



**Observations on
“Heterogeneity in Target-Date Funds and the
Pension Protection Act of 2006”**

By Pierluigi Balduzzi and Jonathan Reuter

Mark J. Warshawsky
Director of Retirement Research
Towers Watson

*Retirement Research Consortium
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PPA/DOL Regulation Has Indeed Had a Big Impact on DC Plan Sponsor Choice of the Default Investment Fund

	<i>Percent of sponsors</i>	
	<u>2006</u>	<u>2010</u>
TDF	38%	72%
Stable-Value	27	6
Money-Market	18	2
Balanced	8	13
Managed Account	0	4
Other or None	8	4

Source: Towers Watson surveys (2006 and 2010)

Reminder - Why We Have TDFs

Range of equity allocations of DC accounts (%) by age

Age	Percentage of account balance allocated to equity						Total	% of sample
	0%	1-24%	25-49%	50-74%	75-99%	100%		
25-34	24.9	5.8	18.4	19.1	13.5	18.3	100.0	16.6
35-44	17.9	8.3	12.5	23.6	10.7	26.9	100.0	27.1
45-54	15.0	9.0	17.6	24.3	12.2	21.9	100.0	32.3
55-64	24.3	7.0	10.8	21.0	9.7	27.2	100.0	19.7
65-74	20.8	8.5	17.0	25.1	9.5	19.2	100.0	4.3
All households	20.1	7.9	14.8	22.6	11.3	23.3	100.0	100.0

Notes: The sample includes households with at least one member working. IRAs are excluded.

Source: Towers Watson's calculations based on the 2007 Survey of Consumer Finances.

Why Target-Date Funds Might Be Preferred to Balanced Funds

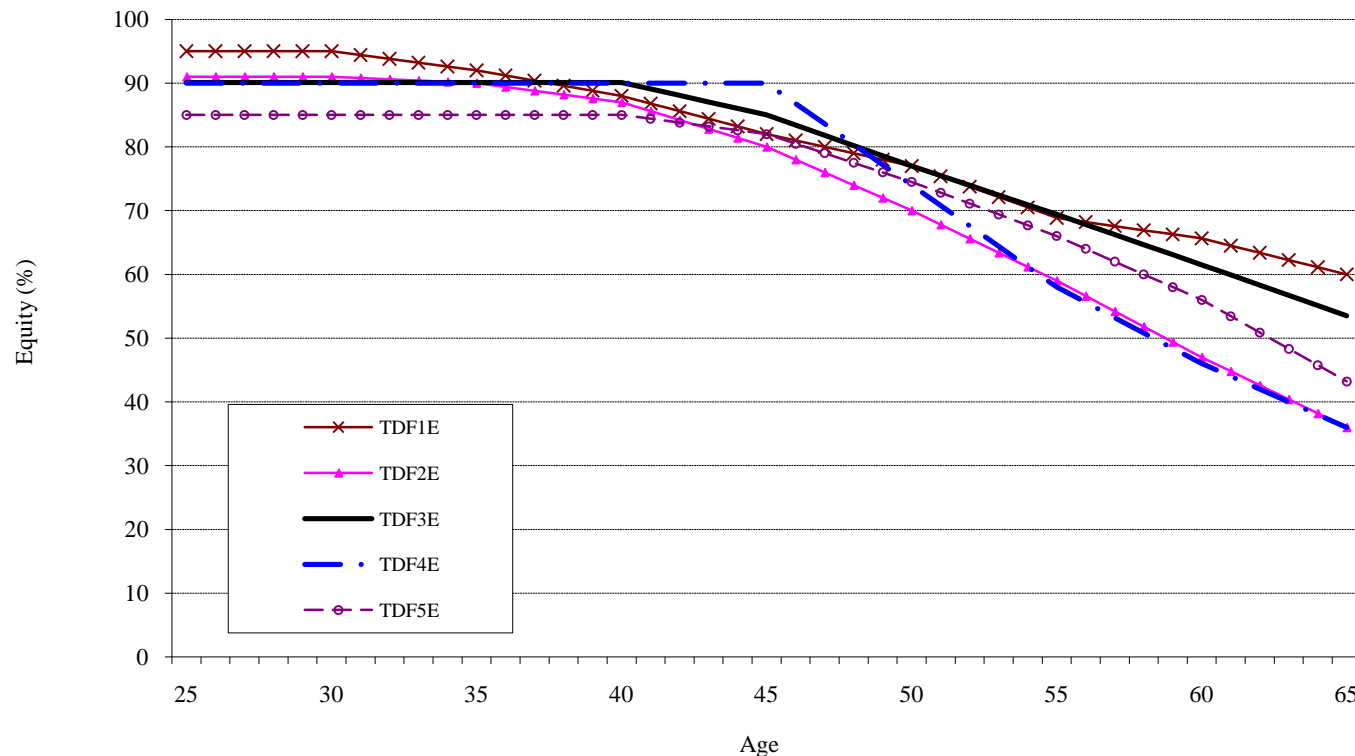
Simulated Terminal Wealth (\$1000) at Age 65 for a Long-Career Worker in a DC Plan: Comparing Balanced and Target-Date Funds

<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>	
Balanced Fund	TD Fund	Balanced Fund	TD Fund	Balanced Fund	TD Fund
447.5	438.6	528.7	513.8	359.8	303.4

Source: Pang and Warshawsky (2009)

There is Indeed Wide Variation Among TDFs, for Both Early-Career Workers...

TDF Asset Allocations for Early-Career Workers

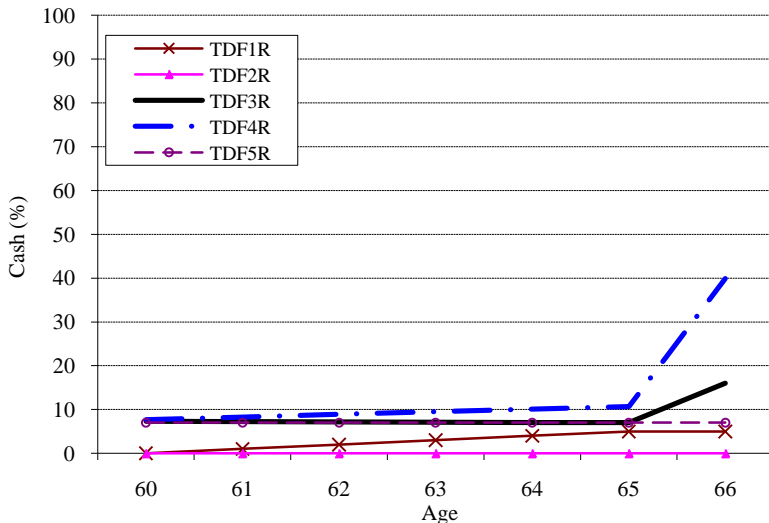
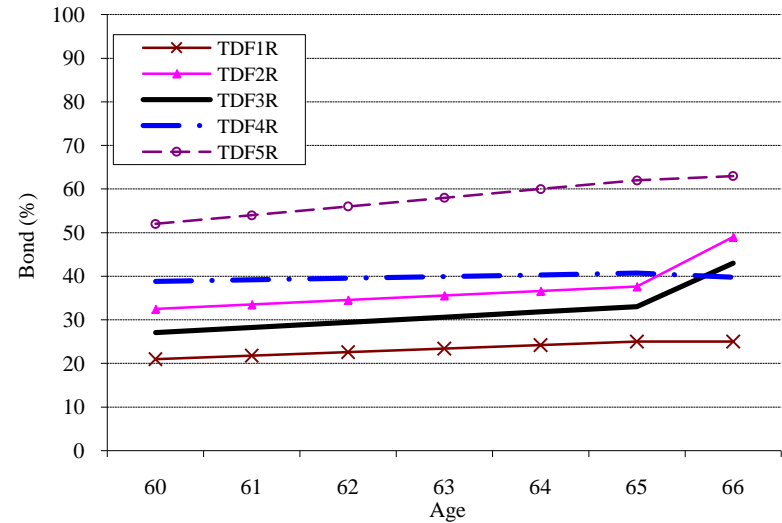
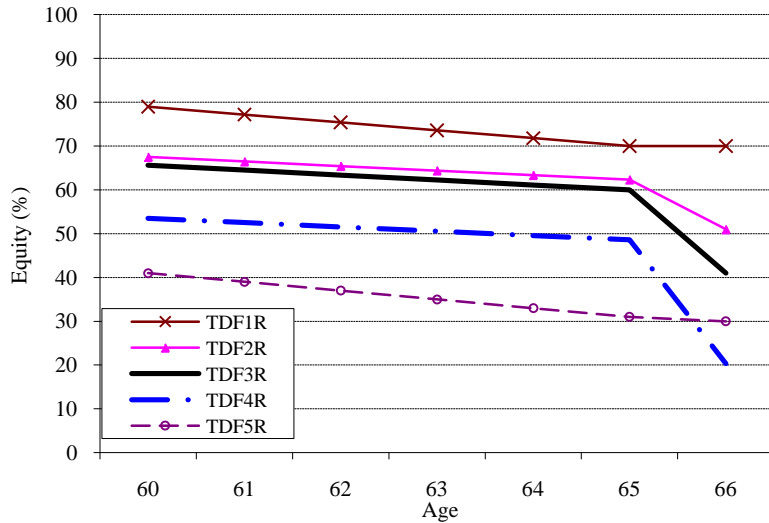


Notes: The ordering of TDFs are identified by equity allocations in 2050 TDFs, with bond and cash allocations collected correspondingly. The glide paths are constructed by connecting all TDFs for each fund family. Allocations for ages between target dates are linearly interpolated.

Source: Pang and Warshawsky (2010) – data collection from Morningstar and TDF providers' websites
As of May 31, 2009

...and for Retiring Workers

TDF Asset Allocations for Retiring Workers



Notes: The ordering of TDFs are identified by equity allocations in 2015 TDFs, with bond and cash allocations collected correspondingly. The glide paths are constructed by connecting all TDFs for each fund family. Allocations for ages between target dates are linearly interpolated.

Source: Pang and Warshawsky (2010) -- data collection from Morningstar and TDF providers' website as of May 31, 2009

The Range of Possible Final Outcomes perhaps Suggests a Higher Risk Choice Among TDFs for Early-Career Workers.....

Simulated Terminal Wealth at age 65 (\$000, real) for an Early-Career DC Investor

	1%tile	5%tile	25%tile	50%tile	75%tile	95%tile	99%tile	Mean	Std.Dev.
TDF1E	33.9	91.1	238.6	342.1	451.8	654.4	839.0	353.9	171.5
TDF2E	34.0	88.8	237.4	332.3	427.3	595.1	748.7	336.5	153.0
TDF3E	33.1	89.6	241.1	345.3	454.3	655.2	836.8	355.8	171.8
TDF4E	33.5	87.8	239.5	337.5	436.4	612.2	773.8	342.9	158.9
TDF5E	32.9	88.4	240.3	340.6	443.6	629.6	799.2	348.1	163.6

Source: Pang and Warshawsky (2010)

...but a Lower Risk Choice for Retiring Workers

Simulated Terminal Wealth at age 65 (\$000, real) for a Retiring DC Investor

	1%tile	5%tile	25%tile	50%tile	75%tile	95%tile	99%tile	Mean	Std.Dev.
TDF1R	112.9	358.8	525.8	651.2	801.4	1087.2	1364.6	676.6	237.7
TDF2R	119.7	372.7	532.0	647.3	785.5	1041.1	1284.2	667.8	217.6
TDF3R	127.6	378.6	532.7	643.2	774.5	1018.9	1246.8	662.0	208.2
TDF4R	138.6	399.5	538.1	635.4	748.7	950.2	1137.9	647.8	181.7
TDF5R	146.5	417.5	541.3	625.8	720.7	887.0	1030.4	631.7	156.6

Source: Pang and Warshawsky (2010)

Even this Last Inference is Unclear, however, Because of the “to” versus “through” Controversy

Probability distribution of simulated income outcomes (\$000, real) over all years in retirement, conditional on survival – systematic withdrawal of fixed 7% of balance

	1%tile	5%tile	25%tile	50%tile	75%tile	95%tile	99%tile	Mean	Std.Dev.	Prob. <\$25k
TDF1R	2.3	6.7	18.8	29.7	42.4	67.0	95.1	32.6	20.6	39.0
TDF2R	2.4	6.7	18.6	28.9	40.7	62.3	85.1	31.2	18.3	40.3
TDF3R	2.6	6.8	17.9	27.7	38.9	58.4	77.9	29.6	16.6	43.0
TDF4R	2.7	6.6	16.2	25.4	35.7	52.0	66.1	26.9	14.3	48.9
TDF5R	2.5	6.6	17.4	26.9	36.9	52.1	65.7	27.9	14.2	44.9

Probability distribution of simulated payouts (\$000, real) over all years in retirement, conditional on survival - purchase at retirement of a single premium fixed nominal payout life annuity

	1%tile	5%tile	25%tile	50%tile	75%tile	95%tile	99%tile	Mean	Std.Dev.	Prob. <\$25k
TDF1R	3.0	9.3	23.9	36.2	51.0	79.3	109.9	39.4	22.7	27.1
TDF2R	3.1	9.5	24.1	36.1	50.2	76.5	103.9	38.9	21.5	26.8
TDF3R	3.2	9.6	24.1	35.9	49.8	75.2	101.7	38.5	21.0	26.9
TDF4R	3.4	9.9	24.1	35.6	48.6	71.5	94.2	37.6	19.4	26.7
TDF5R	3.5	10.0	24.1	35.2	47.2	67.5	86.4	36.6	17.9	26.8

Source: Pang and Warshawsky (2010)

Also Note that the Financial Crisis has Influenced TDF Glide Paths

Equity Share of the 2010 TDF

	<u>May-2009</u>	<u>Apr-2010</u>
TDF1	69%	52%
TDF3	60%	49%
TDF5	50%	46%

Source: Pang and Warshawsky (2011)

Some Concluding Observations and Comments

- Public policy has had a big impact on the plan sponsor, and by extension, plan participant, behavior of investment choices
- Heterogeneity of outcomes is a natural and appropriate consequence of markets, given structure of DC plans
- Main disappointment of older workers, to my understanding, was that they lost any money in TDFs in their DC plan post-crisis
- Better disclosure seems like a reasonable policy response, not mandates which substitute judgment of regulators
- More clarity and understanding needed on retirement distribution strategies and products