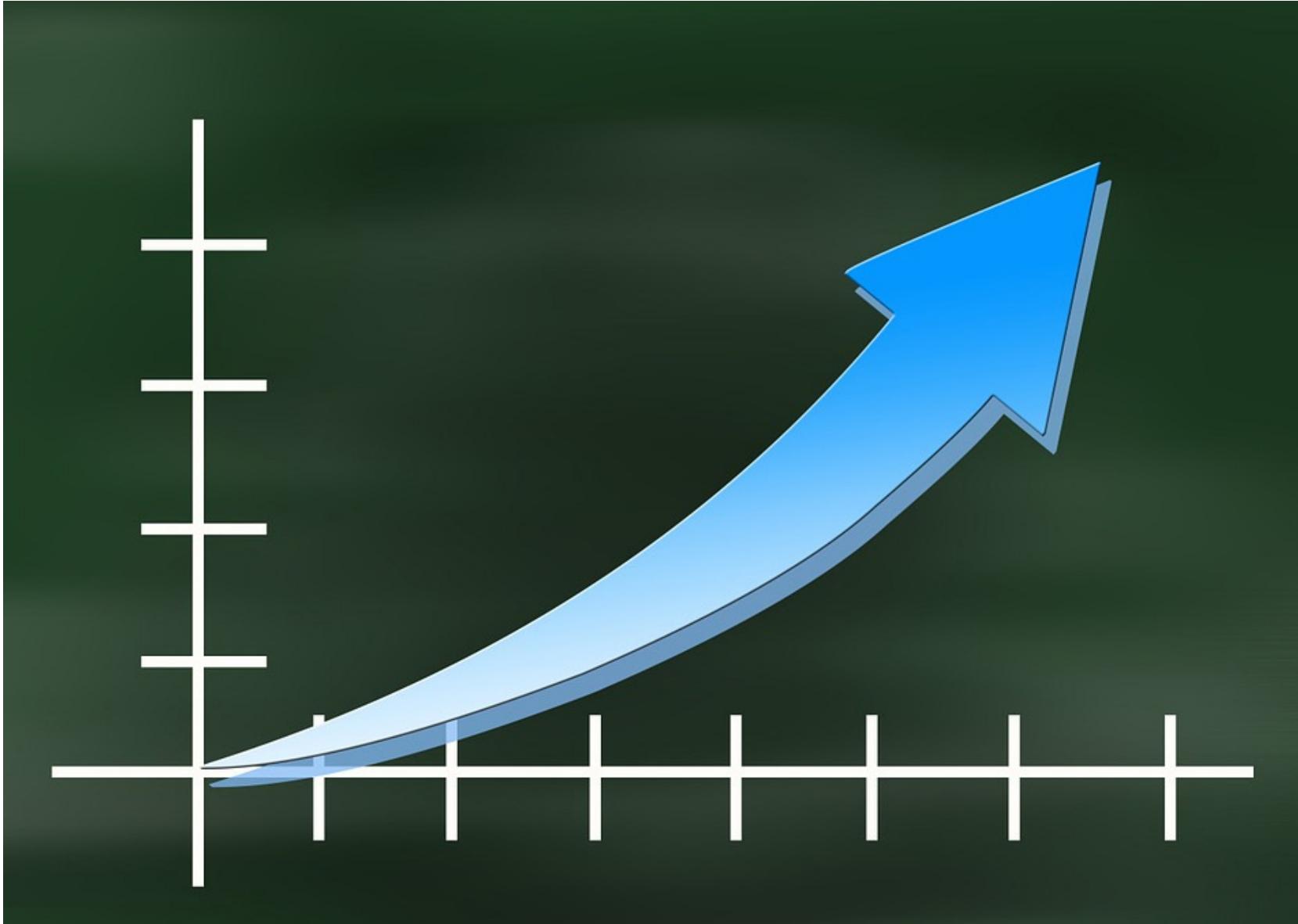
Power of Defaults

# REPRESENTATIVENESS

Over-extrapolate past events into the future

Idea is that expect firms that have done well (poorly) in the past to continue to do well (poorly) in future years

# REPRESENTATIVENESS



Source: Pixabay/geralt (n.d.)

# REPRESENTATIVENESS

Over-extrapolate past events into the future

Idea is that expect firms that have done well (poorly) in the past to continue to do well (poorly) in future years

We know there is some positive short-term return to momentum strategy (i.e., return over past year positively predicts return next month), but not over long horizons

Discussed in Benartzi (2001)

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTION

If a worker is subject to representativeness bias, will the worker likely invest more in his firm's company stock if the firm has done poorly or well in the past few years?

# REPRESENTATIVENESS: EXAMPLE

## Buy-and-Hold Raw Returns and Subsequent Allocations to Company Stock as a Percentage of Discretionary Contributions

This table displays equally weighted mean allocations to company stock (as a percentage of discretionary contributions) by quintile of past buy-and-hold raw returns. Company stock allocations are measured at the end of 1993. Portfolio 1 (5) includes retirement savings plans with the lowest (highest) past buy-and-hold raw returns. The table also provides the difference between the allocations of the extreme portfolios (i.e., portfolio 5 minus portfolio 1) and *t*-statistics. *N* = 142.

Quintiles Formed on the Basis of Buy-and-Hold Raw Returns for:	Quintile of Buy-and-Hold Returns					Observed Difference (5 – 1)	<i>T</i> -Statistic
	(Low) 1	2	3	4	5 (High)		
Prior year	21.10%	23.16%	27.85%	25.99%	23.70%	2.60%	0.60
Prior 2 years	22.61	22.43	25.18	28.74	22.96	0.35	0.06
Prior 3 years	14.14	25.45	26.21	28.84	27.78	13.64	3.33
Prior 4 years	11.74	22.20	28.18	31.10	30.23	18.49	4.64
Prior 5 years	12.64	18.68	26.27	34.66	31.21	18.57	4.33
Prior 6 years	11.99	18.72	29.33	33.45	29.96	17.97	4.63
Prior 7 years	11.36	18.98	24.11	34.79	33.70	22.34	5.87
Prior 8 years	11.46	20.69	24.22	32.96	33.63	22.17	5.70
Prior 9 years	11.08	20.76	20.52	34.04	36.68	25.60	6.49
Prior 10 years	10.37	19.68	21.56	31.51	39.70	29.33	8.39

Source: Benartzi (2001, Table 3)

# REFERENCES

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## Investment Decisions in DC Pension Plans

Familiarity Bias and Background Risk



# BEHAVIORAL BIASES IN DC PENSION PLANS

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# INVESTMENT, FAMILIARITY, AND BACKGROUND RISK

Familiarity in investments is misinterpreting casual knowledge of an investment/firm as a reduction in the risk of that investment/firm

Can potentially explain investment of workers in their own company stock

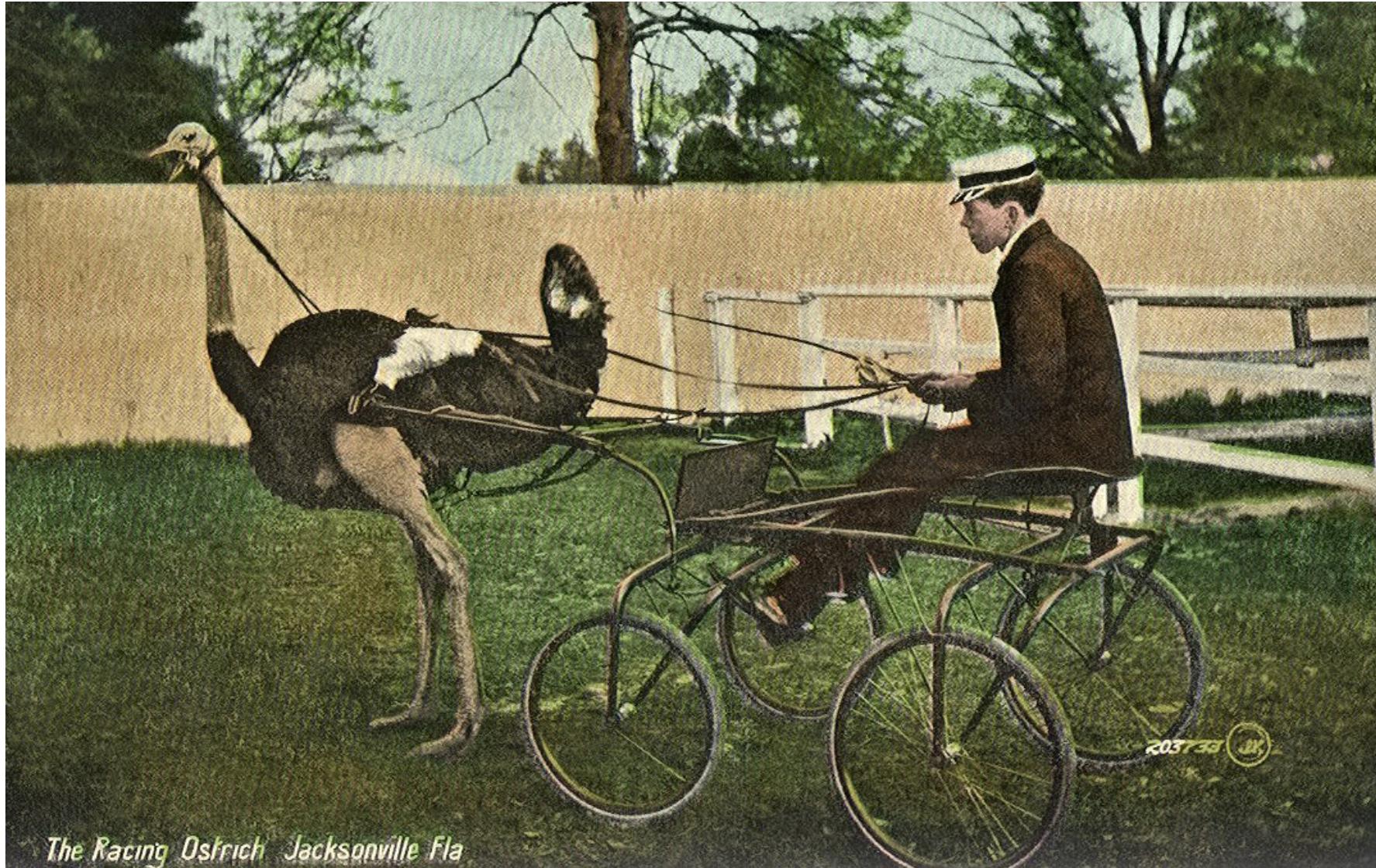
Is loosely consistent with individuals weighing return and risk, but have mismeasured the risk!

# EXAMPLES OF FAMILIARITY BIAS ...



Source: Richardson (2011)

# EXAMPLES OF FAMILIARITY BIAS ...



*The Racing Ostrich Jacksonville Fla*

Source: Valentine & Sons' Publish Company (n.d.)

# EXAMPLES OF BACKGROUND RISK

When making financial choices, need to consider your TOTAL portfolio of assets and liabilities

Insurer of homes in Miami should probably not invest in Miami real estate

A state pension plan should probably not invest a lot in within-state stocks

We discussed in my first course how the Public Benefit Guaranty Corporation (PBGC), insurer of company defined-benefit plans, should invest its assets (and NOT invest its assets!)

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTIONS

Should you invest heavily in the stock of your employer?

What are the pros and cons?

What would investment theory say is the optimal level of investment in your own firm's stock?

# **DISCUSSION OF QUESTIONS**

Should you invest heavily in the stock of your employer?

What are the pros and cons?

What would investment theory say is the optimal level of investment in your own firm's stock?

# DOUBLING DOWN ON BACKGROUND RISK CAN LEAD TO ...



Sources:

Pixabay/Clker-Free-Vector-Images (n.d.)  
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# FAMILIARITY BIAS: SURVEY RESULTS

John Hancock Financial Services conducted several “Defined Contribution Plan Surveys” of DC plan participants in the 1990s and 2000s

Two questions in particular help explain why we see many DC plan participants investing in company stock

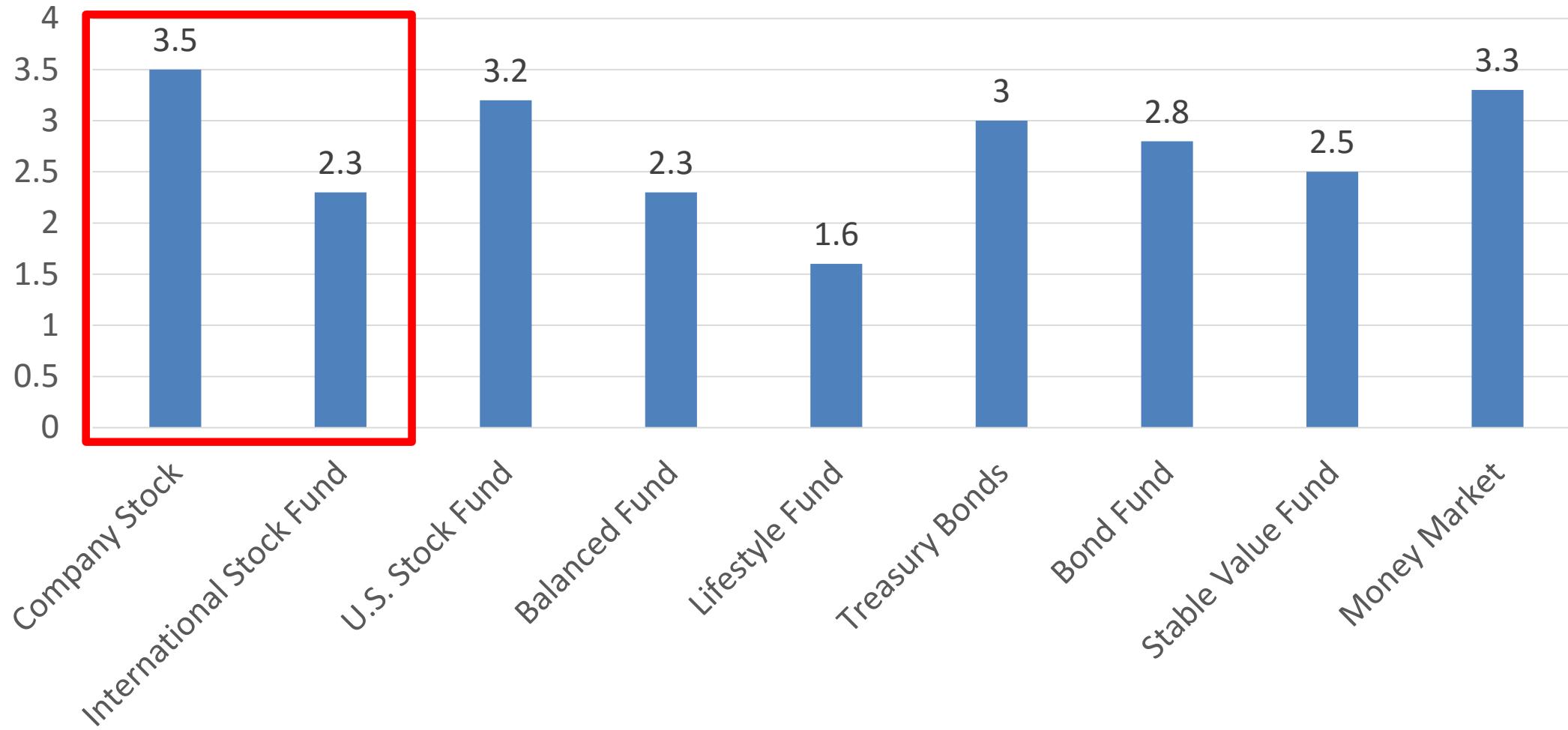
# FAMILIARITY BIAS: SURVEY RESULTS

Participants were asked to rate how familiar they are with various investment options on a scale of “1” (know nothing about it) to “5” (very familiar)

Participants were also asked to rate the risk associated with various investment options on a scale of “1” (no risk) to “5” (high risk)

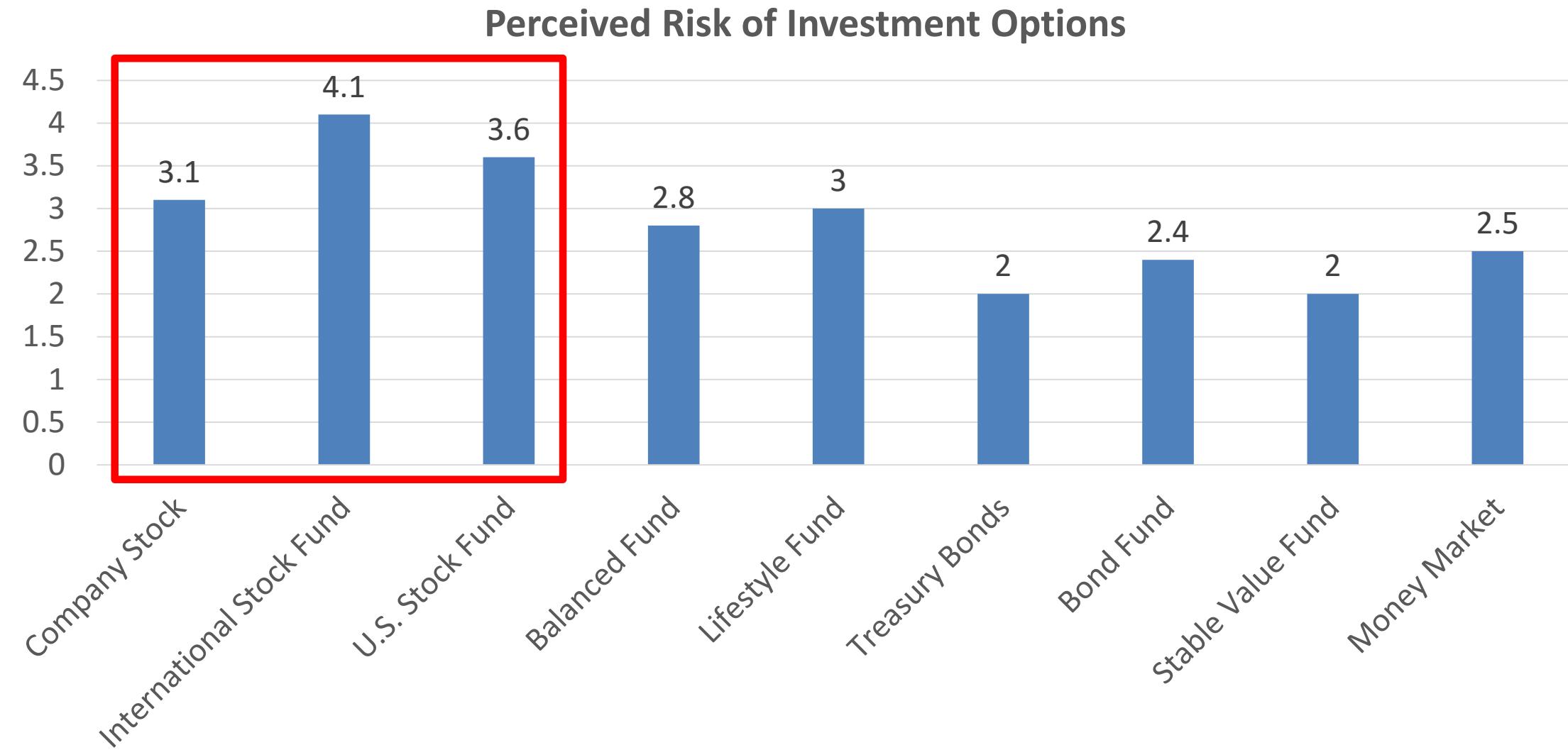
# FAMILIARITY BIAS: SURVEY RESULTS

## Perceived Familiarity with Investment Options



Source: John Hancock Financial Services (2002, p. 6)

# FAMILIARITY BIAS: SURVEY RESULTS



Source: John Hancock Financial Services (2002, p. 10)

# FAMILIARITY BIAS: SURVEY RESULTS

Own-company stock consistently rated as the investment option with which participants are the most familiar

Most surprisingly, participants consistently rate own-company stock as less risky than both a general international stock fund and a general U.S. stock fund and about the same as a “lifestyle” fund!

# FAMILIARITY BIAS: SURVEY RESULTS

**Good news:** Investment in company stock by DC plan participants could simply reflect a naïve reward-risk tradeoff being made (basic finance)

**Bad news:** The “risk” is substantially underestimated for company stock!

# BACKGROUND RISK FOR AN INDIVIDUAL

When making financial choices, need to consider your TOTAL portfolio of assets

Assets in different retirement plans, assets in taxable and tax-deferred accounts, real estate, and HUMAN CAPITAL

In particular, differences in human capital (and its correlation with the market) would suggest different financial portfolios

# BACKGROUND RISK AND INVESTMENTS

For example, a government worker with a fixed salary should invest more in risky assets in his/her financial portfolio than an individual that owns their own business

Investing in the company stock of your employer is a particularly risky strategy (given your future human capital/salary is likely also tied in part to the performance of your company)

# BACKGROUND RISK AND COMPANY STOCK

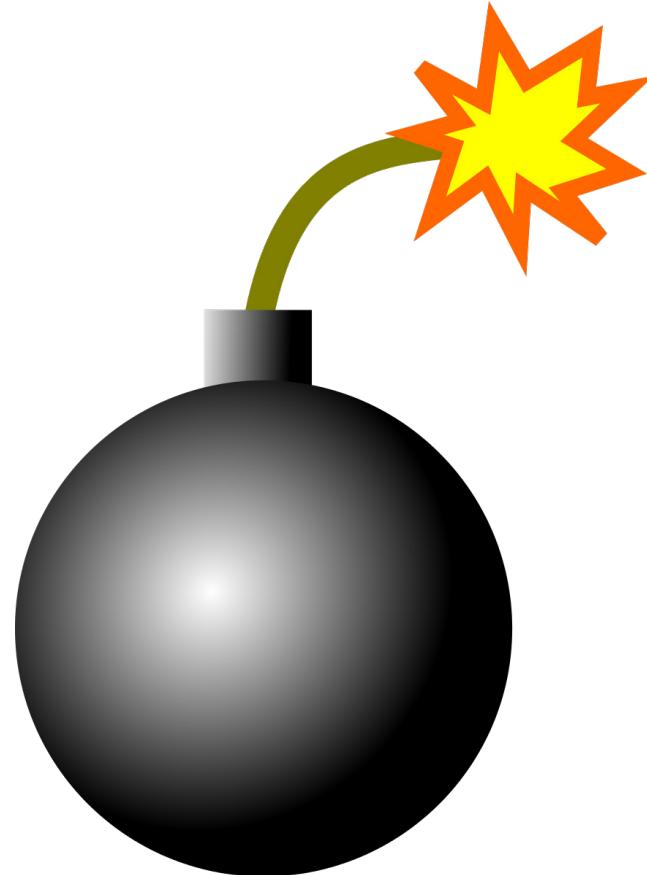
Investing in company stock sets you up for very volatile outcomes

Think of a worker at Microsoft or Google that invested all of his/her retirement plan in company stock (ex post: these workers are set for life)

Think of a worker at Enron or United Airlines that invested all of his/her retirement plan in company stock (ex post: these workers have ruined their “retirement”)

If individuals are risk-averse, they want to minimize the chance of a lose-lose scenario (and are willing to give up the chance at the win-win scenario to do so)

# INVESTING HEAVILY IN STOCK OF FIRM WHERE WORK CAN LEAD TO ...

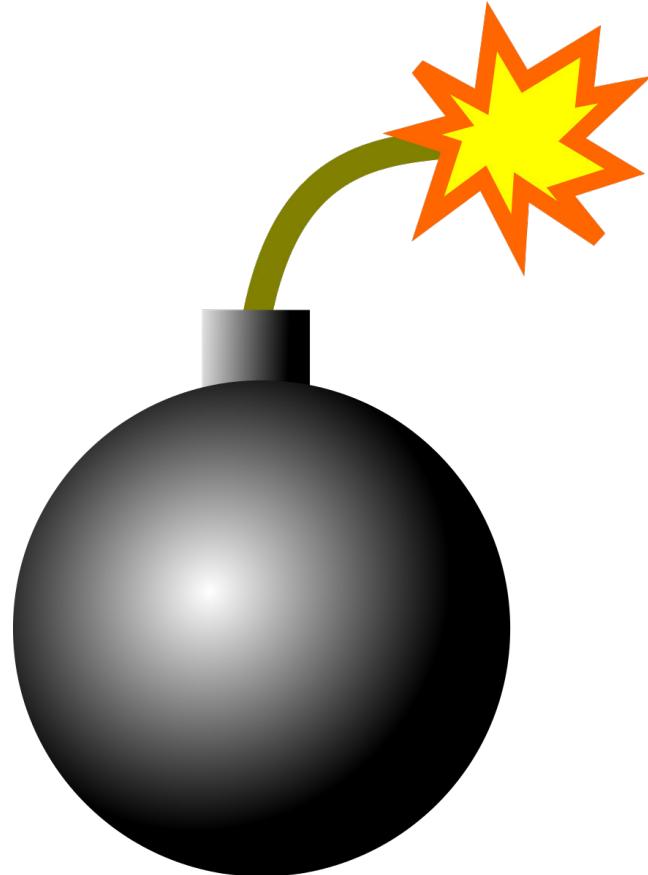


Sources:

Dilmen (2010)

[Freestockphotos.biz/nicubunu](http://Freestockphotos.biz/nicubunu) (n.d.)

# INVESTING HEAVILY IN STOCK OF FIRM WHERE WORK CAN LEAD TO ...



Sources:  
Dilmen (2010)  
Fowler (2015)

# COMPANY STOCK INVESTMENT

Obviously there is a background risk issue with investing in your own firm's company stock

But perhaps this investment could reflect good information, in which case the extra return may offset the extra risk

# FIRM STOCK ALLOCATIONS AND FUTURE PERFORMANCE

Benartzi (2001) ranks firms by investment in company stock by participants in 401(k) plans in 1993

Then studies *future* stock performance of these companies:

	Allocation to Company Stock					Observed Difference (5 – 1)
	(Low) 1	2	3	4	5 (High)	
Allocation to company stock as a percentage of discretionary contributions	4.59%	12.19%	19.34%	31.85%	53.90%	49.41%
One-year returns	6.64	6.55	1.27	-1.03	0.13	-6.77
Two-year returns	43.69	40.78	38.24	43.33	31.92	-11.77
Three-year returns	59.29	70.28	68.64	79.66	56.25	-3.04
Four-year returns	101.08	114.55	109.89	149.92	103.14	2.06

Source: Benartzi (2001, Table 5)

**STAY TUNED TO  
MODULES 3 & 4**

UPCOMING  
ATTRACTIIONS!

Geography of Investment Decisions for  
Individual Investors and Mutual Funds

**MODULES 3 and 4**

# KEY TAKEAWAYS

When make decisions regarding financial portfolio decisions, should take into account your TOTAL portfolio of assets and liabilities

A key example for individuals: Investing in your own firm's company stock exposes you to tremendous risk (exposes yourself to either win-win or lose-lose scenarios)

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

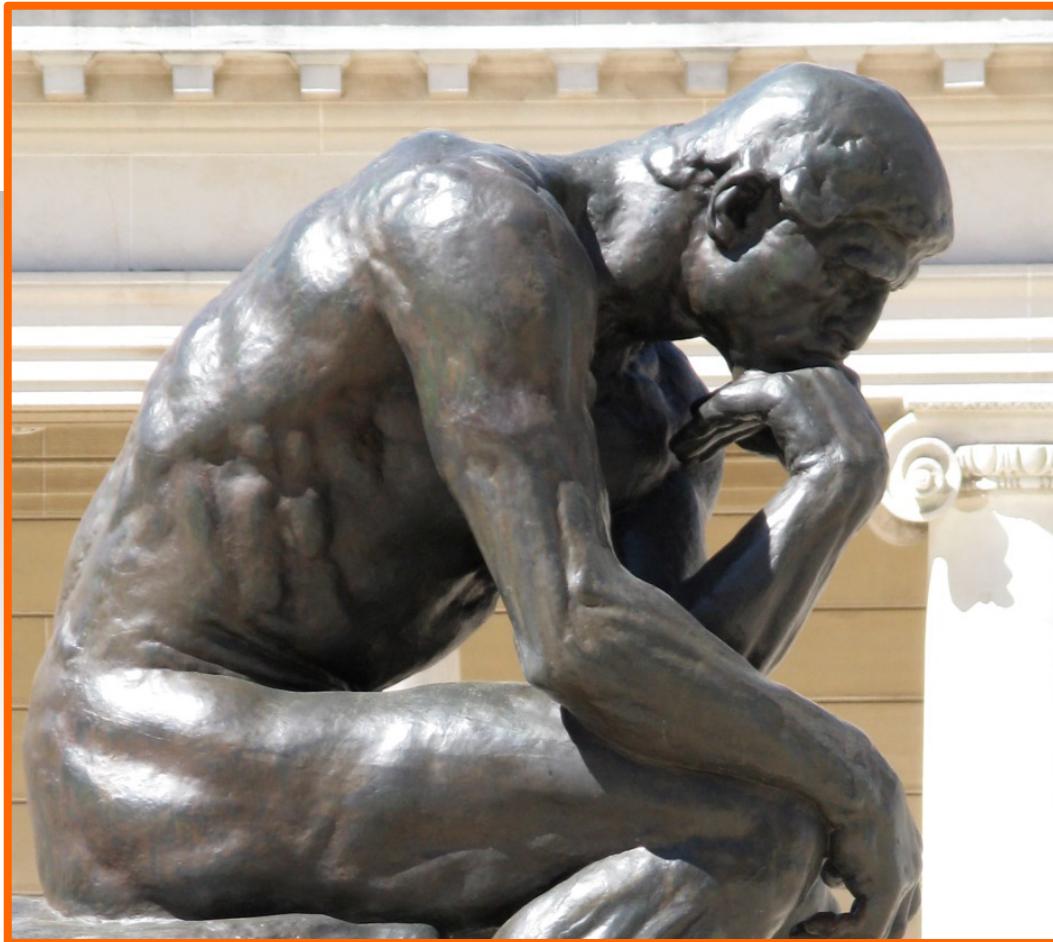
# QUESTION

From a welfare perspective (i.e., a concern about an investor being exposed to a dramatic loss in wealth), should we potentially be worried about an individual investor that invests a lot in local stocks, particularly the stock of his/her employer?

# **DISCUSSION OF QUESTION**

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# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTION

From a welfare perspective (i.e., a concern about an investor being exposed to a dramatic loss in wealth), should we potentially be worried about a mutual fund that invests a lot in local stocks?

# DISCUSSION OF QUESTION

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Endorsement Effects



# BEHAVIORAL BIASES IN DC PENSION PLANS

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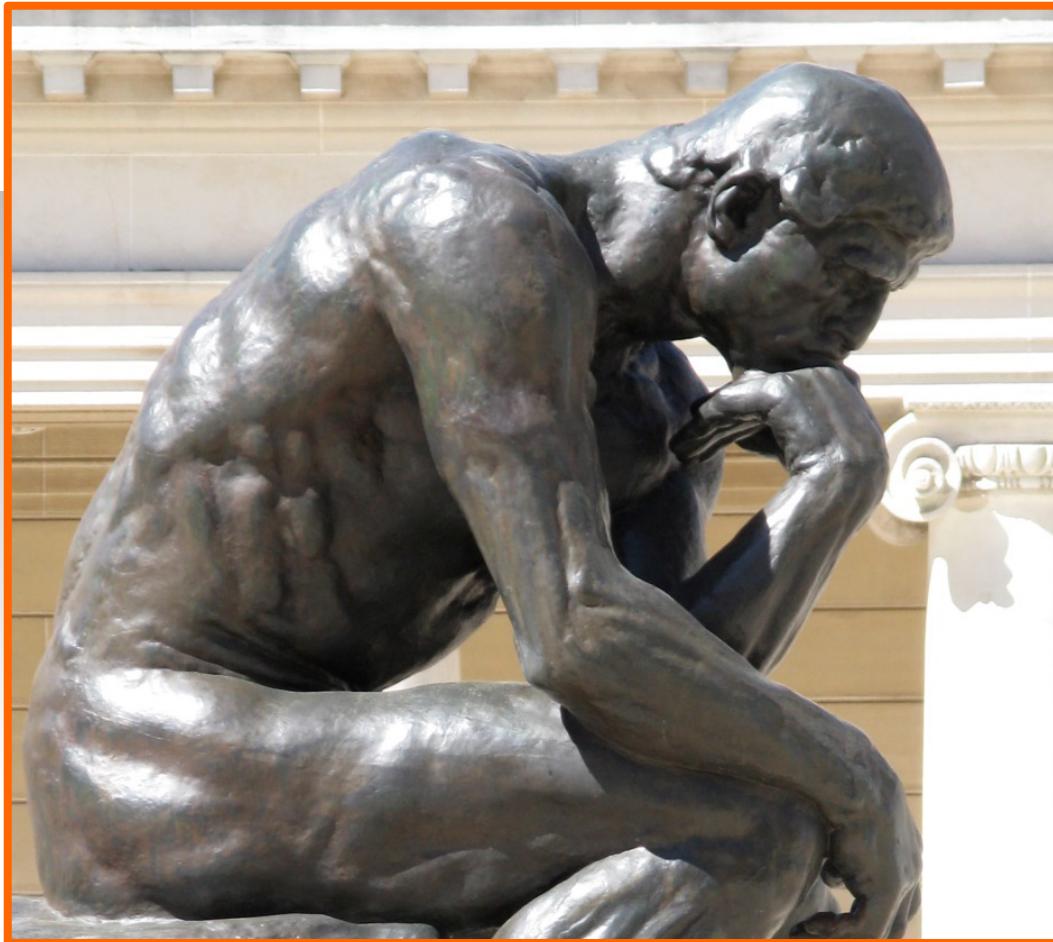
# ENDORSEMENT EFFECT

Firms are very reluctant to give any form of investment advice to pension plan participants for fear of being sued

Participants may try and interpret a firm's choice of pension plan structure (such as type of investment options available, whether firm contributes company stock or cash to plan) as providing suggestions to worker as to how to invest

Thus, plan details may provide perceived cues to participants as to how they should invest (even if that is not the intention)

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTION

Suppose you work for a firm, and that firm will provide matching contributions to you. These matching contributions represent 50% of your own contributions to the DC pension plan.

Would you invest more or less of your contributions in your firm's stock if your employer matches in company stock as opposed to matching in cash (which you can then invest how you wish)?

Why?

# DISCUSSION OF QUESTION

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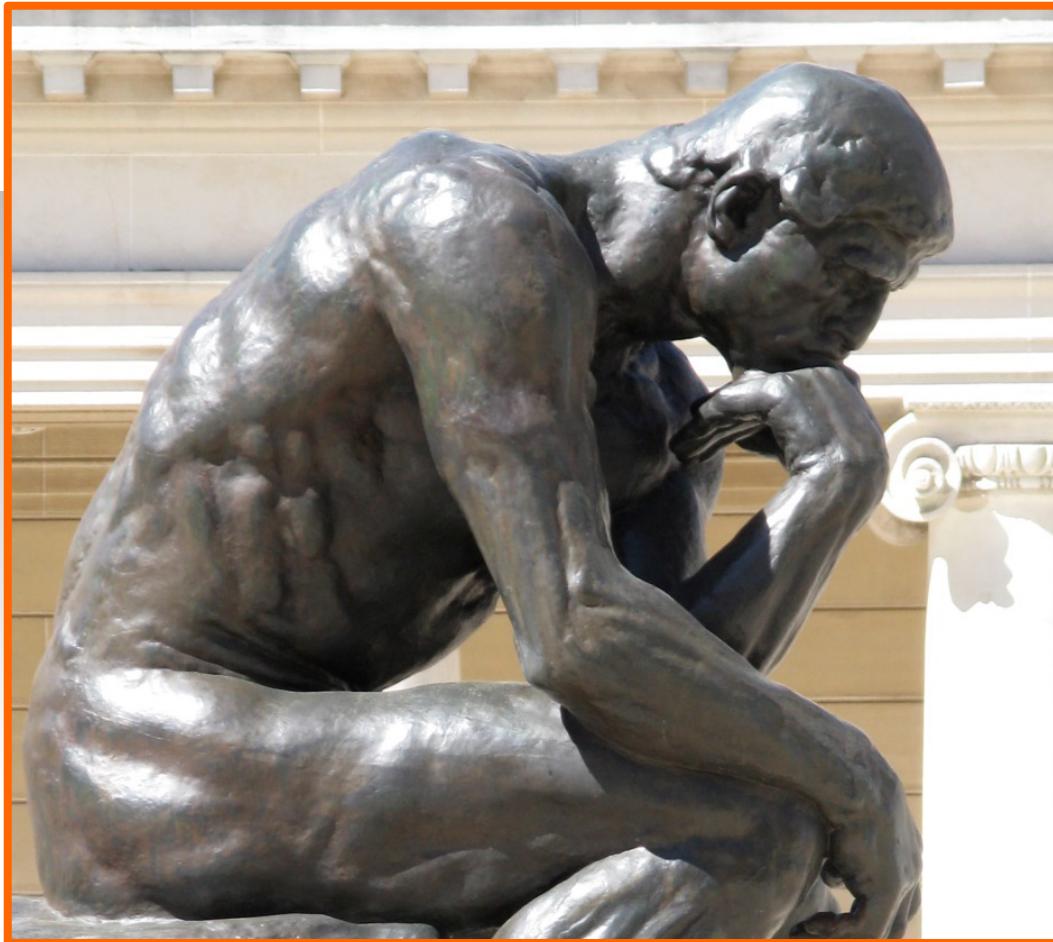
# ENDORSEMENT EFFECT

Benartzi (2001) and Brown, Liang, and Weisbenner (2007) both find that participants at firms that provide an employer matching contribution in company stock invest more of their **own** contributions in company stock (**NOT LESS**)

Consistent with an endorsement-effect explanation and not portfolio diversification

Brown, Liang, and Weisbenner (2007) also conclude that firm-level heterogeneity is an important determinant of allocations to company stock

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTION

I

Suppose you are in the Human Resources (HR) department of a firm. You wish to restrict how much workers invest in company stock in their retirement plan, but can't have an outright ban on investments in company stock.

How can you set up the plan so that company stock investments are likely limited, without materially affecting a participant's choice of investment options in the plan?

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# REFERENCES

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Naïve Diversification



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**Naïve Diversification (“1/n” investing)**

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# NAÏVE DIVERSIFICATION ("1/N" INVESTING)

Participants influenced simply by the composition of investment choices, even if some of the choices are duplicative

Discussed in Benartzi and Thaler (2001) and Brown, Liang, and Weisbenner (2007)

Can be viewed as a type of endorsement effect

# NAÏVE DIVERSIFICATION ("1/N" INVESTING)

Two methods to test whether naïve diversification affects portfolio decisions

*Experiments/Surveys* (e.g., Benartzi & Thaler (2001))

*Data on actual decisions* (e.g., Brown, Liang, & Weisbenner (2007))

# THREE HYPOTHETICAL SETS OF OPTIONS

## Option 1

4 bond funds and 2 stock funds

Money Market, LT US Bonds, MT US Bonds, ST US Bonds, S&P 500 Index, NASDAQ Index

## Option 2

2 bond funds, 2 stock funds, and 50/50 fund

Money Market, LT US Bonds, S&P 500 Index, NASDAQ Index, Balanced Fund

## Option 3

2 bond funds and 4 stock funds

Money Market, LT US Bonds, S&P 500 Index, NASDAQ Index, Large Stock Fund, Growth Stock Fund

# HYPOTHESES

Rational agent

Behavioral

# AVERAGE PERCENT OF ASSETS IN EQUITY

	<b>4 Bond 2 Stock</b>	<b>2 Bond 2 Stock 1 Balanced</b>	<b>2 Bond 4 Stock</b>
Rational			
Behavioral			

# AVERAGE PERCENT OF ASSETS IN EQUITY

	<b>4 Bond 2 Stock</b>	<b>2 Bond 2 Stock 1 Balanced</b>	<b>2 Bond 4 Stock</b>
Rational	same	same	same
Behavioral			

# AVERAGE PERCENT OF ASSETS IN EQUITY

	<b>4 Bond 2 Stock</b>	<b>2 Bond 2 Stock 1 Balanced</b>	<b>2 Bond 4 Stock</b>
Rational	same	same	same
Behavioral	33%	50%	67%

# MIX OF OPTIONS AND ALLOCATION OF CONTRIBUTIONS FOR ACTUAL PLANS

## EXAMINE REAL BEHAVIOR

Brown, Liang, and Weisbenner  
(2007) examine data for roughly  
1,000 publicly-traded firms  
1991-2000

Look at type of plan options  
provided by the firm (e.g., own-  
firm stocks, U.S. equity funds,  
bond funds, etc.)

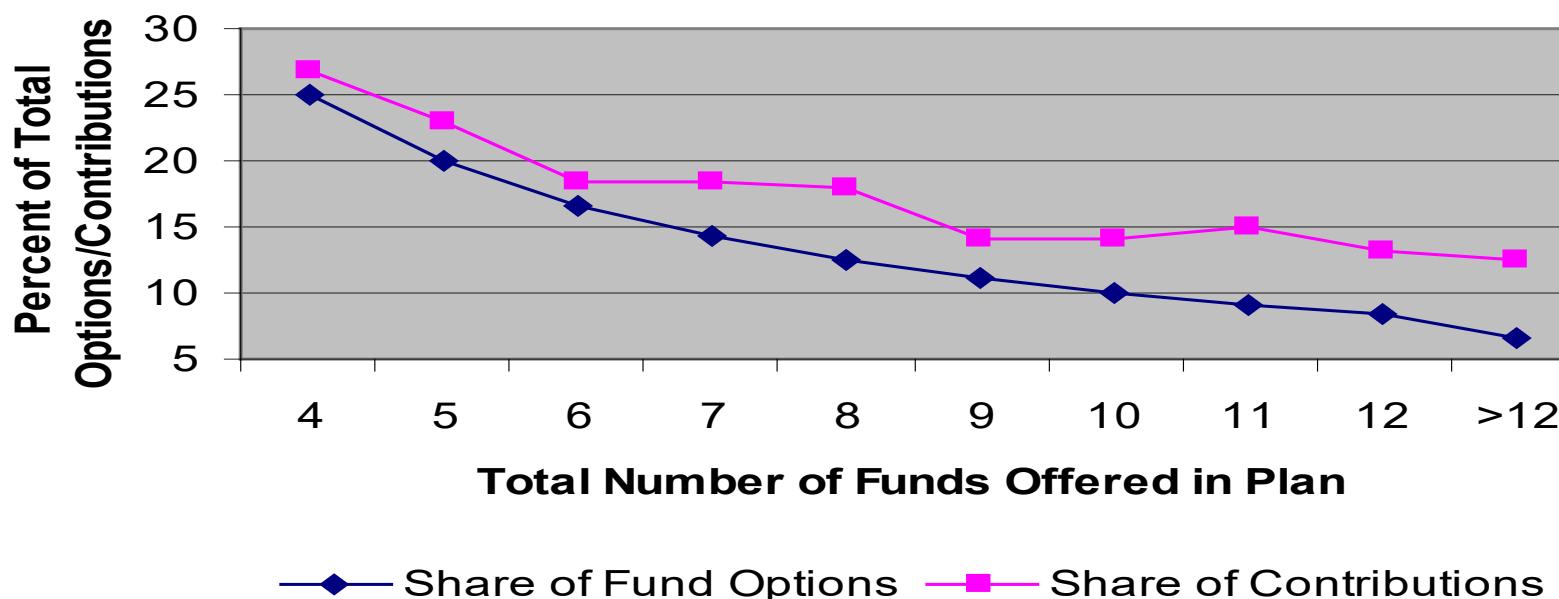
## EXAMINE REAL BEHAVIOR!

Also look at investment decisions  
of participants (allocation of own  
contributions)

How does composition of plan  
funds (firm decision) and  
composition of allocations (worker  
decision) vary with number of  
options in the plan?

# FUND OPTIONS & CONTRIBUTIONS: EMPLOYER STOCK

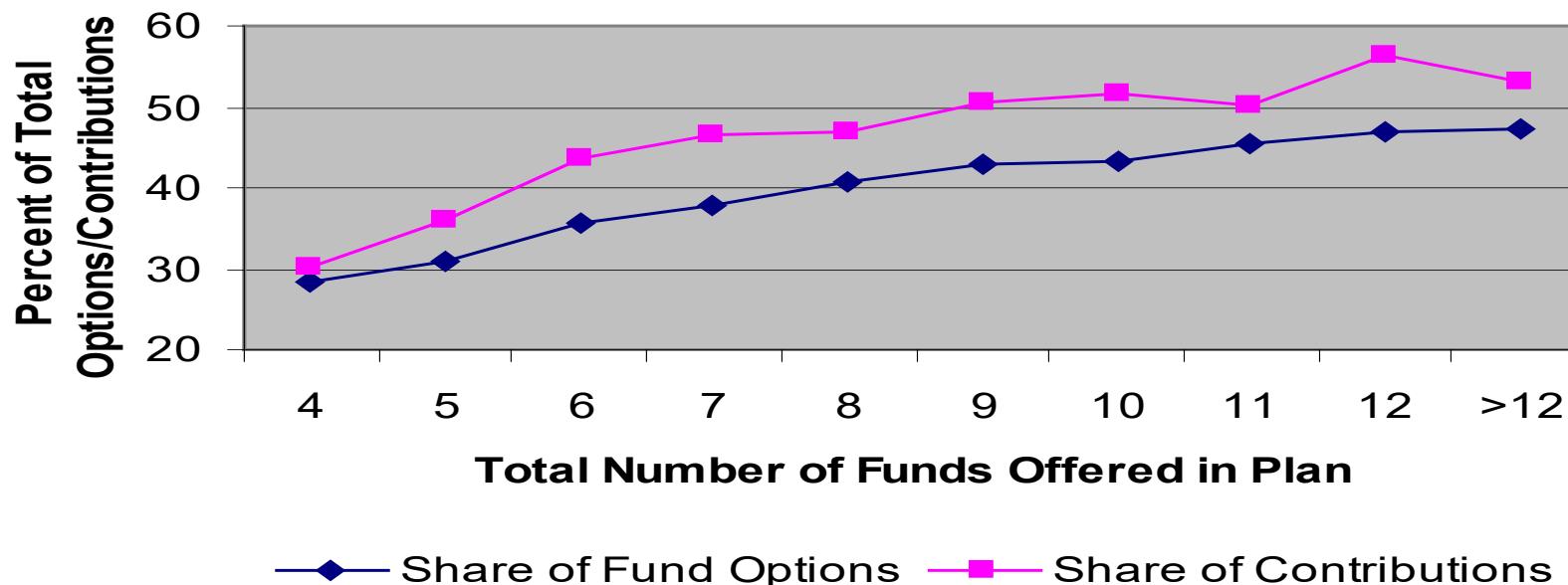
## Employer Stock



Source: Brown, Liang, & Weisbennner (2007, Figure 1)

# FUND OPTIONS & CONTRIBUTIONS: DOMESTIC EQUITY

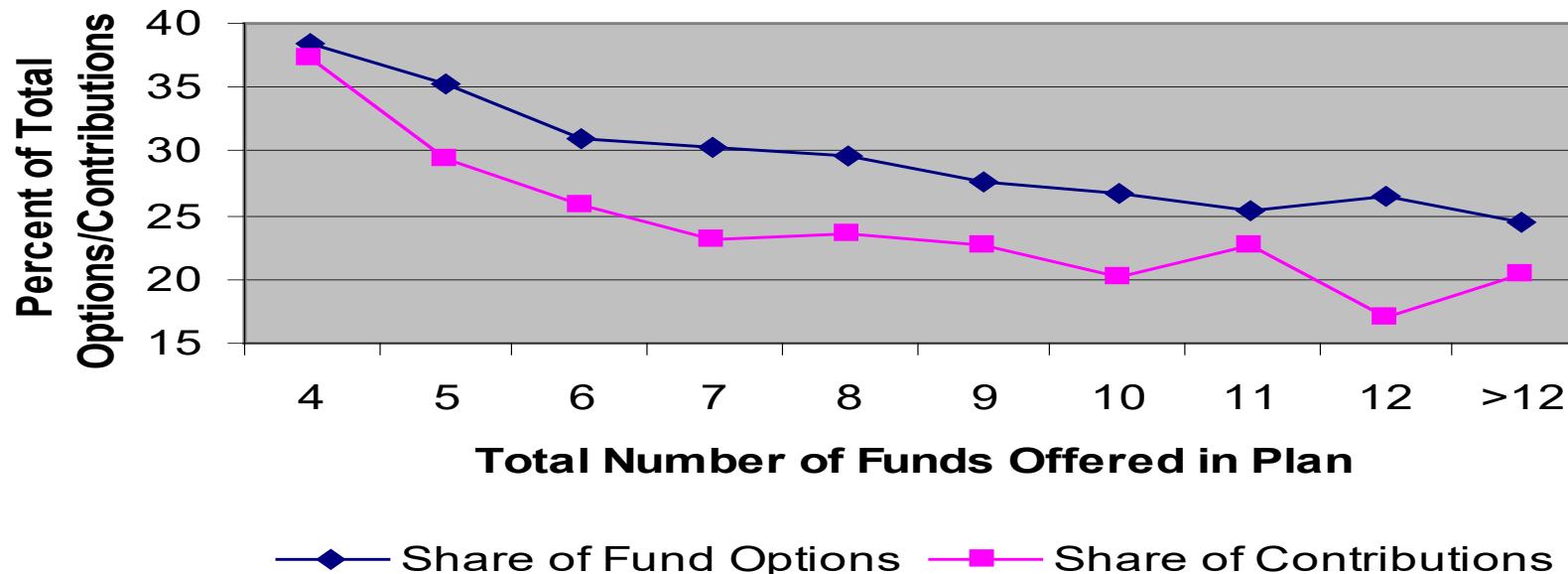
## Domestic Equity Funds



Source: Brown, Liang, & Weisbennner (2007, Figure 1)

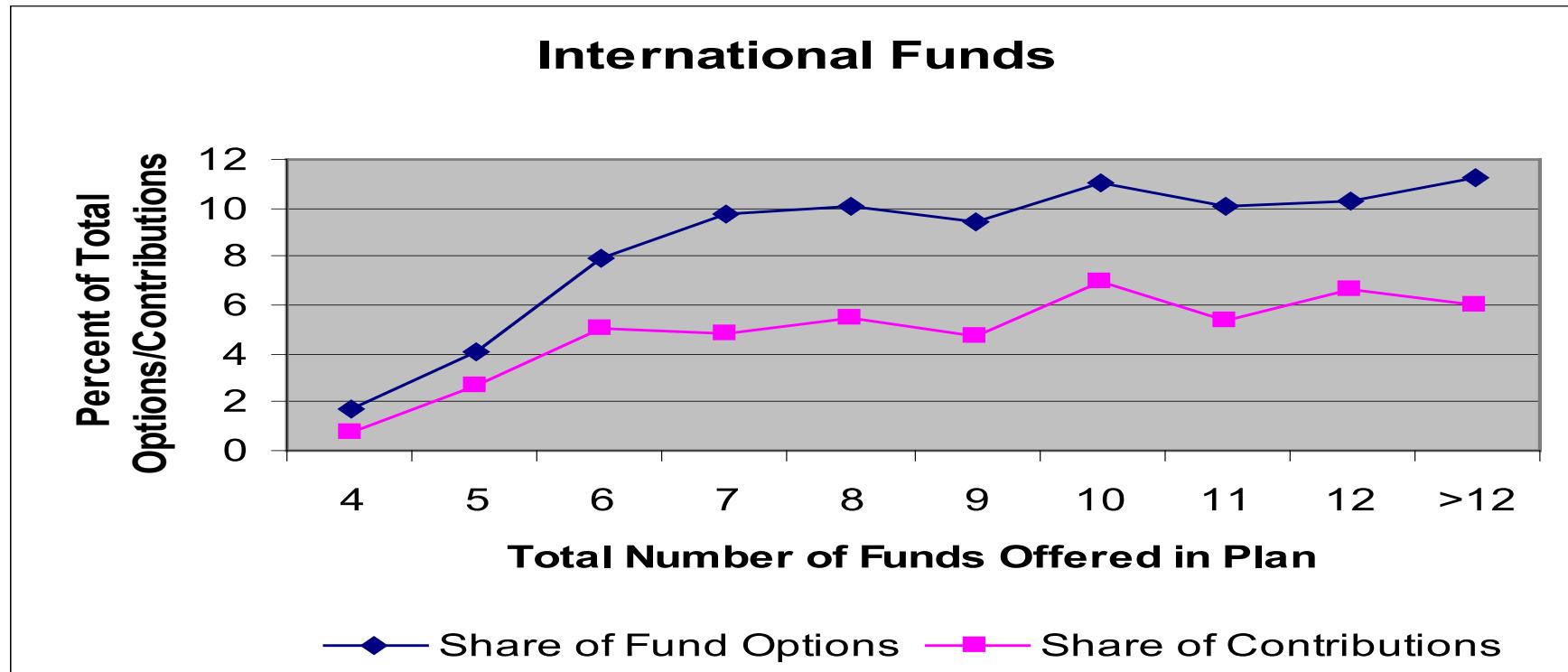
# FUND OPTIONS & CONTRIBUTIONS: FIXED INCOME

Fixed Income Funds



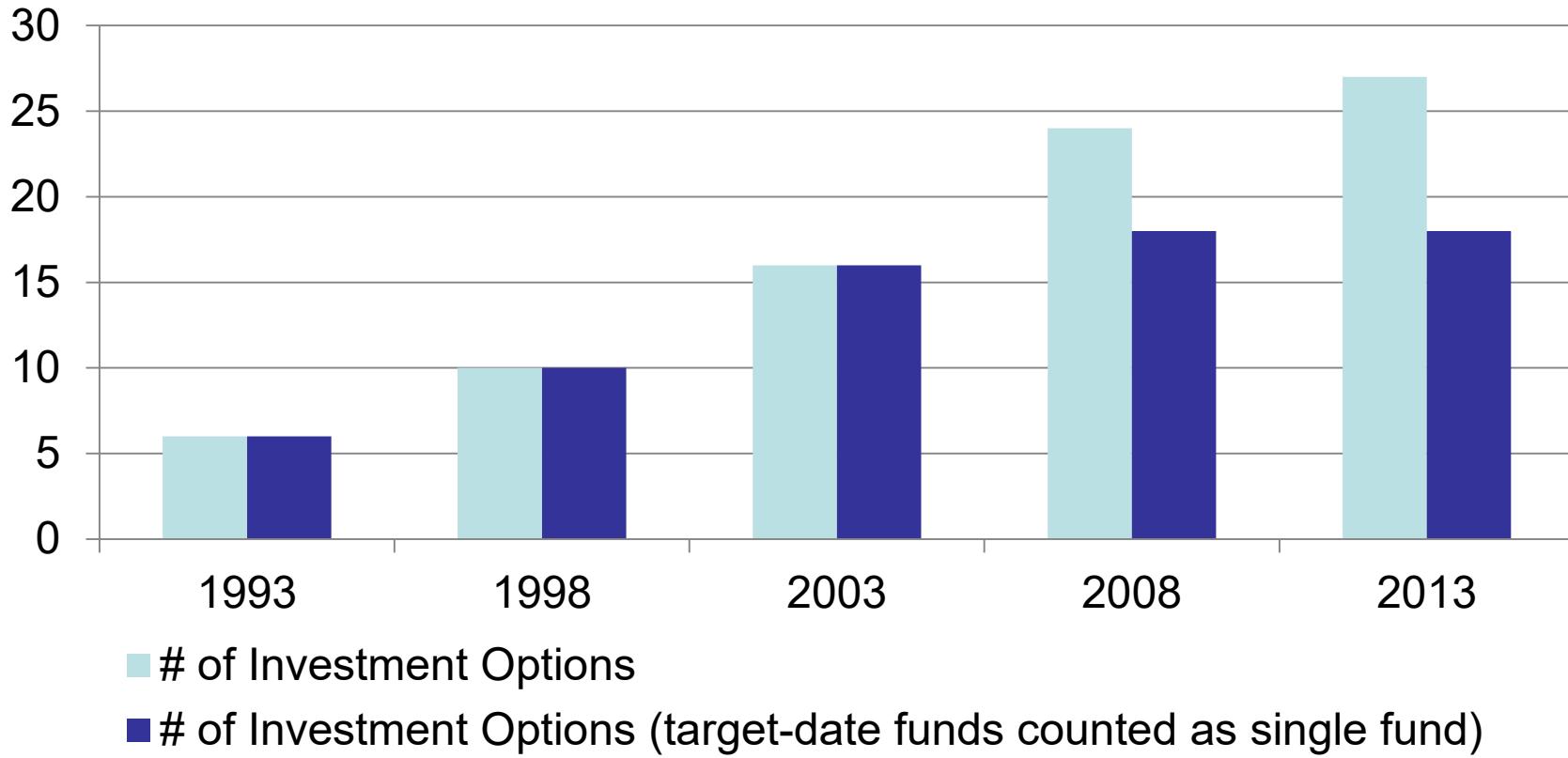
Source: Brown, Liang, & Weisbenner (2007, Figure 1)

# FUND OPTIONS & CONTRIBUTIONS: INTERNATIONAL



Source: Brown, Liang, & Weisbennner (2007, Figure 1)

# AVERAGE NUMBER OF INVESTMENT OPTIONS



■ # of Investment Options

■ # of Investment Options (target-date funds counted as single fund)

Sources: Brown, Liang, & Weisbennner (2007) and Utkus & Young (2008 & 2014)

# WHY SO MANY OPTIONS?

Is this too much choice for participants?

## Choice overload

(Iyengar, Huberman, & Jiang (2004))

# WHY SO MANY OPTIONS?

Is this too much choice for participants?

**Endorsement effect & naïve diversification concerns** (Benartzi (2001), Benartzi & Thaler (2001), and Brown, Liang, & Weisbenner (2007))

Huberman & Jiang (2006) find naïve diversification effect is less in plans with many options

# WHY SO MANY OPTIONS?

Need 25+ options for “efficient frontier”?

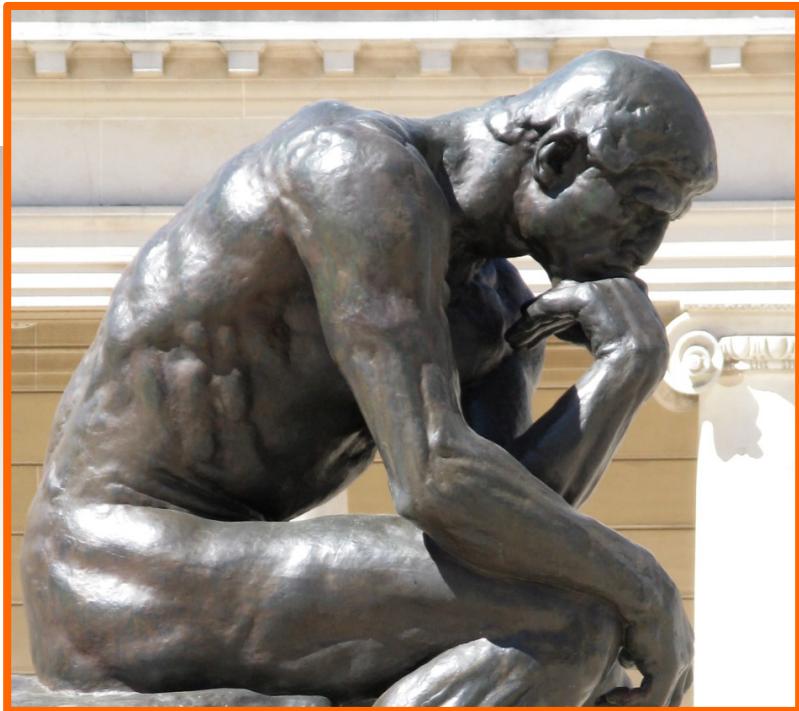
# WHY SO MANY OPTIONS?

Despite all of these investment options, over half of plans (covering over 40% of participants) do not provide a basic core of index funds  
(Utkus & Young (2014))

Core of index funds = Index funds for U.S. equity, U.S. bonds, & international equity

More index option choices (and more prominent display in the menu) can help lower participant expenses

# PAUSE, THINK, AND ANSWER!



Source: Haklai (2012)

# QUESTIONS: NAÏVE DIVERSIFICATION

Why do pension plan participants behave this way?

Why should we care about it?

How should firms respond to this bias in decision making?

# **DISCUSSION OF QUESTIONS: NAÏVE DIVERSIFICATION**

Why do pension plan participants behave this way?

Why should we care about it?

How should firms respond to this bias in decision making?

## REFERENCES

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# INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

## Investment Decisions in DC Pension Plans

Inertia



# BEHAVIORAL BIASES IN DC PENSION PLANS

Representativeness

Familiarity

Endorsement Effect

Naïve Diversification (“1/n” investing)

Inertia

Option Confusion

Power of Defaults

# BEHAVIORAL BIASES IN DC PENSION PLANS

Representativeness

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**Inertia**

Option Confusion

Power of Defaults

# EXAMPLE OF INERTIA ...



Source: Image from Scott Weisbennner

# INERTIA IN FINANCIAL DECISIONS

Can be both good or bad

Highlights importance of participants making a sound portfolio allocation at the start

Explains power of defaults in influencing behavior (as will soon discuss)

# INERTIA: EXAMPLE

Ameriks and Zeldes (2004) examined decisions of TIAA-CREF participants in their retirement plan over a 9-year period

Participants could make two changes

- Asset Allocation

- Contribution Allocation

# INERTIA: EXAMPLE

Ameriks and Zeldes (2004) examined decisions of TIAA-CREF participants in their retirement plan over a 9-year period

Results:

47% made ZERO changes to contribution allocation over 9-year period (68% made zero or one change)

73% made ZERO changes to asset allocations over 9-year period (86% made zero or one change)

# REFERENCES

Ameriks, J., & Zeldes, S. P. (2004). *How do household portfolio shares vary with age* (Working paper).

# INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

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Power of Defaults

# OPTION CONFUSION: AN EXAMPLE



Source: Bentley (2011)

# OPTION CONFUSION: AN EXAMPLE



Source: NNECAPA (2008)

# OPTION CONFUSION

Is choice a good or bad thing?

Too much choice can be a bad thing!

Participants presented with too many investment options less likely to participate at all in DC pension plan  
(Iyengar, Huberman, & Jiang (2004))

# OPTION CONFUSION

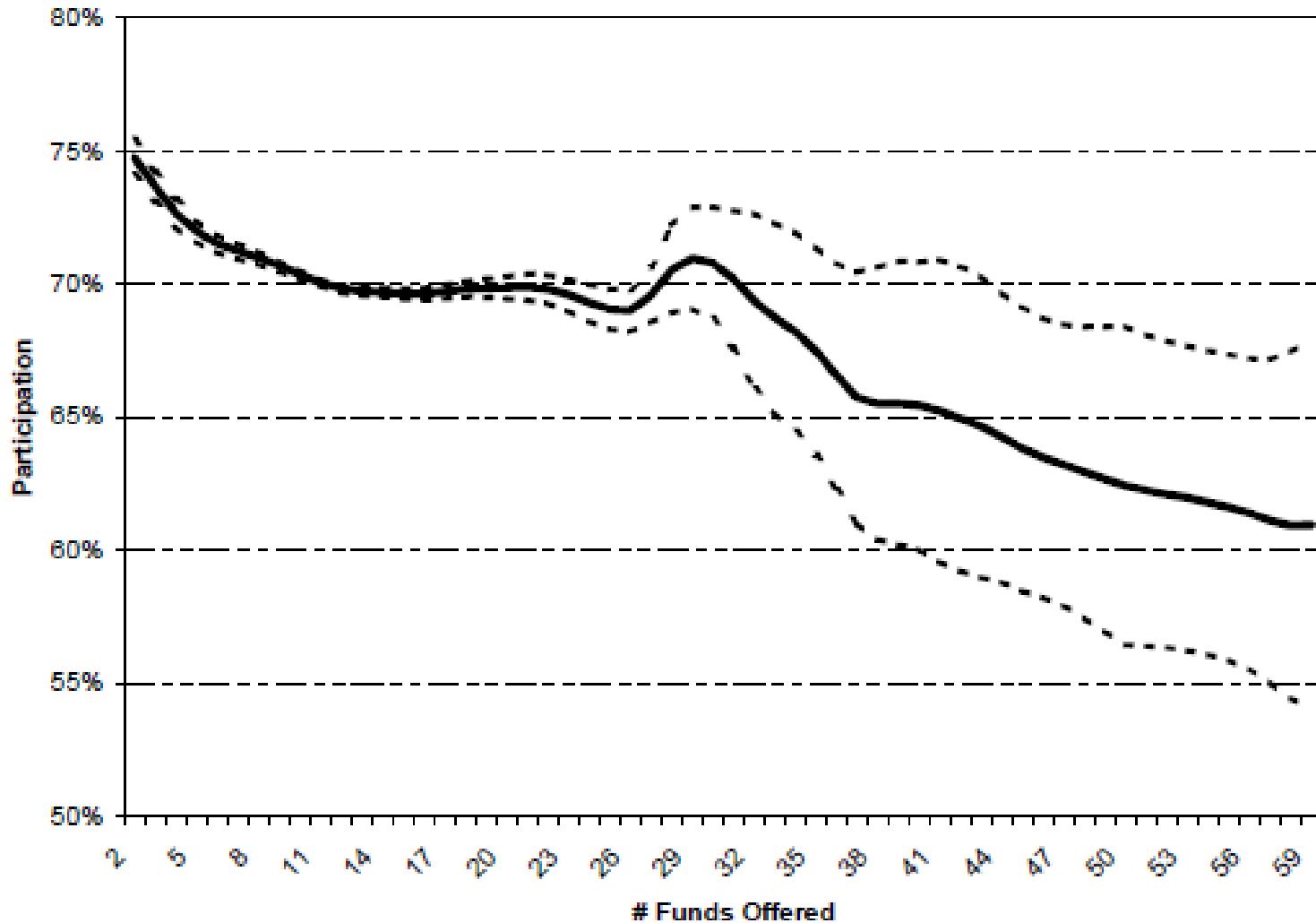
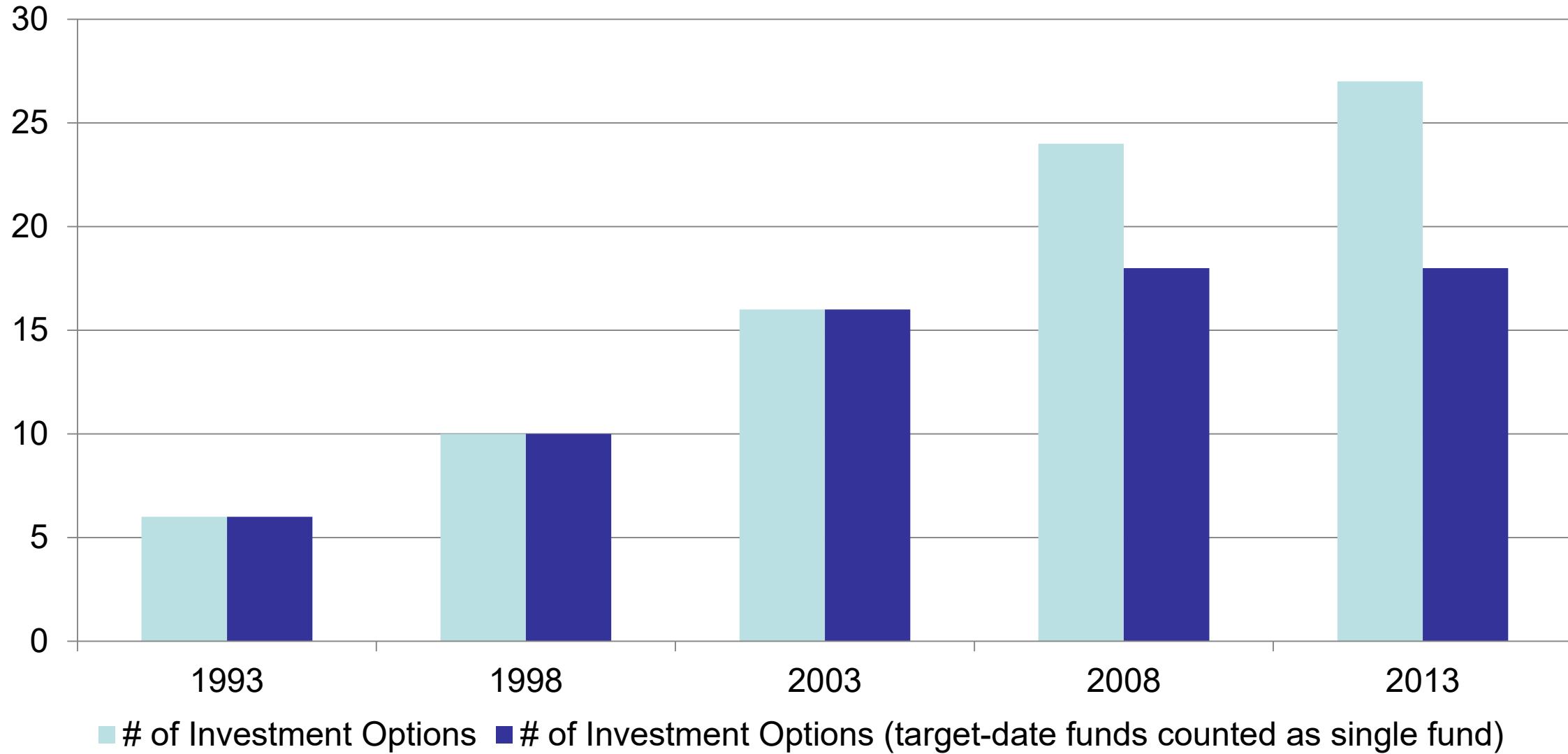


Figure 2. The Relation between Participation and Number of Funds Offered

Source: Iyengar, Jiang, & Huberman (2003, Figure 2)

# AVERAGE NUMBER OF INVESTMENT OPTIONS



Sources: Brown, Liang, & Weisbenner (2007) and Utkus & Young (2008 & 2014)

# OPTION CONFUSION

Is choice a good or bad thing?

Too much choice can be a bad thing!

Participants presented with too many investment options less likely to participate at all in DC pension plan  
(Iyengar, Huberman, & Jiang (2004))

Participants presented with too many investment options, *if they do participate in plan*, select a familiar option like company stock

(<http://www.plansponsor.com/MagazineArticle.aspx?Id=6442455959>)

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Bentley, M. (2011, November 13). *Too many choices*. Retrieved from <https://www.flickr.com/photos/donhomer/6352390786>

Brown, J. R., Liang, N., & Weisbenner, S. (2007). Individual account investment options and portfolio choice: Behavioral lessons from 401(k) plans. *Journal of Public Economics*, 91(10), 1992-2013.

Iyengar, S. S., Huberman, G., & Jiang, J. (2004). How much choice is too much: Determinants of individual contributions in 401(k) retirement plans. In O. S. Mitchell & S. Utkus (Eds.), *Pension design and structure: New lessons from behavioral finance* (pp. 83-95). Oxford: Oxford University Press.

Iyengar, S. S., Jiang, W., & Huberman, G. (2003). How much choice is too much?: Contributions to 401(k) retirement plans. *Pension research council working paper 2003-10*.

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NNECAPA. (2008, September 18). *Confusing traffic sign, Boston, MA*. Retrieved from <https://www.flickr.com/photos/nnecapa/2868248691>

Utkus, S. P., & Young, J. A. (2008). *How America saves 2008: A report on vanguard 2007 defined contribution plan data*. Valley Forge, PA: The Vanguard Group, Inc.

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# INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

## Investment Decisions in DC Pension Plans

Power of Defaults



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**Power of Defaults**

# POWER OF DEFAULTS

One of the biggest changes in pension-plan design over the last decade

Great way to guide participants to “reasonable” investment decisions and overcome behavioral biases while still allowing choice if people really want that

People generally do not undo default

BUT ... Responsibility for selecting appropriate default outcome (paternalism)

What are incentives of those establishing the default?

# PARTICIPATION BY ENROLLMENT STATUS: MADRIAN & SHEA (2001)

Switching from a plan where the default is you are out of plan (unless sign up) to a plan where the default is you are in the plan (unless sign form to get out) increases participation in the 401(k) plan by almost 50%!

Data based on change in behavior within a given firm

These differences in participation remain after several years!

	Default = Out	Default = In
<i>Overall</i>	37.4%	85.9%
<i>Gender</i>		
Male	42.3	85.7
Female	35.9	86.0
<i>Race / ethnicity</i>		
White	42.7	88.2
Black	21.7	81.3
Hispanic	19.0	75.1
Other	46.2	85.2
<i>Age</i>		
Age < 20	—	73.6
Age 20–29	25.3	82.7
Age 30–39	37.2	86.3
Age 40–49	47.3	90.1
Age 50–59	51.8	90.0
Age 60–64	60.0	86.0

Source: Madrian & Shea (2001, Table 4)

# PARTICIPATION BY ENROLLMENT STATUS: MADRIAN & SHEA (2001)

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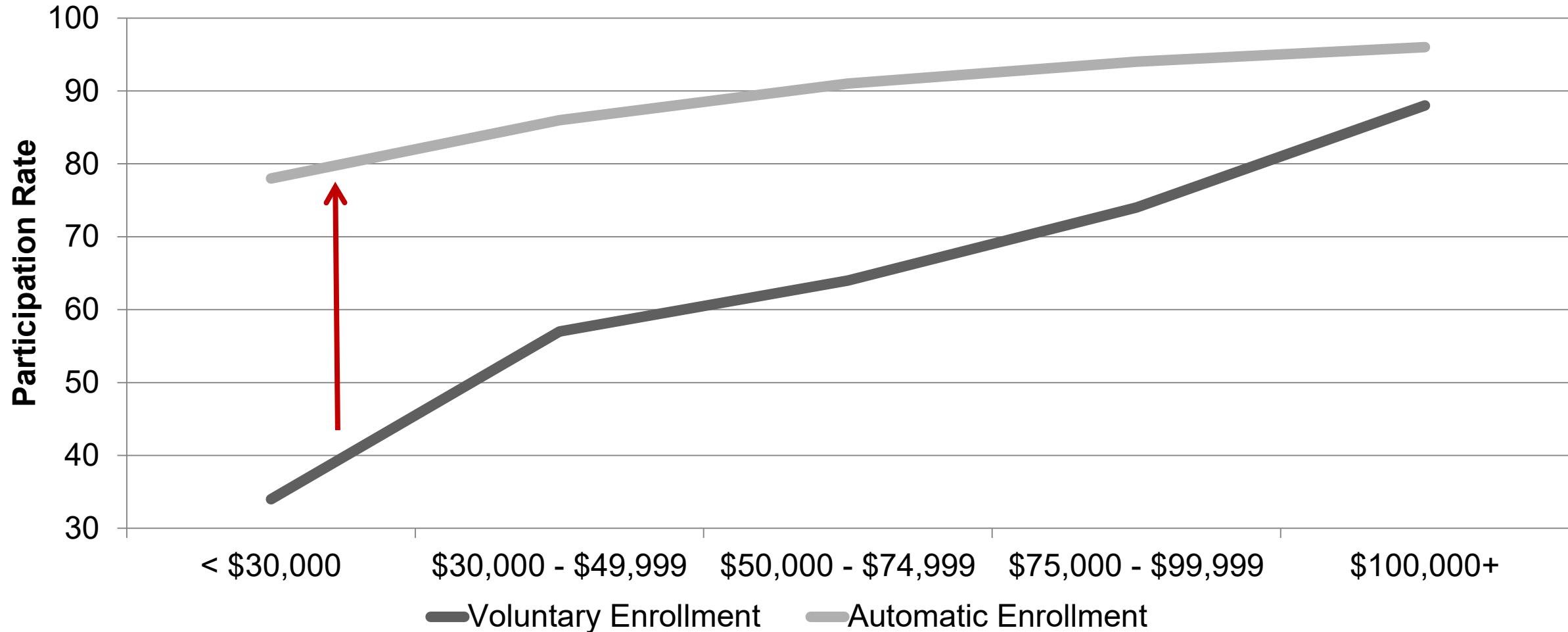
These differences in participation remain after several years!

<i>Compensation</i>	Default = Out	Default = In
<\$20K	12.5	79.5
\$20–\$29K	24.5	82.8
\$30–\$39K	42.2	88.9
\$40–\$49K	51.0	91.8
\$50–\$59K	61.6	92.8
\$60–\$69K	59.7	94.7
\$70–\$79K	57.9	91.5
\$80K+	68.3	94.2

Source: Madrian & Shea (2001, Table 4)

# PARTICIPATION IN DC PLANS, 2013, BY INCOME

VOLUNTARY vs. AUTO enrollment:



Source: Utkus & Young (2014, Figure 24)

# GROWTH OF AUTOMATIC ENROLLMENT

Dramatic growth in auto enrollment

7% of plans in 1999 (Munnell & Sundén (2004))

46% of plans in 2011 (PSCA (2012))

If “auto enroll” employees in plan, also need to have default contribution level and asset allocation

2006 Pension Protection Act allows firm to offer life-cycle or target-date funds as a default (these funds offer a diversified portfolio allocation that automatically becomes more conservative as retirement age approaches for the individual)

# POTENTIAL CONSEQUENCE OF AUTOMATIC ENROLLMENT

Brown, Farrell, and Weisbenner (2016) study the determinants and consequences of default behavior in the context of the selection of a pension plan in the State Universities Retirement System (SURS) in Illinois

Three plans: Self-Managed DC plan, Traditional DB plan, and Portable DB plan

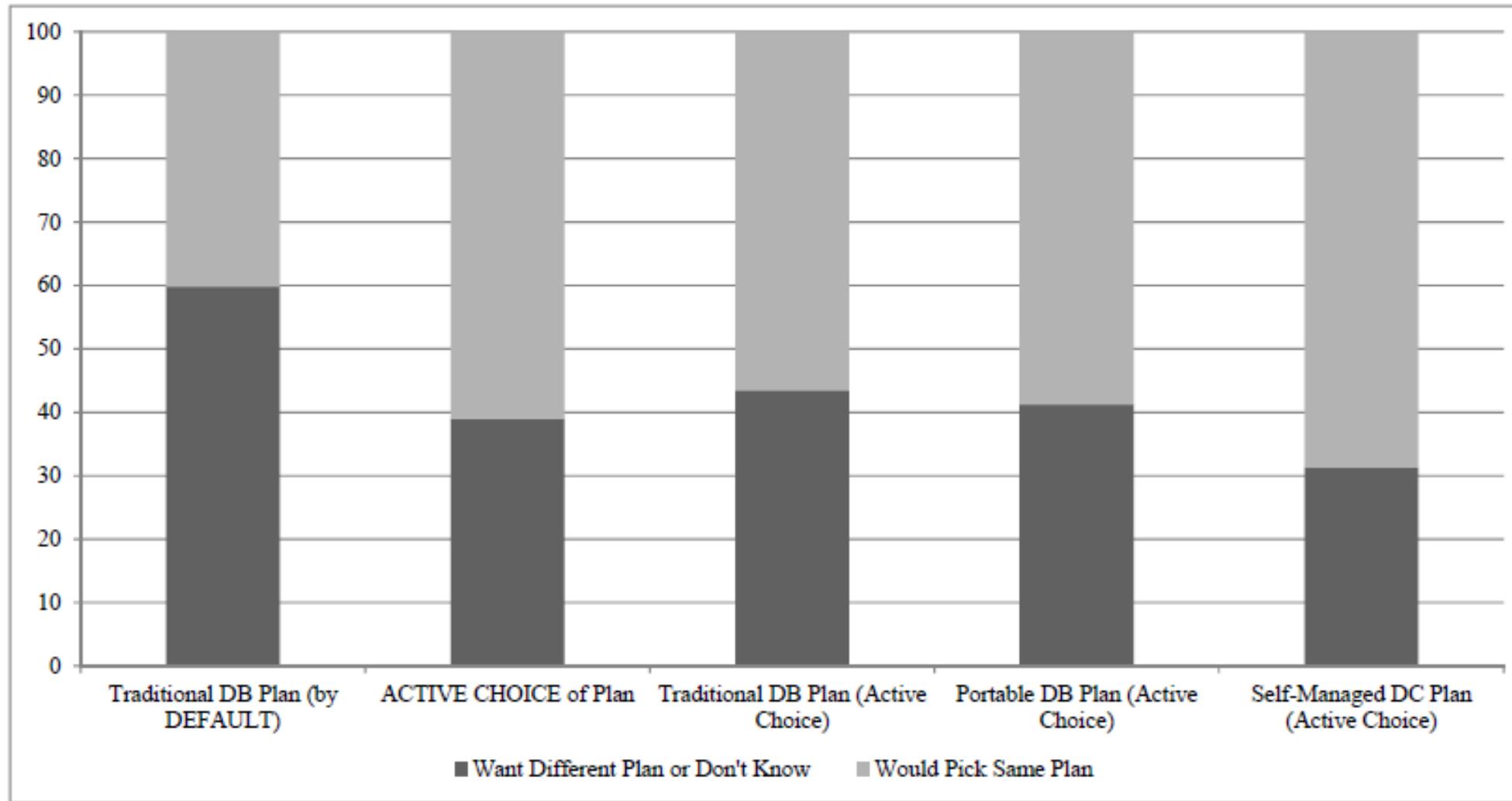
If make no active choice within 6 months, are irrevocably defaulted into the Traditional DB plan

# POTENTIAL CONSEQUENCE OF AUTOMATIC ENROLLMENT

Brown, Farrell, and Weisbenner (2016) find a strong determinant of default behavior is being a procrastinator

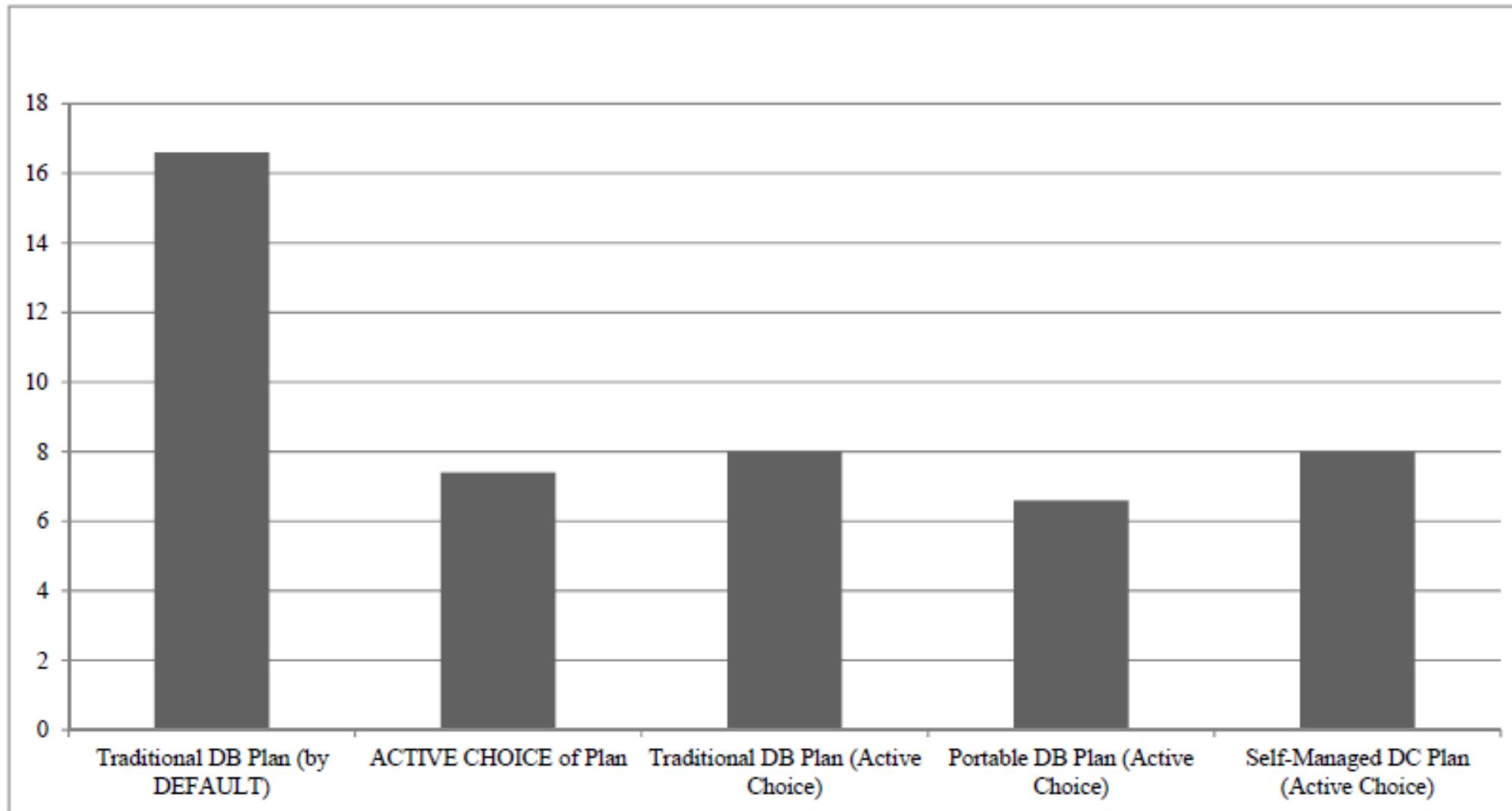
Also find that those that were defaulted into the Traditional DB plan are less likely to choose the same plan today than those who made an active choice (particularly true among procrastinators)

# POTENTIAL CONSEQUENCE OF AUTOMATIC ENROLLMENT



Source: Brown, Farrell, & Weisbennner (2016, Figure 1)

# % WOULD STRONGLY DESIRE A DIFFERENT PLAN



Source: Brown, Farrell, & Weisbennner (2016, Figure 2)

# POWER OF DEFAULTS

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What are incentives of those establishing the default?

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- Brown, J. R., Farrell, A. M., & Weisbenner, S. (2016). Decision-making approaches and the propensity to default: Evidence and implications. *Journal of Financial Economics*, 121(3), 477-495.
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Utkus, S. P., & Young, J. A. (2014). *How America saves 2014: A report on vanguard 2013 defined contribution plan data*. Valley Forge, PA: The Vanguard Group, Inc.

# INVESTMENTS II: LESSONS & APPLICATIONS FOR INVESTORS

SCOTT WEISBENNER

## Investment Decisions in DC Pension Plans

Bottom Line on Biases in Investment Decisions



# BOTTOM LINE ON BIASES IN 401(K) PLANS

Not surprising a lot of behavioral biases surface in 401(k) plan investing

Democratization of investing!

Plan design very important and can influence participants in ways a “rational” model would not predict

Endorsement effect, naïve diversification, etc.

# BOTTOM LINE ON BIASES IN 401(K) PLANS

Defaults are powerful (but be careful with the power!)

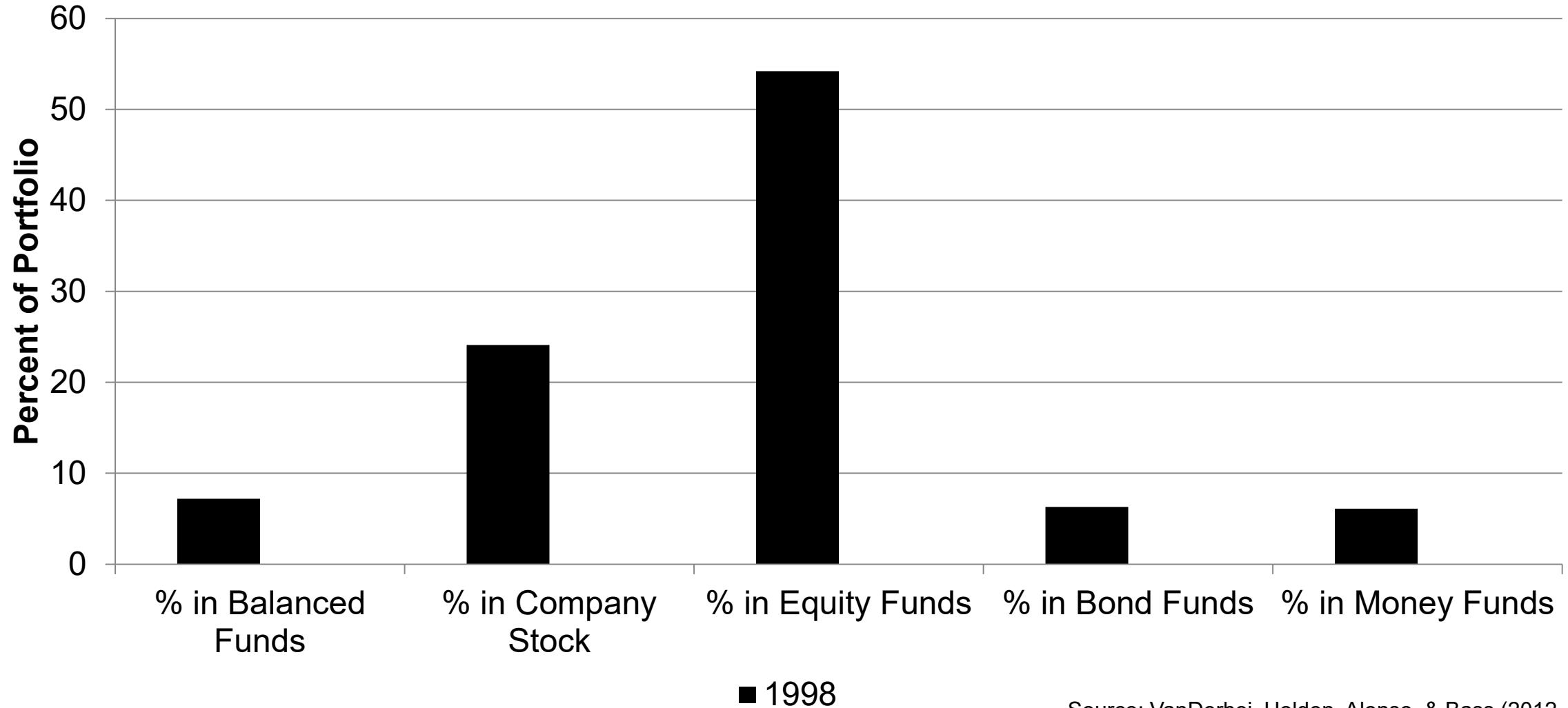
How about biases of people who design the plan and select the funds?

# HOW ARE INDIVIDUALS DOING IN THEIR DC PENSION PLANS?

# DRAMATIC CHANGE IN PENSION ASSET ALLOCATION FROM 1998 TO 2011!

# BEHAVIOR OF NEW HIRES: 1998

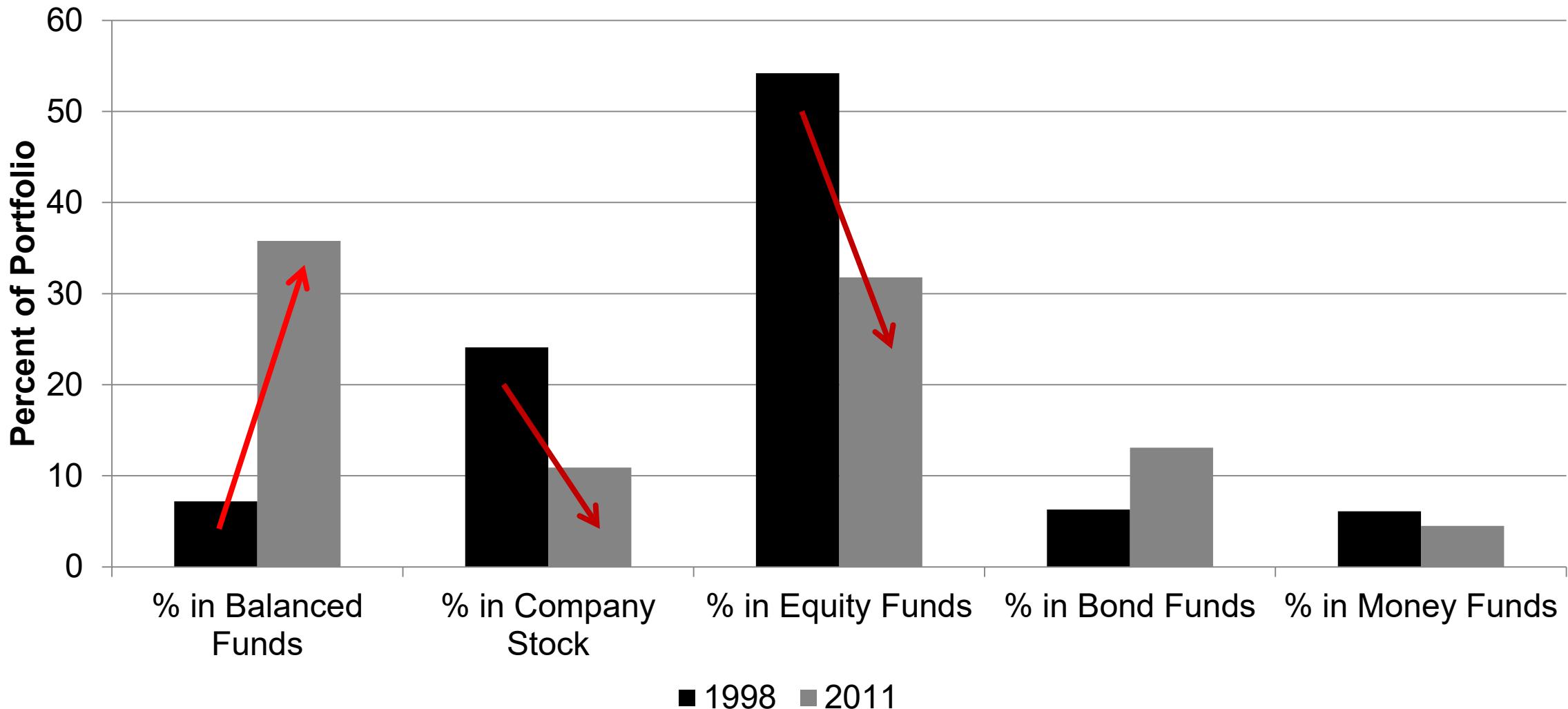
Average Asset Allocation:



Source: VanDerhei, Holden, Alonso, & Bass (2012, Figure 39)

# BEHAVIOR OF NEW HIRES: 1998 AND 2011

Average Asset Allocation:

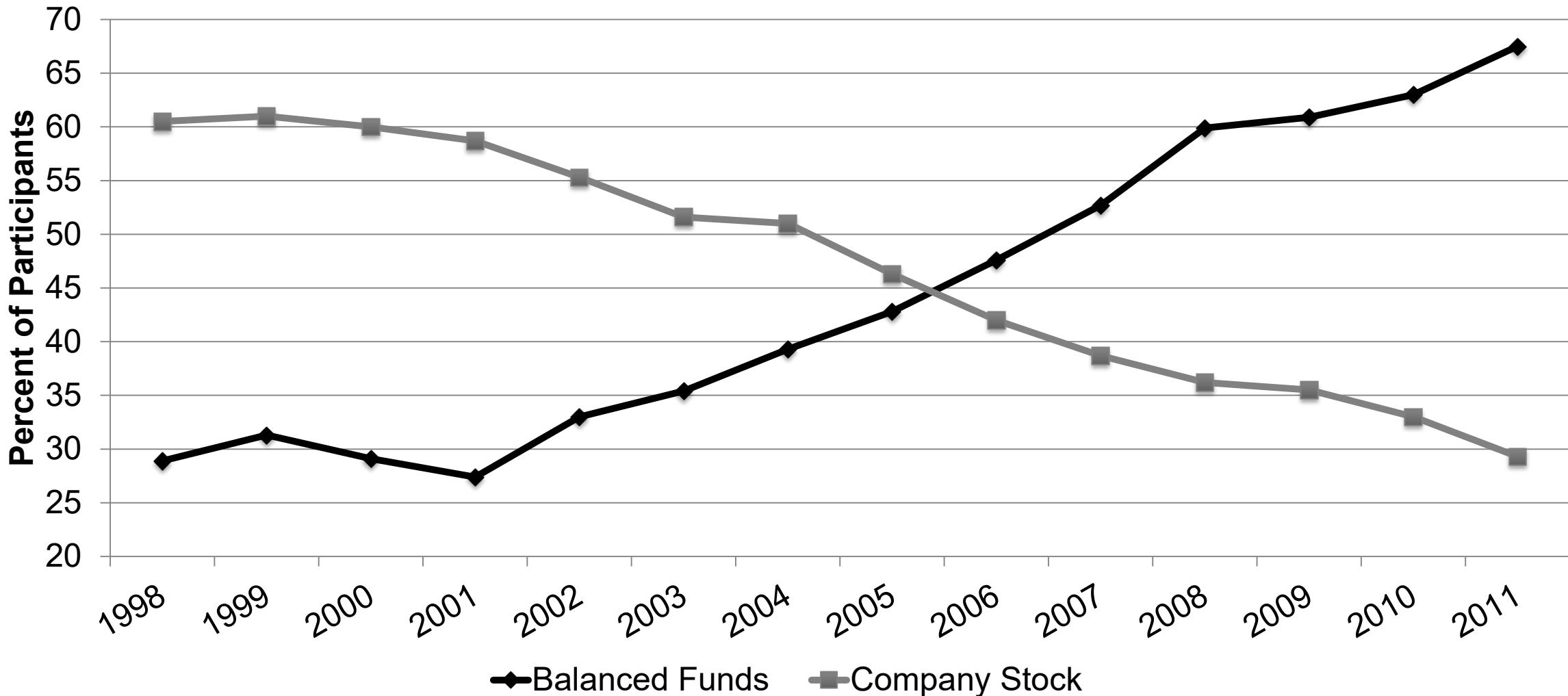


Source: VanDerhei, Holden, Alonso, & Bass (2012, Figure 39)

# BEHAVIOR OF NEW HIRES



Percent of Recent Hires that invest in:



Source: VanDerhei, Holden, Alonso, & Bass (2012, Figures 34 and 40)

# WHAT IS GOING ON HERE?

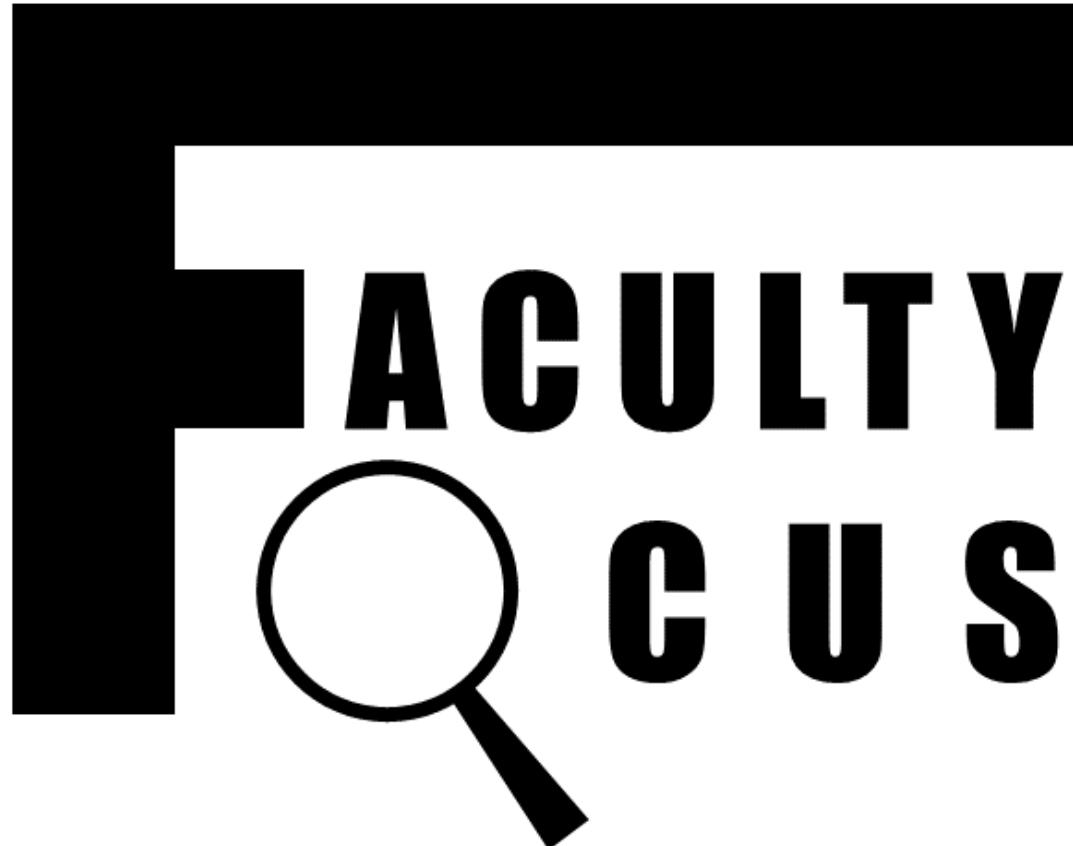
Big change in retirement plan landscape is  
use of default options

Government regulations in 1998 and 2001  
allowed firms to “auto enroll” employees in  
pension plans (employees can opt out if  
wishes)

Best choice may be no choice!

**STAY TUNED ...  
FACULTY FOCUS EPISODE!**

w / Scott Weisbennner



# **STAY TUNED ... FACULTY FOCUS EPISODE!**



Source: Image from College of Business,  
University of Illinois at Urbana-Champaign/Grant Czadzeck

# REFERENCES

VanDerhei, J., Holden, S., Alonso, L., & Bass, S. (2012). 401(k) plan asset allocation, account balances, and loan activity in 2011. *EBRI Issue Brief*, No. 380. Washington, DC: Employee Benefit Research Institute.