Self-Insured Health Plans: State Variation and Recent Trends by Firm Size, p. 2

All or Nothing? An Expanded Perspective on Retirement Readiness, p. 11

**To a Glance**

**Self-Insured Health Plans: State Variation and Recent Trends by Firm Size, by Paul Fronstin, Ph.D., EBRI**

- The percentage of workers in private-sector self-insured health plans has been increasing. In 2011, 58.5 percent of workers with health coverage were in self-insured plans, up from 40.9 percent in 1998. Large employers (with 1,000 or more workers) have driven the upward trend in overall self-insurance. The percentage of workers in self-insured plans in firms with fewer than 50 employees has been close to 12 percent in most years examined.

- The prevalence in self-insured plans varies by state, with Massachusetts having the third-highest prevalence of self-insurance in the small-group market (behind Hawaii and Alaska).

- Overall, 58.5 percent of workers were in self-insured plans in 2011, but the percentage ranged by state, from a low of 30.5 percent to a high of 73.8 percent.

- Massachusetts, the only state to have enacted health reform similar to PPACA, has seen an increase in the percentage of workers in self-insured plans among all firm-size cohorts, except among workers in firms with fewer than 50 employees.

**All or Nothing? An Expanded Perspective on Retirement Readiness, by Jack VanDerhei, Ph.D., EBRI**

- Approximately 44 percent of the Baby Boomer and Gen-Xer households are simulated to be at-risk of running short of money in retirement assuming they retire at age 65 and retain any net housing equity in retirement until other financial resources are depleted. However, that includes a wide range of personal circumstances, from individuals projected to run short by as little as a dollar to those projected to fall short by tens of thousands of dollars.

- Nearly one-half (49.1 percent) of Gen Xers have at least 20 percent more than is simulated to be needed; approximately one-third (31.4 percent) have between 80–120 percent of the financial resources necessary to cover the retirement expenses and uninsured health care costs; and about 1 in 5 (19.4 percent) are projected to have less than 80 percent of what is needed.

- Among Gen Xer single females simulated to have no future years of defined-contribution-plan eligibility, nearly two-fifths (39 percent) are in the most vulnerable (less than 80 percent) category, although this shrinks to only 8 percent for those with 20 or more years of future eligibility in a defined contribution plan.
Self-Insured Health Plans: State Variation and Recent Trends by Firm Size

By Paul Fronstin, Ph.D., Employee Benefit Research Institute

Introduction
The Employee Retirement Income Security Act of 1974 (ERISA) provides the legal framework for the uniform provision of benefits by employers doing business anywhere in the country. ERISA allows multistate employers to self-insure (or directly fund health care expenses of workers) in order to offer consistent health benefits across states, which results in ease of administration and lower expenses. Employers that offer a self-insured plan are also not required to cover health care services for state-mandated benefits, as are fully insured plans—plans offered by employers where a premium is paid to an insurance company.

Offering a self-insured plan means the employer assumes the financial risk related to offering health insurance (as opposed to a fully insured plan, where the insurance company assumes the risk). Large employers are much more likely to offer health benefits on a self-insured basis than small employers.

However, there is speculation that passage of the Patient Protection and Affordable Care Act of 2010 (PPACA) will result in an increasing number of smaller employers offering self-insured plans. Employers think that components of PPACA, such as the strict grandfathering requirements; the minimum-creditable-coverage requirement; the breadth of essential health benefits; taxes on insurers, medical-device manufacturers, and pharmaceutical companies; affordability requirements; and reinsurance fees will all drive up the cost of health coverage. Small employers concerned about the rising cost of providing health coverage may view self-insurance as a more attractive means to mitigate any expected cost increases.

This analysis examines recent trends in self-insurance. Data come from the Medical Expenditure Panel Survey (MEPS) and are presented by establishment size among private-sector employers. State-level data are also presented, along with the correlation between state mandates and the prevalence of self-insurance.

Trends in Self-Insurance
The percentage of workers in self-insured plans has been increasing. In 2011, 58.5 percent of workers with health coverage were in self-insured plans, up from 40.9 percent in 1998 (Figure 1). For the most part, the percentage of workers in self-insured plans increased consistently between 1998 and 2011.

As mentioned earlier, larger employers are more likely to offer self-insured health plans. In 2011, 68.5 percent of workers in firms with 50 or more employees were in self-insured plans, whereas only 10.8 percent of workers in firms with fewer than 50 employees were in self-insured plans (Figure 2). Large employers drove the upward trend in overall self-insurance seen in Figure 1. The percentage of workers in self-insured plans in firms with 50 or more employees increased from 48.4 percent in 1998 to 68.5 percent in 2011. In contrast, the percentage of workers in self-insured plans in firms with fewer than 50 employees was close to 12 percent in most years of the survey, though it peaked at 18.1 percent in 1997 and reached a low of 10.8 percent most recently in 2011.

Understanding the trend in self-insurance for employers with 50 or more workers and those with fewer is important because the employer mandate in PPACA only affects employers with at least 50 workers. However, other aspects of the law that are expected to drive up health insurance costs (as mentioned above) will affect employers of all sizes. Figure 3 shows trends for more detailed employer-size breaks (Figure 4 contains the data points because of lack of space in Figure 3). The two figures show that the higher percentage of workers in self-insured arrangements was
Figure 1

Source: Various tables that can be found at http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp

Figure 2

Source: Various tables that can be found at http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp
driven by employers with 1,000 or more workers. In 1998, 55.4 percent of workers in firms with 1,000 or more employees were in self-insured plans. By 2011, 86.3 percent were in self-insured plans.

Among workers in firms with 100-999 employees, the percentage in self-insured plans fell from 42.3 percent in 1997 to 32.6 percent in 2006. It trended up in some years after 2006, reaching 37.6 percent in 2010, but then slipped to 35 percent in 2011.

As of 2011, there was no evidence of an increase in smaller firms in self-insuring their health plans. The percentage of workers in firms with either fewer than 10 workers, 10–24 workers, or 25–99 workers that were also in self-insured plans has been roughly between 10 percent and 20 percent during the entire 1996–2011 period and showed no clear trend upward or downward.

**State Variation in Self-Insurance**

Overall, 58.5 percent of workers were in self-insured plans in 2011, but the percentage ranged by state, from a low of 30.5 percent to a high of 73.8 percent (Figure 5). Hawaii (at 30.5 percent) was the only state with fewer than 40 percent of workers with health insurance in self-insured plans. In seven states (Montana, California, Rhode Island, Oregon, Vermont, North Dakota, and South Dakota), between 40 percent and 50 percent of workers with health insurance were in self-insured plans. Only two states (Indiana and Minnesota) had more than 70 percent of workers with health insurance in self-insured plans.

State estimates for employers with fewer than 50 workers ranged from a low of 1.7 percent to 27.5 percent, but most of these estimates did not meet standards for reliability or precision and are flagged as such in Figure 5. The states with the largest amount of self-insurance in firms with fewer than 50 employees were Minnesota (18.1 percent), Massachusetts (18.8 percent), Hawaii (23.8 percent), and Alaska (27.5 percent), and they all met standards for reliability and precision.

Massachusetts, the only state to have enacted health reform similar to PPACA, has seen an increase in the percentage of workers in self-insured plans among all firm-size cohorts, except among workers in firms with fewer than 50 employees. Since 2006, when this health reform law was passed in Massachusetts, the percentage of workers in firms with 50 or more employees in self-insured plans increased from 54.4 percent in 2005/2006 to 67.2 percent in 2010/2011; the percentage of workers in firms with 100-999 employees in self-insured plans increased from 16.6 percent to 29.2 percent; and the percentage of workers in firms with 1,000 or more employees in self-insured plans increased from 74.1 percent to 86.4 percent (Figure 6). The percentage of workers in firms with fewer than 50 employees in self-insured plans initially decreased from 15 percent in 2005/2006 to 11.2 percent in 2009/2010, before increasing to 15.7 percent in 2010/2011. Note that two-year moving averages were used to examine trends in Massachusetts to increase precision, since some of the year-to-year variability observed may be due to smaller sample sizes.

**Variation With State-Mandated Benefits**

State-mandated benefits are one of the factors that disproportionately affect small firms, since they are least likely to self-insure. Jensen and Morrisey (1999) modeled the effects of state mandates, as well as other insurance regulations, on the decision by small firms (fewer than 50 workers) to offer health insurance over a period of several years and found that mandated benefits resulted in reductions in coverage. According to their findings, each additional mandate significantly lowered the small firm's probability of offering health insurance.

Under PPACA, firms with fewer than 50 employees will not be penalized if they do not offer health coverage to their workers, but larger firms face $2,000-per-worker penalties when they do not offer coverage. As a result, the prevalence of self-insurance may increase among smaller employers if costs increase due to the reasons cited above.
Figure 3

Source: Various tables that can be found at http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp

Figure 4

<table>
<thead>
<tr>
<th>Year</th>
<th>Fewer Than 10 Employees</th>
<th>10–24 Employees</th>
<th>25–99 Employees</th>
<th>100–999 Employees</th>
<th>1,000 or More Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>12.6%</td>
<td>11.8%</td>
<td>19.4%</td>
<td>39.3%</td>
<td>66.9%</td>
</tr>
<tr>
<td>1997</td>
<td>20.9</td>
<td>14.1</td>
<td>20.5</td>
<td>42.3</td>
<td>62.7</td>
</tr>
<tr>
<td>1998</td>
<td>14.9</td>
<td>12.7</td>
<td>19.8</td>
<td>37.8</td>
<td>55.4</td>
</tr>
<tr>
<td>1999</td>
<td>13.1</td>
<td>9.9</td>
<td>18.2</td>
<td>39.4</td>
<td>57.0</td>
</tr>
<tr>
<td>2000</td>
<td>14.0</td>
<td>10.6</td>
<td>15.4</td>
<td>39.3</td>
<td>69.3</td>
</tr>
<tr>
<td>2001</td>
<td>12.3</td>
<td>11.3</td>
<td>16.8</td>
<td>39.5</td>
<td>68.6</td>
</tr>
<tr>
<td>2002</td>
<td>11.8</td>
<td>10.0</td>
<td>17.9</td>
<td>38.7</td>
<td>71.8</td>
</tr>
<tr>
<td>2003</td>
<td>11.8</td>
<td>11.6</td>
<td>14.8</td>
<td>36.1</td>
<td>75.8</td>
</tr>
<tr>
<td>2004</td>
<td>18.8</td>
<td>13.2</td>
<td>16.3</td>
<td>35.8</td>
<td>77.7</td>
</tr>
<tr>
<td>2005</td>
<td>11.0</td>
<td>10.6</td>
<td>13.0</td>
<td>35.8</td>
<td>79.3</td>
</tr>
<tr>
<td>2006</td>
<td>12.8</td>
<td>11.4</td>
<td>14.7</td>
<td>32.6</td>
<td>78.8</td>
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<tr>
<td>2007</td>
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<td></td>
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<tr>
<td>2008</td>
<td>12.5</td>
<td>10.7</td>
<td>13.1</td>
<td>36.6</td>
<td>81.6</td>
</tr>
<tr>
<td>2009</td>
<td>13.0</td>
<td>9.9</td>
<td>16.0</td>
<td>32.5</td>
<td>82.9</td>
</tr>
<tr>
<td>2010</td>
<td>12.6</td>
<td>11.6</td>
<td>17.3</td>
<td>37.6</td>
<td>83.6</td>
</tr>
<tr>
<td>2011</td>
<td>11.9</td>
<td>9.5</td>
<td>13.2</td>
<td>35.0</td>
<td>86.3</td>
</tr>
</tbody>
</table>

Source: Various tables that can be found at http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp
Figure 5
Percentage of Private-Sector Enrollees in Self-Insured Plans at Establishments Offering Health Insurance, by Firm Size and State, 2011

<table>
<thead>
<tr>
<th>Division and State</th>
<th>Total</th>
<th>Fewer Than 50 Employees</th>
<th>50 or More Employees</th>
<th>100-999 Employees</th>
<th>1,000 or More Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>58.5%</td>
<td>10.8%</td>
<td>68.5%</td>
<td>35.0%</td>
<td>86.3%</td>
</tr>
<tr>
<td>New England:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>54.4%</td>
<td>8.3%</td>
<td>64.9%</td>
<td>26.9%</td>
<td>85.9%</td>
</tr>
<tr>
<td>Maine</td>
<td>56.1%</td>
<td>10.3%*</td>
<td>66.4%</td>
<td>47.5%</td>
<td>93.5%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>55.3%</td>
<td>18.8%</td>
<td>62.7%</td>
<td>14.8%*</td>
<td>85.8%</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>62.0%</td>
<td>6.1%</td>
<td>74.4%</td>
<td>29.8%</td>
<td>96.1%</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>46.8%</td>
<td>8.2%</td>
<td>58.5%</td>
<td>20.3%*</td>
<td>84.7%</td>
</tr>
<tr>
<td>Vermont</td>
<td>49.6%</td>
<td>10.6%*</td>
<td>62.8%</td>
<td>58.8%</td>
<td>74.3%</td>
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<tr>
<td>Middle Atlantic:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>59.9%</td>
<td>13.5%</td>
<td>72.1%</td>
<td>13.6%*</td>
<td>90.2%</td>
</tr>
<tr>
<td>New York</td>
<td>50.7%</td>
<td>9.3%*</td>
<td>61.5%</td>
<td>26.9%</td>
<td>80.8%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>63.8%</td>
<td>10.0%</td>
<td>75.1%</td>
<td>22.2%</td>
<td>92.8%</td>
</tr>
<tr>
<td>East North Central:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>59.6%</td>
<td>13.5%</td>
<td>68.4%</td>
<td>32.8%</td>
<td>85.0%</td>
</tr>
<tr>
<td>Indiana</td>
<td>73.7%</td>
<td>17.5%*</td>
<td>83.1%</td>
<td>76.1%</td>
<td>92.7%</td>
</tr>
<tr>
<td>Michigan</td>
<td>60.9%</td>
<td>13.9%</td>
<td>71.2%</td>
<td>50.8%</td>
<td>85.9%</td>
</tr>
<tr>
<td>Ohio</td>
<td>59.8%</td>
<td>8.6%*</td>
<td>69.4%</td>
<td>37.8%</td>
<td>86.3%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>61.4%</td>
<td>11.2%*</td>
<td>69.5%</td>
<td>58.1%</td>
<td>83.5%</td>
</tr>
<tr>
<td>West North-Central:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>67.5%</td>
<td>16.6%</td>
<td>76.9%</td>
<td>47.4%</td>
<td>91.6%</td>
</tr>
<tr>
<td>Kansas</td>
<td>62.4%</td>
<td>15.0%*</td>
<td>75.0%</td>
<td>30.1%*</td>
<td>93.5%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>73.8%</td>
<td>18.1%</td>
<td>82.4%</td>
<td>61.2%</td>
<td>94.6%</td>
</tr>
<tr>
<td>Missouri</td>
<td>69.0%</td>
<td>12.1%*</td>
<td>80.4%</td>
<td>54.3%</td>
<td>93.9%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>69.3%</td>
<td>14.4%*</td>
<td>79.0%</td>
<td>54.1%</td>
<td>93.5%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>49.9%</td>
<td>10.3%*</td>
<td>62.5%</td>
<td>48.0%</td>
<td>75.5%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>49.9%</td>
<td>10.3%*</td>
<td>61.0%</td>
<td>33.6%</td>
<td>89.1%</td>
</tr>
<tr>
<td>South Atlantic:</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>67.6%</td>
<td>11.6%*</td>
<td>78.0%</td>
<td>43.2%</td>
<td>91.2%</td>
</tr>
<tr>
<td>District of Columbia</td>
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<td>6.5%*</td>
<td>63.7%</td>
<td>44.1%</td>
<td>79.2%</td>
</tr>
<tr>
<td>Florida</td>
<td>60.2%</td>
<td>11.2%*</td>
<td>68.8%</td>
<td>26.5%</td>
<td>87.6%</td>
</tr>
<tr>
<td>Georgia</td>
<td>64.9%</td>
<td>10.4%*</td>
<td>73.1%</td>
<td>32.1%*</td>
<td>92.2%</td>
</tr>
<tr>
<td>Maryland</td>
<td>64.0%</td>
<td>13.4%*</td>
<td>76.1%</td>
<td>43.7%</td>
<td>91.6%</td>
</tr>
<tr>
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<td>64.6%</td>
<td>4.9%*</td>
<td>75.8%</td>
<td>53.4%</td>
<td>92.1%</td>
</tr>
<tr>
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<td>61.4%</td>
<td>6.8%*</td>
<td>72.3%</td>
<td>30.6%</td>
<td>89.5%</td>
</tr>
<tr>
<td>Virginia</td>
<td>57.6%</td>
<td>10.8%*</td>
<td>67.2%</td>
<td>43.4%</td>
<td>82.8%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>66.1%</td>
<td>7.7%*</td>
<td>76.1%</td>
<td>62.2%</td>
<td>86.9%</td>
</tr>
</tbody>
</table>

(cont'd.)
### Division and State Total Fewer Than 50 Employees 50 or More Employees 100–999 Employees 1,000 or More Employees

**East South-Central:**
- Alabama: 64.8, 14.3*, 76.0, 42.8, 91.5
- Kentucky: 66.9, 6.8*, 77.8, 51.9, 95.7
- Mississippi: 64.0, 17.8*, 72.1, 42.6, 89.8
- Tennessee: 51.8, 8.9*, 59.9, 20.0, 84.7

**West South-Central:**
- Arkansas: 63.0, 8.2*, 72.3, 44.8, 91.2
- Louisiana: 62.2, 6.8, 77.2, 47.9, 95.7
- Oklahoma: 55.5, 9.8, 68.0, 41.2, 91.0
- Texas: 58.8, 7.0, 68.3, 25.9, 88.7

**Mountain:**
- Arizona: 64.1, 10.4*, 73.1, 26.3*, 89.1
- Colorado: 56.5, 9.0*, 66.1, 36.6, 78.6
- Idaho: 59.6, 8.6*, 73.0, 42.6, 92.6
- Montana: 45.3, 6.2*, 58.9, 39.1, 76.8
- Nevada: 50.9, 8.8*, 58.3, 24.0*, 70.6
- New Mexico: 60.9, 17.1, 69.9, 39.2, 90.1
- Utah: 55.2, 16.7*, 61.8, 49.0, 73.4
- Wyoming: 62.6, 14.8, 79.2, 55.9, 94.2

**Pacific:**
- Alaska: 68.2, 27.5, 73.7, 42.0, 94.6
- California: 46.3, 9.9, 55.4, 18.9, 74.8
- Hawaii: 30.5, 23.8, 33.0, 10.1*, 48.1
- Oregon: 47.3, 15.9, 56.8, 25.2*, 78.6
- Washington: 56.0, 1.7*, 69.2, 39.7, 87.2

* Figure does not meet standard of reliability or precision.

However, this analysis finds no correlation between state-mandated benefits and prevalence of self-insurance for any firm-size cohort. Figure 7 shows no correlation between the number of mandates for each state and the percentage of enrollees in self-insured plans who work in firms with fewer than 50 employees. Figure 8 is similar to Figure 7, but excludes the state estimates that do not meet reliability or precision standards; it also shows no correlation. Figure 9 shows no correlation between the number of mandates for each state and the prevalence of self-insured workers regardless of firm size. However, more precise modeling would be useful for a number of reasons: First, not all mandates affect insurance premiums equally. Second, some mandates affect who is covered rather than what has to be covered. Third, other state regulations, such as those that govern the degree to which health plans can vary premiums based on age and health status, will affect insurance premiums.

**Conclusion**

There is concern that passage and implementation of PPACA will result in an increasing number of smaller employers choosing to offer self-insured plans as a means of avoiding coverage mandates.

This analysis examined data on recent trends in self-insurance and found that the percentage of workers in self-insured plans has been increasing. It also found that large employers (with 1,000 or more workers) have driven the upward trend in overall self-insurance. The percentage of workers in self-insured plans in firms with fewer than 50 employees has been close to 12 percent in most years examined in this analysis.

Variation in the prevalence in self-insured plans was found by state, and Massachusetts was found to be the state with the third-highest prevalence of self-insurance in the small-group market (behind Hawaii and Alaska). There has been an increase in the prevalence of self-insurance in the larger-group market in Massachusetts, but no increase in the smallest-group market. These estimates in this analysis should serve as a baseline to gauge the potential impact of rising health insurance costs on self-insurance in the future.

**References**

Figure 6
Percentage of Private-Sector Enrollees in Self-Insured Plans at Establishments Offering Health Insurance, by Firm Size in Massachusetts, Two-Year Moving Averages, 1996–2011

Source: Various tables that can be found at [http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp](http://meps.ahrq.gov/mepsweb/data_stats/quick_tables.jsp)

Figure 7
Correlation Between Total State Mandates and Percentage of Enrollees in Self-Insured Plans Among Employers With 50 or Fewer Workers, 2011

Figure 8
Correlation Between Total State Mandates and Percentage of Enrollees in Self-Insured Plans Among Employers With 50 or Fewer Workers (Excluding States That Do Not Meet Standard of Reliability or Precision), 2011

Number of State Health Mandates

Source: Self-insured enrollment numbers were provided at http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/state/series_2/2011/tiib2b1.htm and state mandate numbers were provided at www.cahi.org/cahi_contents/resources/pdf/MandatesintheStates2011ExecSumm.pdf

Figure 9
Correlation Between Total State Mandates and Percentage of Enrollees in Self-Insured Plans Among All Employees Regardless of Firm Size, 2011

Number of State Health Mandates

Source: Self-insured enrollment numbers were provided at http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/state/series_2/2011/tiib2b1.htm and state mandate numbers were provided at www.cahi.org/cahi_contents/resources/pdf/MandatesintheStates2011ExecSumm.pdf
All or Nothing? An Expanded Perspective on Retirement Readiness

By Jack VanDerhei, Ph.D., Employee Benefit Research Institute

Introduction
Measuring retirement security—or retirement income adequacy—is an extremely important and complex topic. A frequent point of focus for policymakers is the determination of a single, unchanging replacement rate, frequently followed by some assessment as to how many individuals are seen as likely to reach that level.

However, the Employee Benefit Research Institute (EBRI) has long employed stochastic modeling in providing a more comprehensive and real-world perspective, one that doesn’t just pick a single likely result but uses random variations to look at what a broad range of conditions might be like based on a set of random outcomes. Projected results are then repeated with a new set of random variables in a process that is repeated thousands of times. The latest iteration of this process was published in the May 2012 EBRI Notes with updates for the previously published EBRI Retirement Readiness Ratings™ (RRR) as well as the average Retirement Savings Shortfalls (RSS).

Even then, it’s one thing for an individual to run short of the funds needed to provide adequate retirement income by a couple of dollars, another altogether to fall short of those needs by tens or hundreds of thousands. To permit a more nuanced assessment of retirement readiness, this Notes article describes the results of sensitivity analysis on the EBRI Retirement Readiness Ratings™ by reclassifying the output metric from simply showing whether a household is at risk of running short of resources to fund retirement at any level to presenting projected shortfall ranges relative to that goal. Although this article analyzes the RRR categories for Early Baby Boomers (those born between 1948–1954, currently ages 58–64), Late Baby Boomers (those born between 1955–1964, currently ages 48–57), and Generation Xers (those born between 1965–1978, currently ages 34–47), similarly to the June 2012 Notes article, this article also focuses in additional detail on the younger Gen Xer cohort to further assess the impact that future eligibility for participation in a defined contribution plan has on these values.

EBRI Retirement Readiness Ratings™

VanDerhei (May 2012) provides updated information on the percentage of households simulated to be at-risk of having insufficient retirement income and assets to cover retirement expenses (based on the average expenses of those age 65 or older throughout retirement in specific income and age groupings determined by a proxy for the household’s retirement income) and uninsured medical costs for the duration of their retirement (assuming a retirement age of 65). The EBRI Retirement Readiness Ratings™ are presented by age cohort, income quartile and future years of 401(k) eligibility.

According to that analysis, approximately 44 percent of the Baby-Boomer and Gen-Xer households are simulated to be at-risk assuming they retire at age 65 and retain any net housing equity in retirement until other financial resources are depleted. However, that 44 percent includes a wide range of personal circumstances, from individuals projected to run short by as little as a dollar to those projected to fall short by tens of thousands of dollars.

In order to provide a more detailed perspective on the relative size of the readiness gaps, the following sensitivity analysis on the baseline EBRI Retirement Security Projection Model® (RSPM) by age cohort is performed to display the percentage of households in one of three categories defined by the percentage of deemed-adequate income. The percentage of deemed-adequate income for those households at risk is defined as:

\[ 1 - \frac{\text{accumulated value of deficits generated at the time all members of the household have died}}{\text{accumulated value of the total retirement expenditures for the household}} \]
This formulation provides a relatively simple way of determining what percentage of households are:

- **Substantially above** the threshold (more than 120 percent), shown in green in the figures.
- **Close to** the threshold (between 80–120 percent), shown in yellow.
- **Substantially below** the threshold (less than 80 percent), shown in red.

### Retirement Readiness Rating Categories by Age Cohort

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<tr>
<td>More than 120 percent</td>
<td>50.6%</td>
<td>51.6%</td>
<td>49.1%</td>
</tr>
<tr>
<td>Between 80–120 percent</td>
<td>31.5%</td>
<td>31.1%</td>
<td>31.4%</td>
</tr>
<tr>
<td>Less than 80 percent</td>
<td>18.0%</td>
<td>17.2%</td>
<td>19.4%</td>
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Thus, while 44 percent of the Early Boomers are considered to be “at risk” using the 100 percent threshold of retirement readiness (and the remaining 56 percent are considered to not be at risk), under the more detailed analysis, approximately one-half (50.6 percent) have at least 20 percent more than is simulated to be needed; approximately one-third (31.5 percent) have between 80–120 percent of the financial resources necessary to cover the retirement expenses and uninsured health care costs; and 18.0 percent are projected to have less than 80 percent of what is needed.

### Income Brackets

**Single males:** Figure 1 provides additional detail for the Early Boomers with the RRR categories broken out by income quartiles as well as family/gender combinations. Whereas 37.4 percent of single males in the lowest-income quartile are in the less-than-80 percent category (represented by the red bars), the percentage drops dramatically as the relative income increases: Only 9 percent of single males in the second-income quartile are in the less-than-80 percent category, 3.5 percent are in the third-income category, and 1.0 percent are in the highest-income category.

**Single females:** More than one-half (54.4 percent) of single females in the lowest-income quartile are in the less-than-80-percent category, but this drops to 22.1 percent for the second-income quartile, 9.4 percent for the third-income quartile, and 3.6 percent for the highest-income quartile.

**Families** tend to fall in between the ranges for single males and females: 47.1 percent of the families in the lowest-income quartile are in the less-than-80-percent category, but this drops to 16.3 percent for the second-income quartile, 4.6 percent for the third-income quartile and 0.8 percent for the highest-income quartile.

Figure 2 provides similar results for Late Boomers; results for Gen Xers are shown in Figure 3.

### Gen-X Prospects

These data allow additional analysis on the impact of future years of 401(k) eligibility on the RRR categories. Figure 4 provides the distribution of the RRR categories for Gen Xers by pre-retirement income quartile and future years of eligibility for defined contribution plan participation.
Figure 1

Distribution of Retirement Readiness Rating Categories for Early Boomers, by Preretirement Income Quartile and Gender/Family Status


Figure 2

Distribution of Retirement Readiness Rating Categories for Late Boomers, by Preretirement Income Quartile and Gender/Family Status

Figure 3
Distribution of Retirement Readiness Rating Categories for Gen Xers, by Preretirement Income Quartile and Gender/Family Status


Figure 4
Distribution of Retirement Readiness Rating Categories for Gen Xers, by Preretirement Income Quartile and Future Years of Eligibility for Defined Contribution Plan Participation

Focusing first on those in the lowest preretirement income quartile, almost one-half (48 percent) of these households that are simulated to have no future years of eligibility for defined contribution plans wind up in the less-than-80-percent category. This vulnerability falls to 35 percent for those with one to nine years of future eligibility, and to 32 percent for those with 10 or more years of future eligibility. Slightly more than one-fifth (21 percent) of the households in the second-lowest income quartile that are not simulated to have any future years of eligibility for defined contribution plans are in the less-than-80-percent category. This falls to 18 percent for those with one to nine years of future eligibility, 11 percent for those with 10–19 years of future eligibility, and decreases to only 7 percent for those with 20 or more years of future eligibility. Similar decreases are shown for those in the third- and fourth-income quartiles, but in absolute numbers the changes seem small considering that none of the eligibility categories for the top half of the income distribution have more than 10 percent of the households in the less-than-80-percent category.

Figure 5 is similar to Figure 4 but provides the distribution of the RRR categories for Gen Xers by future years of eligibility for defined contribution plan participation and gender/family status (rather than future eligibility and preretirement income quartiles). The most striking finding of this analysis is the tremendous impact of future defined contribution plan eligibility for single females. For example, among Gen-Xer single females simulated to have no future years of defined-contribution-plan eligibility, nearly two-fifths (39 percent) are in the most vulnerable (less than 80 percent) category. This falls almost in half (to 21 percent) for those with one to nine years of future eligibility, to 13 percent for those with 10–19 years of future eligibility, and shrinks to only 8 percent for those with 20 or more years of future eligibility.

Single males experience a similar association between eligibility and percentage in the vulnerable, less-than-80-percent category, albeit less pronounced in absolute terms: 17 percent with no future eligibility are in the less-than-80 percent category, but only 9 percent for those with one to nine years of future eligibility, 5 percent for those with 10–19 years of future eligibility, and 3 percent for those with 20 or more years of future eligibility are in that category. Similar decreases are shown for family households, but in absolute numbers the changes seem small given that none of their eligibility categories have more than 8 percent of the households in the less-than-80-percent category.

Baseline Comparison

Another way of assessing how much impact future eligibility in a defined contribution plan can have on retirement income adequacy for Gen Xers is to compare the baseline projections in Figure 3 by preretirement income quartile and gender/family status for all categories of future eligibility with the subset of those projections for only those Gen Xers with at least 20 or more years of future eligibility. Figure 6 provides the 12 pairwise comparisons and illustrates the large percentage-point reductions of households in the less-than-80-percent category for the two lower income quartiles when applying a filter for 20-year future eligibility. For households in the lowest-income quartile, the decrease in the less-than-80-percent category is 5.1 percentage points for single males, 13.1 percentage points for single females, and 13.7 percentage points for families. For households in the second-lowest income quartile, the decrease in the less-than-80-percent category is 10.1 percentage points for single males, 12.5 percentage points for single females and 16.4 percentage points for families.

When the RRR categories for all combinations of preretirement income quartiles and gender/family are combined for Gen Xers, about 1 in 5 (19.4 percent) of the households are in the less-than-80-percent category. However, when the 20-year, future-eligibility filter is added, only 4.8 percent of the Gen Xer households are in this category.

Conclusion

Recent updates to the EBRI RSPM show that the percentage of Gen X and Baby Boom households in 2012 simulated to have adequate retirement income has increased by 5 to 8 percentage points since 2003. However, there is still a significant percentage of households that are simulated to be at risk of not being able to cover retirement
expenses and uninsured medical costs through the entire duration of their retirement years (for example, 43.9 per-
cent of the Gen X households are at risk under the baseline assumptions for RSPM).

One problem with simply classifying a household as “at risk” or not is that some households may be missing the threshold by relatively small amounts. When the Retirement Readiness Ratings are reclassified from simply showing whether a household is at risk to instead showing a household as being in one of three categories—substantially above the threshold (more than 120 percent); close to the threshold (between 80–120 percent); and substantially below the threshold (less than 80 percent)—the percentage of Gen X households simulated to have less than enough to cover 80 percent of the simulated expenses is less than 1 in 5 (19.4 percent).

Using this new classification to analyze the impact of future eligibility in a defined contribution plan on the percentage of households with less than 80 percent of the necessary resources for sufficiency shows a substantial impact for single females. There is a 31 percentage point decrease for single females in the less-than-80 percent category between those with no future years of defined contribution plan eligibility and those with 20 or more years.
Figure 5
Distribution of Retirement Readiness Rating Categories for Gen Xers, by Gender/Family Status and Future Years of Eligibility for Defined Contribution Plan Participation


Figure 6
Pairwise Comparisons of Distributions of Retirement Readiness Rating Categories for Gen Xers (Baseline vs. Those With 20 or More Years of Future Eligibility in a Defined Contribution Plan)

Appendix A: Brief Description of RSPM

One of the basic objectives of EBRI’s Retirement Security Projection Model® (RSPM) is to simulate the percentage of the population that will be “at risk” of not having retirement income adequate to cover average expenses and uninsured health care costs of those age 65 or older throughout retirement in specific income and age groupings. The EBRI Retirement Readiness RatingsTM also provide information on the distribution of the likely number of years before those at risk “run short of money,” as well as the percentage of compensation they would need in terms of additional savings in order to have a 50, 70, or 90 percent probability of retirement-income adequacy.

VanDerhei (February 2011) describes how households (with heads who are currently ages 36–62) are tracked through retirement age, and how their retirement income/wealth is simulated for the following components:

- Social Security.
- Defined contribution balances.
- IRA balances.
- Defined benefit annuities and/or lump-sum distributions.
- Net housing equity.

A household is considered to run short of money in this model if aggregate resources in retirement are not sufficient to meet minimum retirement expenditures, defined as a combination of deterministic expenses from the Consumer Expenditure Survey (as a function of income), and some health insurance and out-of-pocket health-related expenses, plus stochastic expenses from nursing home and home health care (at least until the point such expenses are picked up by Medicaid). This version of the model is constructed to simulate retirement income adequacy, as noted above. Alternative versions of the model allow similar analysis for replacement rates, standard-of-living calculations, and other ad hoc thresholds.

The baseline version of the model used for this analysis assumes all workers retire at age 65 and immediately begin to withdraw money from their individual accounts (defined contribution and cash balance plans, as well as IRAs) whenever the sum of their expenses and uninsured medical expenses exceed the after-tax annual income from Social Security and defined benefit plans (if any). If there is sufficient money to pay expenses without tapping into the tax-qualified individual accounts, the excess is assumed to be invested in a non-tax-advantaged account where the investment income is taxed as ordinary income. Individual accounts are tracked until the point at which they are depleted. At that point, any net housing equity is assumed to be added to retirement savings in the form of a lump-sum distribution (not a reverse annuity mortgage). If all the retirement savings are exhausted and if the Social Security and defined benefit payments are not sufficient to pay expenses, the entity is designated as having “run short of money” at that time.
### Appendix B: Brief Chronology of EBRI’s Retirement Security Projection Model®

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>2001</td>
<td>RSPM grew out of a multi-year project to analyze the future economic well-being of the retired population at the state level. EBRI and the Milbank Memorial Fund, working with the office of the governor of Oregon, set out in the late 1990s to see if this situation could be evaluated for the state. The resulting analysis (VanDerhei and Copeland, 2001a) focused primarily on simulated retirement wealth with a comparison to ad hoc thresholds for retirement expenditures.</td>
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<td>2002</td>
<td>The first state-level RSPM results were presented to the Kansas’ Long-Term Care Services Task Force on July 11, 2002 (VanDerhei and Copeland, July 2002), and the results of the Massachusetts study were presented on Dec. 1, 2002 (VanDerhei and Copeland December 2002). With the assistance of the Kansas Insurance Department, EBRI was able to create Retirement Readiness Ratings based on a full stochastic decumulation model that took into account the household’s longevity risk, post-retirement investment risk, and exposure to potentially catastrophic nursing-home and home-health-care risks.</td>
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<tr>
<td>2003</td>
<td>RSPM was expanded to a national model -- the first national, micro-simulation, retirement-income-adequacy model, built in part from administrative 401(k) data. The initial results were presented at the EBRI December 2003 policy forum (VanDerhei and Copeland, 2003). The basic model was subsequently modified to quantify the beneficial impact of a mandatory contribution of 5 percent of compensation for testimony for the Senate Special Committee on Aging (VanDerhei January 2004).</td>
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<tr>
<td>2004</td>
<td>The model was enhanced to allow an analysis of the impact of annuitizing defined contribution and IRA balances at retirement age (VanDerhei and Copeland, 2004).</td>
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<td>2005</td>
<td>Additional refinements were introduced to evaluate the impact of purchasing long-term care insurance on retirement income adequacy (VanDerhei, 2005).</td>
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<td>2006</td>
<td>The model was used to evaluate the impact of defined benefit freezes on participants by simulating the minimum employer-contribution rate that would be needed to financially indemnify the employees for the reduction in their expected retirement income under various rate-of-return assumptions (VanDerhei, March 2006). Later that year, an updated version of the model was developed to enhance the EBRI interactive Ballpark E$timate® by providing Monte Carlo simulations of the replacement rates needed for specific probabilities of retirement-income adequacy under alternative-risk-management treatments (VanDerhei, September 2006).</td>
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<tr>
<td>2008</td>
<td>RSPM was significantly enhanced for the May 2008 EBRI policy forum by allowing automatic enrollment of 401(k) participants with the potential for automatic escalation of contributions to be included (VanDerhei and Copeland, 2008).</td>
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<td>2009</td>
<td>Additional modifications were added for a Pension Research Council presentation that involved a “winners/losers” analysis of defined benefit freezes and the enhanced employer contributions provided to defined contribution plans at the time the defined benefit plans were frozen (Copeland and VanDerhei, 2010). Also in 2009, a new subroutine was added to allow simulations of various styles of target-date funds for a comparison with participant-directed investments (VanDerhei, June 2009).</td>
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<td>Year</td>
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<td>2010</td>
<td>In April 2010, the model was completely re-parameterized with 401(k) plan design parameters for sponsors that had adopted automatic-enrollment provisions (VanDerhei, April 2010). A completely updated version of the national model was produced for the May 2010 EBRI policy forum and used in the July 2010 Issue Brief (VanDerhei and Copeland, 2010). The new model was used to analyze how eligibility for participation in a defined contribution plan impacts retirement income adequacy in September 2010 (VanDerhei, September 2010), and was later used to compute Retirement Savings Shortfalls (RSS) for Baby Boomers and Generation Xers in October 2010 (VanDerhei, October 2010a). In October testimony before the Senate Health, Education, Labor and Pensions Committee on “The Wobbly Stool: Retirement (In)security in America,” the model was used to analyze the relative importance of employer-provided retirement benefits and Social Security (VanDerhei, October 2010b).</td>
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<tr>
<td>2011</td>
<td>In February the model was used to analyze the impact of the 2008–2009 crisis in the financial and real estate markets on retirement income adequacy (VanDerhei, February 2011). An April 2011 article introduced a new method of analyzing the results from RSPM (VanDerhei, April 2011). Rather than simply computing an overall percentage of the simulated life paths in a particular cohort that would not have sufficient retirement income to pay for the simulated expenses, the new method computed the percentage of households that would meet that requirement more than a specified percentage of times in the simulation. As explored in the June 2011 EBRI Issue Brief, the RSPM allowed retirement-income adequacy to be assessed at retirement ages later than 65 (VanDerhei and Copeland, June 2011). In a July 2011 EBRI Notes article (VanDerhei, July 2011), RSPM was used to provide preliminary evidence of the impact of the “20/20 caps” on projected retirement accumulations proposed by the National Commission on Fiscal Responsibility and Reform. The August 2011 EBRI Notes article (VanDerhei, August 2011) used RSPM to demonstrate the impact of defined benefit plans in achieving retirement income adequacy for Baby Boomers and Gen Xers. In September it was used to support testimony before the Senate Finance Committee (VanDerhei, September 2011) in analyzing the potential impact of various types of tax-reform options on retirement income. This was expanded in the November 2011 EBRI Issue Brief (VanDerhei, November 2011).</td>
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<tr>
<td>2012</td>
<td>A March 2012 EBRI Notes article (VanDerhei, March 2012) used new survey results to update the analysis of the potential impact of various types of tax-reform options on retirement income. The May 2012 EBRI Notes article (VanDerhei, May 2012) provided 2012 updates for the previously published EBRI Retirement Readiness Ratings™ as well as the RSS. The June 2012 EBRI Notes article (VanDerhei, June 2012) introduced severity categories in the RSS projections for Gen Xers. The August 2012 EBRI Notes article (VanDerhei, August 2012) provided additional evidence on whether deferring retirement to age 70 would provide retirement income adequacy for the vast majority of Baby Boomers and Gen Xers. The September 2012 EBRI Notes article (VanDerhei, September 2012) analyzed the impact of increasing the default contribution rate for automatic enrollment 401(k) plans with automatic escalation of contributions.</td>
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—. “Is Working to Age 70 Really the Answer for Retirement Income Adequacy?” *EBRI Notes*, no. 8 (Employee Benefit Research Institute, August 2012): 10–21.

—. “Retirement Readiness Ratings and Retirement Savings Shortfalls for Gen Xers: The Impact of Eligibility for Participation in a 401(k) Plan.” *EBRI Notes*, no. 6 (Employee Benefit Research Institute, June 2012): 9–21.


—. “Retirement Savings Shortfalls for Today’s Workers.” *EBRI Notes*, no. 10 (Employee Benefit Research Institute, October 2010a): 2–9.


• "The Expected Impact of Automatic Escalation of 401(k) Contributions on Retirement Income." EBRI Notes, no. 9 (Employee Benefit Research Institute, September 2007): 2–8


• Testimony. U.S. Congress. Senate Special Committee on Aging. "Do We Have a Crisis in America? Results From the EBRI-ERF Retirement Security Projection Model" (T-141), 27 Jan. 2004.


• “The Impact of PPA on Retirement Income for 401(k) Participants.” EBRI Issue Brief, no. 318 (Employee Benefit Research Institute, June 2008).

• “ERISA At 30: The Decline of Private-Sector Defined Benefit Promises and Annuity Payments: What Will It Mean?” EBRI Issue Brief, no. 269 (Employee Benefit Research Institute, May 2004).

• “Can America Afford Tomorrow's Retirees: Results From the EBRI-ERF Retirement Security Projection Model.” EBRI Issue Brief, no. 263 (Employee Benefit Research Institute, November 2003).


• “Massachusetts Future Retirement Income Assessment Project.” A project of the EBRI Education and Research Fund and the Milbank Memorial Fund. December 1, 2002.


Endnotes

1 See VanDerhei and Copeland (July 2010) for more detail.

2 See VanDerhei (October 2010a) for more detail.

3 See VanDerhei (June 2012) for more detail.

4 For analysis of the impact of deferring retirement age beyond 65, see VanDerhei and Copeland (2011) and VanDerhei (September 2012).

5 At that point it is assumed that the house would be sold, the retirees would move to an apartment and any net proceeds would be used as a lump sum (as opposed to annuitizing the proceeds).

6 See VanDerhei (June 2012) for additional information.
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