Delphi Survey Retirement System
Results from Round I

August, 2006

Delphi Survey: Retirement System Round 1

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Delphi Survey: Retirement System Round 1
Executive Summary

As part of the recent *Re-Envisioning Retirement* symposium, held in May in Washington DC, symposium attendees completed a Delphi survey covering challenges to today's retirement system. We wanted to use the symposium to start a conversation with actuaries and other retirement practitioners on the state of the retirement system today, and what we see as the challenges to the system in the future. As part of the *Retirement 20/20* project, we're going to continue to use the Delphi survey to gather information from a wider range of experts and use the results of the study to start conversations about what we need from a 21st century retirement system.

We asked questions along four broad categories: What risks should be pooled, what should any retirement policy framework look like, and what are the threats to the retirement system. Answers ran the gamut and showed we have no consensus, even within our small sample of actuaries. On some things the answer was clear; for example, there was strong agreement that the health care system needed fixing. But there wasn't uniform agreement as to how the system should look going forward. This helps us identify that there are lots of open areas for discussion. But, it also makes it very important for us to hear from **you**.

Interested parties may take the survey at www.retiremetn2020.soa.org. Please note that we've made revisions to the survey based on feedback from those who took it, including rescaling the range of choices. For ease in comparability, the first round results have been rescaled to match the new rating system.

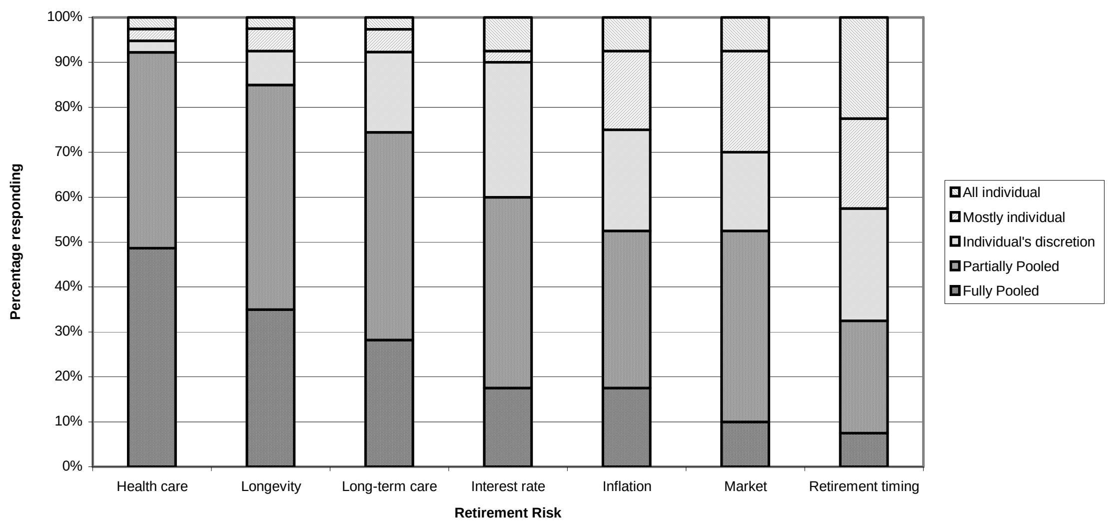
What risks should be pooled

Forty-one people took the survey in round one, thirty-five of them actuaries. Approximately 73% worked at private, for-profit institutions with another 15% at universities. About 40% were "baby boomers" and 10% had already reached age 65. 66% were male, 34% were female.

The first question in the survey was on risk pooling: to what degree should certain retirement risks be pooled? We looked at seven major retirement risks: retirement timing (the risk you retire before you expect), inflation, interest rate (with regards to annuity purchase or taking lump sums), market returns, longevity, long-term care and health care. Figure I shows the results:

- Respondents were pretty clear that three risks ought to be fully- or partially pooled: health (92%), longevity (85%) and long-term care (74%). .
- 43% felt that retirement timing risk should be borne mostly or entirely by individuals, 30% thought individuals should mostly or entirely bear market risks and 25% thought individuals should mostly or entirely bear inflation risk.
- Respondents generally felt individuals could or should be allowed to decide what risks to bear, except in the case of health care, longevity and long-term care risks where respondents strongly favored pooling.

Figure I
To What Degree Should These Risks Be Pooled in a Retirement System?



What Should Retirement Policy Look Like?

The next series of questions looked at what role the employer should play in any retirement system we have. Not surprisingly, everyone who took the survey (which was heavily biased toward consulting actuaries) thought the employer should play some role, although respondents split as to whether that role should be mandatory (44%) or voluntary (56%). Respondents were also split as to whether participation should include any minimums. There's been much controversy in the U.S. about the role of minimums in the current system (e.g. in coverage and amount of benefits). Of the 56% who preferred a voluntary role for employers, only 44% of those felt that should include a minimum, and of the 44% who preferred a mandatory role for employers, 61% of those thought that should include employer minimums.

The next question in that series considered what role the employer should have in any retirement system. Only 7 of 41 respondents thought the employer's role should be limited to acting as a conduit to plans maintained by others, sponsoring plans but bearing no cost, or sponsoring plans but bearing only administrative costs. The other 34 were split between those who thought the employers should bear administrative and benefit related costs, similar to a defined contribution plan (46%) and those who thought the employer should bear administrative, benefit and risk-related costs, similar to a defined benefit plan (54%)

The next question asked what role government should play in providing retirement benefits. Respondents clearly favored a basic level of benefits for low-paid and middle class (78%), while 17% preferred that the government provide minimum assistance for low-paid only.

Necessary Changes to Retirement System

We then asked what level of urgency people saw in terms of making changes to the retirement system. They were asked about specific changes to the system and were asked to rate the urgency of that change using a scale of 1 (not at all urgent) to 5 (extremely urgent) and to use 0 if they felt change was unnecessary. Again, there was a wide range of responses and not always a lot of agreement. Figure II shows the mean, median and standard deviation of responses.

Fixing health care affordability and availability was the most urgent issue identified by survey participants (average urgency ranking 4.4). Following health care were raising the Social Security normal retirement age (3.9), bringing Social Security into balance by making small changes to current system (3.7), restructuring the long-term care system (3.7), formalizing and/or encouraging phased retirement (3.6) and easing DC plan annuitization (3.5).

A sizable minority felt that some changes were not necessary. 29% felt it was not necessary to raise Social Security early retirement age, 24% felt it was not necessary to raise the private system normal retirement age, 21% felt it was not necessary to make dramatic changes to the existing Social Security system or to force partial individuals to have some portion of annuitized benefits.

Figure II

Which of the following are necessary changes to the retirement system?

Rate the urgency of change from 1 (not at all urgent) to 5 (extremely urgent). Rate as 0 for "not a necessary change"	Percentage ranking as "0"	Urgency ranking (including those ranking 0)		
		Mean	Median	Standard Deviation
Bring Social Security into balance	5%	3.7	4.0	1.4
Rework Social Security (dramatic)	21%	2.3	2.0	1.8
Raise Social Security normal retirement age	5%	3.9	4.0	1.3
Raise Social Security early retirement age	29%	2.6	3.0	1.9
Mandatory retirement savings	18%	2.9	3.0	1.7
Increase coverage in DB plans	16%	2.8	3.0	1.7
Increase coverage in DC plans	19%	2.8	3.0	1.7
Raise private system normal retirement age	24%	2.7	3.0	1.8
Formalize/encourage phased retirement	3%	3.6	4.0	1.3
"ERISA"-fy DC auto-pilot	18%	2.7	3.0	1.5
Ease DC plan annuitization (full/partial)	8%	3.5	4.0	1.3
Force partial annuitization	21%	2.8	3.0	1.8
Allow step-up benefits (DB)	16%	2.8	3.0	1.6
Fix health care affordability/availability	5%	4.4	5.0	1.2
Restructure long-term care system	3%	3.7	4.0	1.2

Threats to the Retirement System

Finally, the last question asked of Delphi study participants was about threats to the retirement system. We asked people to consider certain economic and demographic changes and what level of threat they posed to the system. Again, participants elected "0" if they saw no threat at all, 1 if the threat was ignorable, and 5 if the threat represented the perfect storm.

Participants looked at the threat level immediately, and again ten years from now. This allowed participants to indicate if the threat was constant, declining or emerging. Figure III shows perceived threat in the immediate future. Figure IV shows the change in the perceived threat from the immediate future to 10 or more years from now.

Consistent with other responses, the highest threat ranking was for issues with the health system (4.1) followed by level of debt/lack of savings for individuals (3.6) and for government (3.5). Issues with the public long-term care system (Medicaid in the US) and the public retiree health insurance system (Medicare in the US) were each ranked a 3.3. Certain items were not perceived to be an immediate threat by a sizable minority, including low interest rates and low birth rates.

Figure III
Rate the threat the following problems pose to the retirement system

Rate from 1 (ignorable) to 10 (perfect storm) Rate as 0 for "no threat"	Percentage ranking as "0"	Threat ranking (including those ranking 0)		
		Mean	Median	Standard Deviation
Level of debt/lack of savings (personal)	0%	3.6	4.0	1.4
Level of debt (government)	0%	3.5	4.0	1.1
Global competition	9%	2.7	3.0	1.5
Transition from an industrial economy	9%	2.4	2.0	1.4
Transition to a knowledge economy	12%	2.0	2.0	1.1
Jobs not available for older workers	3%	2.6	3.0	1.2
Job shortages (domestic)	6%	2.1	2.0	1.2
Low interest rates	22%	2.1	2.0	1.5
Low supply of long bonds	11%	2.2	2.5	1.3
Lack of supply of longevity bonds	14%	1.9	2.0	1.3
Markets inefficiencies (retirement risk hedging)	15%	2.4	3.0	1.5
Interest rate volatility	3%	2.8	3.0	1.2
Stock market returns	6%	2.4	3.0	1.3
Stock market volatility	3%	2.7	3.0	1.3
Increasing income/wealth disparity	8%	3.1	3.0	1.5
Other economic factors	4%	2.9	3.0	1.2

Figure III
Rate the threat the following problems pose to the retirement system

Rate from 1 (ignorable) to 10 (perfect storm) Rate as 0 for "no threat"	Percentage ranking as "0"	Threat ranking (including those ranking 0)		
		Mean	Median	Standard Deviation
Low birth rates	18%	1.9	2.0	1.4
Retirement of baby boom	3%	2.8	3.0	1.1
Longevity increases	6%	2.6	3.0	1.3
Cohort longevity increases	11%	2.0	2.0	1.4
Longevity uncertainty	6%	2.3	2.0	1.3
Health care system (issues with)	3%	4.1	4.0	1.0
Long-term care system (issues with)	3%	3.3	3.0	1.0
Public social insurance system	6%	3.0	3.0	1.4
Public retiree health insurance system	6%	3.3	3.5	1.3
Public long-term care system	6%	3.0	3.0	1.3

When considering how threat levels change over time certain factors came out as emerging threats. Concerns with the health care system top both the immediate and 10+ year list. However, several issues are viewed as being more critical 10 years from now:

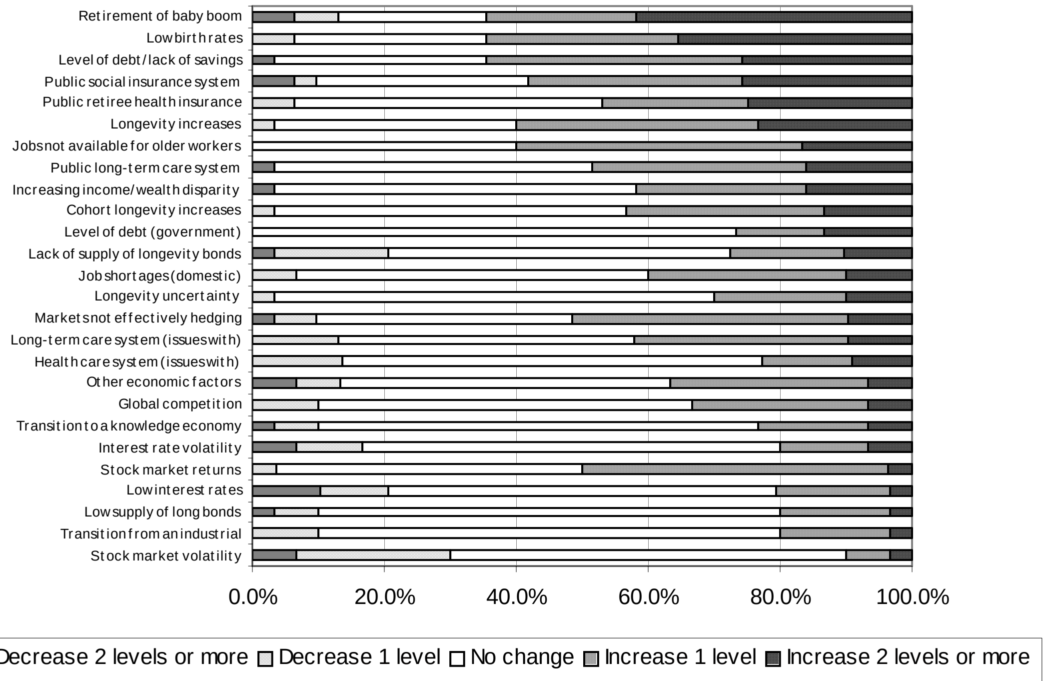
- The retirement of the baby boom moved from tied to 10th as an immediate threat to tied for 5th in the rankings of threats 10 years from now levels.
- Low birth rates rose from last (tie for 25th) on the list of immediate threats to a tie for 12th on the list of threats ten years from now
- Longevity increases rose from a tie for 14th (immediate threat) to 9th (threat 10 years from now).

Several factors are seen as being less threatening 10 years from now.

- One third of respondents thought low interest rates would be less of a threat to the system 10 years from now.
- Similarly, they saw the transition to a knowledge economy and the transition from an industrial economy to be less of a threat to the system in 10+ years (30% and 27% respectively decreased their threat level).

Other factors aren't seen as changing in regards to the level of threat they pose to the system. Two-thirds or more of the respondents didn't see any changing threat, increase or decrease, from stock market volatility, stock market returns, the market's ability to hedge retirement risks, uncertainty about longevity or the effect of cohort longevity increases.

Figure IV
Distribution of Change in Threat -
Immediate future versus 10+ years from now



About the Survey

In a Delphi study, a group of subject matter experts are asked about future states: what might, should or could happen. The idea is that while these subject matter experts as individuals may have biases or incomplete information, collectively, as a group, their knowledge and information improves. In the analysis of the survey, as with any survey, the researcher then looks for patterns in responses. If the group of subject matter experts clusters around certain answers, then there is probably some truth in their answer. This works best when the individuals each have a lot of knowledge but they don't all have the same knowledge or similar biases. For example, asking a national cross section of knowledgeable baseball fans "Who will play in the 2007 World Series?" might get you a pretty good result, but asking only Boston based fans might overstate the chances that the Red Sox will still be playing in October.

What's unique to a Delphi study is that once a first round of results has been obtained, subject matter experts are resurveyed with first round results at hand. This gives an opportunity for the subject matter experts to refine their estimates based on the information provided by the other experts. Note this survey is intended to mimic a Delphi Study, but as we're not doing it with the formality of a typical Delphi study, we'll refer to it as a Delphi survey.

What do you think?

If you're interested in adding your point of view to the survey, you can take it electronically at www.retirement2020.soa.org. We want to know what you think too. You're welcome to invite clients, colleagues and others to take the survey as well. We'll keep you posted on what we get from round 2!

Delphi Survey: Retirement System Round 1

Appendix A: Survey Results

Table I: Background (n=41)	
Profession	
4.5	Academic
35	Actuary
1.5	Other
0	List detail other
Employer	
3	Government
6	University
30	Private/for-profit
1	Other non-for-profit
1	Other
	List detail other
Age	
6	Under 35
14	35-44
11	45-54
6	55-64
4	65+
Gender	
27	Male
14	Female

Note: for purposes of Round I, the study was given at an actuarial meeting where most of the participants were actuaries. Professional Categories have since been expanded and will be reflected in later rounds

II – Retirement Risk

Full Question: The defined benefit (DB) system sheltered many individuals from certain retirement risks. A defined contribution (DC) only system would have all risks borne by individuals. What sort of risk pooling is valuable to individuals, economies and taxpayers? Which retirement risks do you think ought to be pooled (or insured) and which should be borne by individuals? To what degrees should risks automatically be pooled, held by individuals, or left to individuals to pool or not pool?

Note: please consider middle-income individuals – neither very poor nor very rich when answering the question.

Results were sorted based on participant responses.

Table II. A
Question II, Retirement risks borne by middle-income individuals
N=41

Risk	Fully Pooled	Partially Pooled	Individual's discretion	Mostly individual	All individual	No answer
Health care	19	17	1	1	1	2
Longevity	14	20	3	2	1	1
Long-term care	11	18	7	2	1	2
Interest rate (annuity purchase)[1]	7	17	12	1	3	1
Inflation	7	14	9	7	3	1
Market	4	17	7	9	3	1
Retirement timing[2]	3	10	10	8	9	1

Table II. B
Question II, Retirement risks borne by middle-income individuals
By % of those responding (excluding No Answer)

Risk	Fully Pooled	Partially Pooled	Individual's discretion	Mostly individual	All individual	No Answer
Health care	48.6%	43.6%	2.6%	2.6%	2.6%	NA
Longevity	35.0	50.0	7.5	5.0	2.5	NA
Long-term care	28.2	46.2	17.9	5.1	2.6	NA
Interest rate (annuity purchase)[1]	17.5	42.5	30.0	2.5	7.5	NA
Inflation	17.5	35.0	22.5	17.5	7.5	NA
Market	10.0	42.5	17.5	22.5	7.5	NA
Retirement timing[2]	7.5	25.0	25.0	20.0	22.5	NA

[1] As opposed to interest on bonds and other interest bearing investments, which are classified below as market risks.
[2] Risk that you may be forced to retire earlier than you had planned.

This question was originally posed using a 1-10 scoring system. For original results, please see Table III.C

Table III.A
Question III.4, Part A, Revised Scoring System
N = 41

III.4. Which of the following do you see as necessary changes to the retirement system? Part A – urgency of change (1-5 scoring system)	Number responding	Not necessary (Score = 0)	Mean	Median	Standard Deviation
Bring Social Security into balance		2	3.7	4.0	1.4
Rework Social Security (dramatic)	37	8	2.3	2.0	1.8
Raise Soc Sec normal retirement age	38	2	3.9	4.0	1.3
Raise Soc Sec early retirement age	38	11	2.6	3.0	1.9
Mandatory retirement savings	38	7	2.9	3.0	1.7
Increase coverage in DB plans	38	6	2.8	3.0	1.7
Increase coverage in DC plans	37	7	2.8	3.0	1.7
Raise private system NRA	37	9	2.7	3.0	1.8
Formalize/encourage phased ret	38	1	3.6	4.0	1.3
“ERISA”-fy DC auto-pilot	38	7	2.7	3.0	1.5
Ease DC plan annuitization (full/partial)	38	3	3.5	4.0	1.3
Force partial annuitization	37	8	2.8	3.0	1.8
Allow step-up benefits (DB)	38	6	2.8	3.0	1.6
Fix health care affordability/availability	38	2	4.4	5.0	1.2
Restructure long-term care system	38	1	3.7	4.0	1.2

This question was posed using three timeframes: next a 5 years, 5-10 years, 10 or more years. For complete results with all three timeframes, please see Table III.D

Table III.B
Question III.4, Part B, Revised Scoring System
N = 41

III.4. Which of the following do you see as necessary changes to the retirement system? Part B – Timeframe for change	Next 10 years	10+ Years	Don’t change	No Answer
Bring Social Security into balance	33	3	1	4
Rework Social Security (dramatic)	16	8	12	5
Raise Soc Sec normal retirement age	32	3	1	5
Raise Soc Sec early retirement age	26	0	10	5
Mandatory retirement savings	26	4	7	4
Increase coverage in DB plans	25	3	8	5
Increase coverage in DC plans	27	1	8	5
Raise private system NRA	26	3	8	4
Formalize/encourage phased ret	32	3	1	5
“ERISA”-fy DC auto-pilot	30	0	8	3
Ease DC plan annuitization (full/partial)	31	1	4	5
Force partial annuitization	24	4	8	5
Allow step-up benefits (DB)	29	3	6	3
Fix health care affordability/availability	35	1	2	3
Restructure long-term care system	33	2	1	5

This question was originally posed using a 1-10 scoring system. For original results, please see Table IV.C

Table IV.A
Question IV.4, Part A, Revised Scoring System
N=37 (Four participants reported on a country other than the US)

Rate the following problems threatening the retirement system based on the level of threat they pose to the retirement system Part A: Immediate Future Level of threat : 0 = none, 1 = ignorable, 5 = perfect storm	Number responding	Responding Zero (No threat)		Mean	Median	Standard Deviation
		Number	Percentage of respondents			
Level of debt/lack of savings (individual)	36	0	0%	3.6	4.0	1.4
Level of debt (government)	36	0	0	3.5	4.0	1.1
Global competition	34	3	9	2.7	3.0	1.5
Transition from an industrial economy	35	3	9	2.4	2.0	1.4
Transition to a knowledge economy	34	4	12	2.0	2.0	1.1
Jobs not available for older workers	35	1	3	2.6	3.0	1.2
Job shortages (domestic)	34	2	6	2.1	2.0	1.2
Low interest rates	36	8	22	2.1	2.0	1.5
Low supply of long bonds	36	4	11	2.2	2.5	1.3
Lack of supply of longevity bonds	35	5	14	1.9	2.0	1.3
Markets ineffectively hedging ret. risks	34	5	15	2.4	3.0	1.5
Interest rate volatility	33	1	3	2.8	3.0	1.2
Stock market returns	35	2	6	2.4	3.0	1.3
Stock market volatility	34	1	3	2.7	3.0	1.3
Increasing income/wealth disparity	36	3	8	3.1	3.0	1.5
Other economic factors	24	1	4	2.9	3.0	1.2
Low birth rates	34	6	18	1.9	2.0	1.4
Retirement of baby boom	35	1	3	2.8	3.0	1.1
Longevity increases	35	2	6	2.6	3.0	1.3
Cohort longevity increases	35	4	11	2.0	2.0	1.4
Longevity uncertainty	36	2	6	2.3	2.0	1.3
Health care system (issues with)	37	1	3	4.1	4.0	1.0
Long-term care system (issues with)	36	1	3	3.3	3.0	1.0
Public social insurance system	35	2	6	3.0	3.0	1.4
Public retiree health insurance system	36	2	6	3.3	3.5	1.3
Public long-term care system	34	2	6	3.0	3.0	1.3

This question was originally posed using a 1-10 scoring system. For original results, please see Table IV.C

Table IV.B
Question IV.4, Part B, Revised Scoring System
N=34

Rate the following problems threatening the retirement system based on the level of threat they pose to the retirement system Part B: 10+ Years from Now Level of threat : 0 = none, 1 = ignorable, 5 = perfect storm	Number responding	Responding Zero (No threat)		Mean	Median	Standard Deviation
		Number	Percentage of respondents			
Level of debt/lack of savings (individual)	33	0	0%	4.4	5.0	0.8
Level of debt (government)	32	0	0	4.0	4.0	1.0
Global competition	29	3	10	2.9	3.0	1.6
Transition from an industrial economy	29	3	10	2.1	2.0	1.4
Transition to a knowledge economy	29	3	10	2.1	2.0	1.5
Jobs not available for older workers	33	0	0	3.2	3.0	1.3
Job shortages (domestic)	32	1	3	2.4	2.0	1.2
Low interest rates	30	5	17	1.8	2.0	1.3
Low supply of long bonds	30	2	7	2.4	3.0	1.2
Lack of supply of longevity bonds	30	3	10	2.2	2.5	1.4
Markets ineffectively hedging ret. risks	30	3	10	2.6	3.0	1.5
Interest rate volatility	32	0	0	3.0	3.0	1.0
Stock market returns	30	1	3	2.5	2.5	1.1
Stock market volatility	31	0	0	3.0	3.0	1.2
Increasing income/wealth disparity	30	2	7	3.5	4.0	1.4
Other economic factors	22	0	0	3.1	3.0	1.0
Low birth rates	34	1	3	3.1	3.0	1.2
Retirement of baby boom	33	0	0	3.8	4.0	1.0
Longevity increases	33	0	0	3.6	4.0	1.0
Cohort longevity increases	31	1	3	2.4	2.0	1.2
Longevity uncertainty	30	0	0	2.7	3.0	1.0
Health care system (issues with)	31	0	0	4.5	5.0	0.7
Long-term care system (issues with)	31	0	0	3.7	4.0	0.9
Public social insurance system	33	0	0	3.7	4.0	1.0
Public retiree health insurance system	30	1	3	4.0	4.0	1.3
Public long-term care system	32	1	3	3.8	4.0	1.1

Table IV.C
Question IV.4, Changes in Level of Threat, Revised Scoring System
N=34

Change in level of threat measure between Part A, Immediate and Part B, 10+ Years from now. Based on a -0-5 scale: 0 = none, 1 = ignorable, 5 = perfect storm	Number responding	-3 or less	-2	-1	0	1	2	3	4+
Level of debt/lack of savings (individual)	32	0	0	2	15	7	3	4	1
Level of debt (government)	31	0	1	0	15	10	3	2	0
Global competition	28	0	0	1	13	13	1	0	0
Transition from an industrial economy	29	0	3	3	17	5	1	0	0
Transition to a knowledge economy	29	0	1	5	15	5	2	1	0
Jobs not available for older workers	31	0	1	0	17	8	4	1	0
Job shortages (domestic)	30	0	0	3	17	8	2	0	0
Low interest rates	30	0	2	7	18	2	0	1	0
Low supply of long bonds	30	0	2	2	15	9	2	0	0
Lack of supply of longevity bonds	30	0	0	2	16	9	1	1	1
Markets ineffectively hedging ret. Risks	30	0	1	2	20	5	1	1	0
Interest rate volatility	30	0	2	3	19	4	2	0	0
Stock market returns	30	0	0	3	21	5	1	0	0
Stock market volatility	30	0	1	2	21	5	1	0	0
Increasing income/wealth disparity	30	0	0	1	16	9	3	1	0
Other economic factors	22	0	0	3	14	3	2	0	0
Low birth rates	31	0	0	2	9	9	8	3	0
Retirement of baby boom	31	0	2	2	7	7	10	3	0
Longevity increases	31	0	1	0	10	12	7	1	0
Cohort longevity increases	30	0	0	1	20	6	3	0	0
Longevity uncertainty	30	0	0	0	22	4	4	0	0
Health care system (issues with)	31	0	0	4	14	10	3	0	0
Long-term care system (issues with)	31	0	1	2	12	13	3	0	0
Public social insurance system	31	0	2	1	10	10	7	0	1
Public retiree health insurance system	30	0	0	1	11	11	7	0	0
Public long-term care system	30	0	0	0	12	13	5	0	0

As originally constructed, this question used a 1 -10 scoring system, with 1 = not at all urgent to 10 = extremely urgent, with 0 = not necessary,   Table III.C reflects the mean, median and standard deviation based on original participant scores.

Table III.C
Question III.4, part A, Original Scoring System
N = 41

III.4. Which of the following do you see as necessary changes to the retirement system? Part A – urgency of change (1-10 scoring system)	Number responding	Not necessary (score 0)	Mean	Median	Standard Deviation
Bring Social Security into balance		2	7.1	8.0	2.8
Rework Social Security (dramatic)	37	8	4.2	3.5	3.6
Raise Soc Sec normal retirement age	38	2	7.3	8.0	2.6
Raise Soc Sec early retirement age	38	11	4.8	5.5	3.6
Mandatory retirement savings	38	7	5.4	6.0	3.4
Increase coverage in DB plans	38	6	5.3	5.0	3.5
Increase coverage in DC plans	37	7	5.1	5.0	3.3
Raise private system NRA	37	9	5.0	5.0	3.5
Formalize/encourage phased ret	38	1	6.8	8.0	2.8
“ERISA”-fy DC auto-pilot	38	7	5.1	6.0	3.0
Ease DC plan annuitization (full/partial)	38	3	6.5	7.0	2.7
Force partial annuitization	37	8	5.2	5.5	3.4
Allow step-up benefits (DB)	38	6	5.1	5.0	3.2
Fix health care affordability/availability	38	2	8.7	10.0	2.6
Restructure long-term care system	38	1	7.0	7.0	2.5

As originally constructed, the question asked participants to set a timeframe for change based on the next 5 years, next 5-10 years or 10-20 years. Table III.D reflects the participant responses based on the timetable given in the original survey.

Table III.D
Question III.4, part B, Original Scoring System
N = 41

Which of the following do you see as necessary changes to the retirement system? Part B – Timeframe for change	Must change within (check one)				
	Next 5 years	5 - 10 years	10 - 20 years	Don't change	No Answer
Bring Social Security into balance	19	14	3	1	4
Rework Social Security (dramatic)	9	7	8	12	5
Raise Soc Sec normal retirement age	25	7	3	1	5
Raise Soc Sec early retirement age	14	12	0	10	5
Mandatory retirement savings	12	14	4	7	4
Increase coverage in DB plans	14	11	3	8	5
Increase coverage in DC plans	14	13	1	8	5
Raise private system NRA	18	8	3	8	4
Formalize/encourage phased ret	24	8	3	1	5
"ERISA"-fy DC auto-pilot	23	7	0	8	3
Ease DC plan annuitization (full/partial)	20	11	1	4	5
Force partial annuitization	13	11	4	8	5
Allow step-up benefits (DB)	14	15	3	6	3
Fix health care affordability/availability	30	5	1	2	3
Restructure long-term care system	10	23	2	1	5

As originally constructed, this question used a 1 -10 scoring system, with 1 = ignorable to 10 = perfect storm and 0 = none (no threat). Table IV.C reflects the mean, median and standard deviation based on original participant scores.

Table IV.C
Question IV.4, Part A, Original Scoring System
N=37 (Four participants reported on a country other than the US)

Rate the following problems threatening the retirement system based on the level of threat they pose to the retirement system Part A: Immediate Future Level of threat : 0 = none, 1 = ignorable, 10 = perfect storm	Number responding	Responding Zero (No threat)		Mean	Median	Standard Deviation
		Number	Percentage of respondents			
Level of debt/lack of savings (individual)	36	0	0%	6.9	7.5	2.8
Level of debt (government)	36	0	0	6.6	7.0	2.3
Global competition	34	3	9	4.9	5.0	3.0
Transition from an industrial economy	35	3	9	4.3	4.0	2.6
Transition to a knowledge economy	34	4	12	3.5	3.0	2.1
Jobs not available for older workers	35	1	3	4.6	5.0	2.3
Job shortages (domestic)	34	2	6	3.9	4.0	2.3
Low interest rates	36	8	22	3.7	3.0	3.0
Low supply of long bonds	36	4	11	4.1	4.5	2.4
Lack of supply of longevity bonds	35	5	14	3.5	3.0	2.5
Markets ineffectively hedging ret. risks	34	5	15	4.5	5.0	3.0
Interest rate volatility	33	1	3	5.0	5.0	2.5
Stock market returns	35	2	6	4.4	5.0	2.5
Stock market volatility	34	1	3	5.1	5.0	2.6
Increasing income/wealth disparity	36	3	8	5.8	6.0	3.0
Other economic factors	24	1	4	5.2	5.0	2.2
Low birth rates	34	6	18	3.2	3.0	2.6
Retirement of baby boom	35	1	3	5.0	5.0	2.3
Longevity increases	35	2	6	4.7	5.0	2.5
Cohort longevity increases	35	4	11	3.6	3.0	2.6
Longevity uncertainty	36	2	6	4.1	4.0	2.5
Health care system (issues with)	37	1	3	7.8	8.0	2.0
Long-term care system (issues with)	36	1	3	6.3	6.0	2.1
Public social insurance system	35	2	6	5.6	6.0	2.8
Public retiree health insurance system	36	2	6	6.2	6.5	2.6
Public long-term care system	34	2	6	5.7	6.0	2.5

As originally constructed, this question used a 1 -10 scoring system, with 1 = ignorable to 10 = perfect storm and 0 = none (no threat). Table IV.D reflects the mean, median and standard deviation based on original participant scores.

Table IV.D
Question IV.4, Part B, Original Scoring System
N=34

Rate the following problems threatening the retirement system based on the level of threat they pose to the retirement system Part B: 10+ Years from Now Level of threat : 0 = none, 1 = ignorable, 10 = perfect storm	Number responding	Responding Zero (No threat)		Mean	Median	Standard Deviation
		Number	Percentage of respondents			
Level of debt/lack of savings (individual)	33	0	0%	8.6	9.0	1.7
Level of debt (government)	32	0	0	7.7	8.0	2.1
Global competition	29	3	10	5.4	5.0	3.3
Transition from an industrial economy	29	3	10	3.8	3.0	2.7
Transition to a knowledge economy	29	3	10	3.7	3.0	2.8
Jobs not available for older workers	33	0	0	5.9	6.0	2.6
Job shortages (domestic)	32	1	3	4.3	4.0	2.4
Low interest rates	30	5	17	3.1	3.0	2.4
Low supply of long bonds	30	2	7	4.3	5.0	2.3
Lack of supply of longevity bonds	30	3	10	4.1	4.5	2.7
Markets ineffectively hedging ret. risks	30	3	10	4.8	5.0	3.0
Interest rate volatility	32	0	0	5.5	5.5	2.0
Stock market returns	30	1	3	4.6	4.5	2.1
Stock market volatility	31	0	0	5.5	5.0	2.4
Increasing income/wealth disparity	30	2	7	6.5	7.5	2.8
Other economic factors	22	0	0	5.6	5.0	2.0
Low birth rates	34	1	3	5.7	6.0	2.3
Retirement of baby boom	33	0	0	7.2	8.0	2.1
Longevity increases	33	0	0	6.7	7.0	2.1
Cohort longevity increases	31	1	3	4.3	4.0	2.2
Longevity uncertainty	30	0	0	4.9	5.0	1.9
Health care system (issues with)	31	0	0	8.6	9.0	1.6
Long-term care system (issues with)	31	0	0	7.1	8.0	1.9
Public social insurance system	33	0	0	7.1	7.0	2.0
Public retiree health insurance system	30	1	3	7.8	8.0	2.5
Public long-term care system	32	1	3	7.2	7.5	2.3

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Appendix B: Original Scoring System

Table IV.F

Question IV.4, Changes in Level of Threat, Revised Scoring System

Change in level of threat measure between Part A, Immediate and Part B, 10+ Years from now. Based on a 0-10 scale: 0 = none, 1 = ignorable, 10 = perfect storm	Number responding to both A & B	-4 or less	-3	-2	-1	0	1	2	3	4	5	6 or more
Level of debt/lack of savings (individual)	32	0	1	1	0	14	1	4	3	3	1	4
Level of debt (government)	31	1	0	0	0	12	3	4	8	1	2	0
Global competition	28	0	1	0	0	12	3	10	1	0	1	0
Transition from an industrial economy	29	1	3	2	2	14	1	4	2	0	0	0
Transition to a knowledge economy	29	1	0	4	2	13	2	4	2	0	1	0
Jobs not available for older workers	31	0	1	0	1	14	2	7	2	0	3	1
Job shortages (domestic)	30	0	1	2	1	14	2	8	0	2	0	0
Low interest rates	30	1	4	4	1	16	2	1	0	0	1	0
Low supply of long bonds	30	2	0	2	0	14	3	7	2	0	0	0
Lack of supply of longevity bonds	30	0	1	1	1	15	1	7	2	0	0	2
Markets ineffectively hedging ret. Risks	30	1	0	1	1	18	5	2	0	1	0	1
Interest rate volatility	30	1	1	3	0	17	3	2	2	1	0	0
Stock market returns	30	0	1	2	1	20	1	4	0	1	0	0
Stock market volatility	30	0	2	1	0	21	1	3	2	0	0	0
Increasing income/wealth disparity	30	0	1	0	0	14	4	5	3	2	0	1
Other economic factors	22	0	1	2	0	14	0	2	2	0	1	0
Low birth rates	31	0	0	1	2	6	2	7	3	6	2	2
Retirement of baby boom	31	2	0	2	0	4	5	4	1	6	5	2
Longevity increases	31	1	0	0	0	9	3	6	6	5	1	0
Cohort longevity increases	30	0	0	1	0	20	2	4	0	3	0	0
Longevity uncertainty	30	0	0	0	1	20	1	4	2	2	0	0
Health care system (issues with)	31	0	1	3	2	10	2	7	4	2	0	0
Long-term care system (issues with)	31	0	2	1	0	11	2	10	3	2	0	0
Public social insurance system	31	2	0	1	0	8	3	5	5	5	1	1
Public retiree health insurance system	30	0	0	1	0	9	3	8	3	3	3	0
Public long-term care system	30	0	0	0	1	10	1	11	4	3	0	0

Appendix C: Notes on Rescaling

Questions III and IV were originally given with a 10 point scale. Survey takers noted the scale was awkward, and in the results we noticed responses were not evenly distributed (there were more responses at certain points in the scale). Therefore we have rescaled the results for a 5 point scale and translated the original scores as follows. We have elected to translate each score into another "whole number" equivalent rather than simply dividing by 2 to reflect the reaction to a 5 point rather than a 10-point scale.

Original Scale	**Revised Scale**
0	0
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	5
10	5

Part II of Question II was also originally given with 3 time periods during which the change needed to be effected: next 5 years, 5-10 years, 10-20 years. Again, based on participant responses and the distribution of results those categories were collapsed to be next 10 years and 10 or more years.

Delphi Survey: Retirement System Round 1
Appendix D: Original Questionnaire

I. Background

Profession	
	Actuary
	Academic (non-actuary)
	Other (please specify)

Primary Employer			
	Government		University
	Private firm (for-profit)		Other non-for-profit
	Other (please specify)		

Age			
	Under 35		55-64
	35-44		65+
	45-54		

Gender			
	Male		Female

II. Retirement Risk

The defined benefit (DB) system sheltered many individuals from certain retirement risks. A defined contribution (DC) only system would have all risks borne by individuals. What sort of risk pooling is valuable to individuals, economies and taxpayers? Which retirement risks do you think ought to be pooled (or insured) and which should be borne by individuals? To what degrees should risks automatically be pooled, held by individuals, or left to individuals to pool or not pool?

Note: please consider middle-income individuals – neither very poor nor very rich when answering the question.

Retirement risks borne by middle-income individuals	Fully Pooled	Partially Pooled	Individual's discretion	Mostly individual risk	All individual risk
Retirement timing[3]					
Inflation					
Interest rate (annuity purchase)[4]					
Market					
Longevity					
Long-term care					
Health care					

[3] Risk that you may be forced to retire earlier than you had planned.
[4] As opposed to interest on bonds and other interest bearing investments, which are classified below as market risks.

III. Retirement Policy

1. Should employers play in any private retirement system we have? (check one) (Note: this question covers what role employers should take, the next question will consider what that role might look like)	
	None: everything should be done by individuals
	Voluntary: employers may choose to participate and choose how they participate
	Voluntary with minimums: employers may choose to participate but if they do participate they must do certain things
	Mandatory: employers must participate but they choose how to participate
	Mandatory with minimums: employers must participate and must do certain things

2. What should the role of the employer (state or private) be in any retirement system? (check one)	
	N/A (Employers should have no role)
	Act as a **conduit** to plans maintained by others (e.g. insurers)
	May/should sponsor plans, but **not bear any costs**
	May/should sponsor plans and bear **administrative costs only**
	May/should sponsor plans and bear **administrative and benefit costs**, but no risk (e.g. defined contribution)
	May/should sponsor plans and bear all costs: **administrative, fixed, and any risk-related costs** (e.g. defined benefit)

3. What role should government play in providing retirement benefits? (check one)	
	None: everything should be done by individuals/employers
	Minimum: provide assistance for low-paid only (akin to welfare)
	Basic: provide basic level of benefits for low-paid and middle class
	Full: provide all necessary retirement benefits for all but wealthiest individuals

III. Retirement Policy (continued)

4. Which of the following do you see as necessary changes to the retirement system? How urgent are they and in what timeframe should they be accomplished?

Possible changes Rate from 1 = not at all urgent to 10 = extremely urgent; 0 = not necessary,	Urgency of change	Must change within (check one)			
		Next 5 years	5-10 years	10-20 years	Don't change
Bring Social Security into balance[5]					
Rework Social Security (dramatic)[6]					
Raise Social Security normal retirement age					
Raise Social Security early retirement age					
Mandatory retirement savings					
Increase coverage in DB plans					
Increase coverage in DC plans					
Raise private system normal retirement age					
Formalize/encourage phased retirement					
"ERISA"-fy DC auto-pilot[7]					
Ease DC plan annuitization (full or partial)[8]					
Force partial annuitization[9]					
Allow step-up benefits (DB)[10]					
Fix health care affordability/availability					
Restructure long-term care system					
Other (elaborate)					
Other (elaborate)					

[5] Keep existing benefit/contribution structure with "tweaks" to provisions (e.g. wage base, retirement age, indexing) to bring into balance.
[6] Fundamental changes in the program changing inherent benefit and contributions structure. Private accounts are one example.
[7] Auto-pilot includes auto-enrollment in the plan and/or into a lifecycle account. Auto enrollment for DC plans does not have federal protection of the same sort enjoyed by DB plans with ERISA. For example, in some states, it's unclear whether auto-enrollment in a DC plan might violate state prohibitions against garnishment of wages.
[8] DC plans current must provide "the safest annuity" which is greater than a fiduciary standard of care; also balances must be annuitized in full (no option for partial annuitization) and annuitizating part of the balance doesn't fulfill mandatory distribution rules.
[9] Force individuals to have some portion of annuitized benefits, either from a DB or DC plan.
[10] Benefit payout structure paying smaller amounts initially and increasing over time

IV. Threats to Retirement System

1. Rank the following problems threatening the retirement system based on the level of threat they pose to the retirement system.

If you wish, you can also provide for one country or region outside the US. Please let us know which country/region you're choosing, and please limit yourselves to Westernized countries (e.g. Canada, Europe/EU 25, Japan, Australia)

Level of threat (0 = none, 1 = ignorable, 10 = perfect storm)	**US**		**Outside US (please specify)**	
	Immediate future	10+ years	Immediate future	10+ years
Level of debt/lack of savings (personal)				
Level of debt (government)				
Global competition				
Transition from an industrial economy				
Transition to a knowledge economy				
Jobs not available for older workers[11]				
Job shortages (domestic)				
Low interest rates				
Low supply of long bonds[12]				
Lack of supply of longevity bonds[13]				
Markets not effectively hedging retirement risks				
Interest rate volatility				
Stock market returns				
Stock market volatility				
Increasing income/wealth disparity[14]				
Other economic factors[15]				

[11] Includes older workers not able to take advantage of entrepreneurial opportunities ("jobs" in the broadest sense).
[12] Either inability to obtain long bonds or a pushing down of long interest rates to give an inverted yield curve for a long period of time
[13] Longevity bonds transfer longevity risk to market; buyers coupons are based on interest rates and number of survivors
[14] Wider gap in income/wealth between top and bottom quartiles, with more gains going to top income/wealth quartile
[15] e.g. oil prices, currency devaluation

IV. Threats to Retirement System (continued)

1. Rank the following problems threatening the retirement system based on the level of threat they pose to the retirement system (continued).

If you wish, you can also provide for one country or region outside the US. Please let us know which country/region you're choosing, and please limit yourselves to Westernized countries (e.g. Canada, Europe/EU 25, Japan, Australia)

Level of threat (0 = none, 1 = ignorable, 10 = perfect storm)	**US**		**Outside US (please specify)**	
	Immediate future	10+ years	Immediate future	10+ years
Low birth rates				
Retirement of baby boom				
Longevity increases				
Cohort longevity increases[16]				
Longevity uncertainty[17]				
Health care system (issues with)[18]				
Long-term care system (issues with)				
Public social insurance system[19]				
Public retiree health insurance system[20]				
Public long-term care system[21]				
Other (please specify)				
Other (please specify)				

[16] Longevity increases for cohorts, as opposed to across populations, which would increase costs and risks for that cohort disproportionately versus others born immediately before or after cohort.
[17] Concerns as to whether longevity will continue to improve (and by how much) or will longevity decline (due to rising obesity and poor health care).
[18] For the US, higher costs, more uneven coverage and more uninsured.
[19] In the US, Social Security and current issues around its funding or lack thereof
[20] In the US, this would be Medicare
[21] In the US, this would be Medicaid (Medicaid pays for long-term care for many middle-class individuals).