EBRI
December 5, 2002

What Are the Income Replacement Ratios for Employees of Large Corporations?
Index

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Introduction

• Income replacement ratio
  — Annual retirement benefit as percent of pay immediately before retirement
  — Indicator of retirement income adequacy

• We will answer the stated question but not whether that is enough
Introduction

• This paper presents the major findings of a Hewitt study of projected retirement income levels
  — Preliminary study for employees at 23 large employers
  — Part of a series of reports to be published, on the topic of retirement income adequacy in the United States

• Comparison with EBRI study in *Perspective*, Vol. 8/No. 3, “Can 401(k) Accumulations Generate Significant Income for Future Retirees?”
### What the Analysis Covers

<table>
<thead>
<tr>
<th>Benefit Type</th>
<th>Hewitt Report</th>
<th>EBRI Study</th>
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<tbody>
<tr>
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<td>Defined Benefit</td>
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<td>Retiree Medical</td>
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<td>Grandfather Benefits</td>
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<td>Previous Employer Pension Benefits*</td>
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<td>Rolled Over Accounts</td>
<td>401(k) rollovers</td>
<td>401(k) and IRA rollovers</td>
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</table>

*Not rolled over into the plans of the current employer*
Hewitt Study

Employers Studied

• 23 large employers
  — Spanning a broad range of industries
  — 560,000 employees

• Data represents a segment of Hewitt’s 100+ Defined Contribution benefits administration clients

• Projected benefits for the employers studied are 1%–2% greater than benefit levels generally provided by Fortune 500 companies
### Hewitt Study

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<tr>
<th>Employees</th>
<th>Studied</th>
<th>Not Studied</th>
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<td>Average Employer Size</td>
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<tr>
<td>Average Age</td>
<td>41.2</td>
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<tr>
<td>Average Pay</td>
<td>$46,197</td>
<td>$23,300</td>
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<tr>
<td>Average Service</td>
<td>9.5 years</td>
<td>4.6 years</td>
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<tr>
<td>Average 401(k) Deferral Rate</td>
<td>5.95%</td>
<td>0.00%</td>
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</table>
Hewitt Study

Retirement Benefits Offered

• Defined Benefit (DB) plans
  — 18 of the 23 employers (78%) offer DB plans (69% in Hewitt universe*)
  — 11 of them are traditional final average pay (61% vs. 63% in Hewitt universe)
  — 7 are hybrid pension designs: 6 cash balance (33% vs. 25%); 1 pension equity (5% vs. 5%)

*As determined using the 2002–2003 Hewitt Associates SpecBook™, Hewitt’s plan specification database, with information on 960 companies, including 55% of the Fortune 500
Hewitt Study

Retirement Benefits Offered

• Defined Contribution (DC) plans
  — All employers studied offer DC plans (99% in Hewitt universe)
  — 5 offer only a DC plan (no DB plan)
  — Average match: $.63 per dollar up to 6% of pay compared with $.60 on average for Hewitt universe
Hewitt Study

Approach and Methods

Step I  Actual 01/01/2002 qualified DC account balance
  (1) Reduced by 10% to reflect negative anticipated returns in
      2002 (called year-to-date adjustment)
  (2) Projected to retirement age

Step II  Add projected qualified DB benefit at retirement

Step III  Add Primary Insurance Amount based on projected pay at
          retirement, under current Social Security formula

Step IV  Divide by projected pay at retirement
Baseline Scenario

Main assumptions:

— Retirement Age = 65
— Annual Interest on DC Balances = 7%
— Year-To-Date Asset Adjustment = -10% (DC only)
— Actual 401(k) Deferral Percentages, by Participant
Baseline Scenario—“Hot Zone”

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<th>Age at 1/1/2002</th>
<th>0 – 4</th>
<th>5 – 9</th>
<th>10 – 14</th>
<th>15 – 19</th>
<th>20 – 24</th>
<th>25 – 29</th>
<th>30+</th>
<th>35+</th>
<th>Total</th>
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<td>104.7%</td>
<td>106.1%</td>
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Legend

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<tr>
<th>Average Pay Replacement</th>
<th>Under 40%</th>
<th>40% – 59%</th>
<th>60% – 69%</th>
<th>70% – 79%</th>
<th>80% – 89%</th>
<th>90% – 99%</th>
<th>100%+</th>
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<td>135,631</td>
<td>91,169</td>
<td>90,361</td>
<td>37,280</td>
<td>562,049</td>
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<td>40% – 59%</td>
<td>14,709</td>
<td>135,631</td>
<td>91,169</td>
<td>90,361</td>
<td>37,280</td>
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<td>60% – 69%</td>
<td>135,631</td>
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<td>90,361</td>
<td>37,280</td>
<td>562,049</td>
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<tr>
<td>70% – 79%</td>
<td>91,169</td>
<td>90,361</td>
<td>37,280</td>
<td>562,049</td>
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<tr>
<td>80% – 89%</td>
<td>90,361</td>
<td>37,280</td>
<td>562,049</td>
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<td>90% – 99%</td>
<td>37,280</td>
<td>562,049</td>
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<td>100%+</td>
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Baseline Scenario—By Pay Brackets

Service at 1/1/2002

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<th>0 – 4</th>
<th>5 – 9</th>
<th>10 – 14</th>
<th>15 – 19</th>
<th>20 – 24</th>
<th>25 – 29</th>
<th>30+</th>
<th>35+</th>
<th>Total</th>
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<td>102.5%</td>
<td>102.7%</td>
<td>104.3%</td>
<td>105.8%</td>
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<td>100.9%</td>
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<td>104.7%</td>
<td>106.1%</td>
<td>92.1%</td>
</tr>
</tbody>
</table>

Legend

- **Count**
  - Under 40%
  - 40%–59%
  - 60%–79%
  - 80%–89%
  - 90%–99%
  - 100%+
  - Total

- **Average Pay**
  - Under 40%
  - 40%–59%
  - 60%–79%
  - 80%–89%
  - 90%–99%
  - 100%+

- **Average Pay Replacement**
  - Under 40%
  - 40%–59%
  - 60%–79%
  - 80%–89%
  - 90%–99%
  - 100%+

Count

<p>| | | | | | | | | | |</p>
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<td>Under 40%</td>
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</table>
Baseline Scenario—Comments

- Employees at most age and service levels have replacement ratios at or over 75%–80%
- High levels of retirement income can be achieved by completing 30–35 years of service under these programs
Baseline Scenario—Comments

• Even mid-career hires do rather well under these programs:
  — Employees hired in their 40’s and early 50’s can achieve replacement rates of 60%–75% in their 15–20 years of participation

• The average replacement ratio of 92.1% is
  — 45.8% from DC plans
  — 31.2% from Social Security
  — 15.1% from DB plans
Baseline Scenario—Comments

Contrast with EBRI study

- Major differences:

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<th>Hewitt Report</th>
<th>EBRI Study</th>
<th>Impact</th>
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<tr>
<td>Contributions</td>
<td>Actual data</td>
<td>Not always</td>
<td>May overstate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>contributing</td>
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<td>Additional Loans</td>
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<td>May overstate</td>
</tr>
<tr>
<td>Additional Preretirement</td>
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<td>7%</td>
<td>Approx. 9.75%</td>
<td>May understate</td>
</tr>
<tr>
<td>Outside Assets</td>
<td>Excluded</td>
<td>Included</td>
<td>May understate</td>
</tr>
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</table>
Baseline Scenario—Comments

Actuarial Assumptions Used

• Salary scale: 4%
  — Grading has no significant impact, so constant rate used

• Assumptions to convert DC balances to annuities:
  — Interest rate: 6%
  — Mortality Table: according to Revenue Ruling 2001-62\(^1\)

\(^1\)The Prevailing Commissioner’s Standard Table unloaded, weighted 50% male and 50% female, with 8 years of mortality improvement
Baseline Scenario — Comments

Actuarial Assumptions Used (continued)

- Interest on DC balances: 7% annually
  - Defined benefit funding assumption averages 8.29% for Hewitt clients (2001)
  - 401(k) participants may, over the long run, experience lower returns due to
    - Higher investment expenses
    - Lack of professional management
    - Conservative tendencies
Baseline Scenario—Comments

Actuarial Assumptions Used (continued)

• Employee 401(k) deferrals: 5.95% of pay on average for contributing participants
  — Range from 3.53% to 9.38% (on average per employer)
• Retirement age: 65
  — Typical retirement assumption
• Social Security: Starting at age 65
• Inflation: 3%
  — Consensus forecast
Alternate Scenario 1—Impact of Employee Contribution Levels

Main assumptions:

— Retirement Age = 65
— Annual Interest on DC Balances = 7%
— Year-To-Date Asset Adjustment = -10% (DC only)
— Actual 401(k) Deferral Percentages, by Participant, increased by 2%
# Alternate Scenario 1—“Hot Zone”

**Service at 1/1/2002**

<table>
<thead>
<tr>
<th>Age at 1/1/2002</th>
<th>0 – 4</th>
<th>5 – 9</th>
<th>10 – 14</th>
<th>15 – 19</th>
<th>20 – 24</th>
<th>25 – 29</th>
<th>30+</th>
<th>35+</th>
<th>Total</th>
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<tr>
<td>60 – 64</td>
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<table>
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<th>25,564</th>
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<th>4,212</th>
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<td>13.08</td>
<td>10.73</td>
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<td>14.67</td>
<td>13.12</td>
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<td>19.41</td>
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</tbody>
</table>

**Legend**

- Under 40%
- 40% – 59%
- 60% – 79%
- 80% – 89%
- 90% – 99%
- 100%
- Total

---

EBRI.PPT97 02Ad 12/2002
Alternate Scenario 1—Comments

- The longer an employee can save additional funds, the greater the impact on retirement income
  - For employees age 20–24 with 5–9 years of service, the replacement ratio increases from 99.8% to 119.7% or a 20% increase
  - For employees age 40–44 with 10–14 years of service, the replacement ratio increases from 94.8% to 102.0%, or a 7.5% increase
Alternate Scenario 2: Impact of Late Retirement

Main assumptions:

— *Retirement Age* = 67
— Annual Interest on DC Balances = 7%
— Year-To-Date Asset Adjustment = -10% (DC only)
— Actual 401(k) Deferral Percentages, by Participant
### Alternate Scenario 2—“Hot Zone”

**Service at 1/1/2002**

<table>
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<tr>
<th>Age at 1/1/2002</th>
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<th>10 – 14</th>
<th>15 – 19</th>
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<th>25 – 29</th>
<th>30+</th>
<th>35+</th>
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<tr>
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<td>$37,371</td>
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<td>$27,669</td>
</tr>
<tr>
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<td>100.1%</td>
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<td>114.2%</td>
<td>58,514</td>
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<td></td>
<td>122.7%</td>
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<tr>
<td></td>
<td>$37,476</td>
<td>$37,360</td>
<td>$33,453</td>
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<td></td>
<td>$37,371</td>
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<td>$37,371</td>
</tr>
<tr>
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<td>$43,641</td>
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</tr>
<tr>
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<td>100.1%</td>
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</tr>
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</table>

**Legend**

- **Count**
- **Average Pay**
- **Average Pay Replacement**

<table>
<thead>
<tr>
<th>Count</th>
<th>Under 40%</th>
<th>40% – 49%</th>
<th>50% – 59%</th>
<th>60% – 79%</th>
<th>80% – 89%</th>
<th>90% – 99%</th>
<th>100%+</th>
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<td>4</td>
<td>5</td>
<td>6</td>
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</table>

23
Alternate Scenario 3: Impact of Early Retirement

Main assumptions:

— *Retirement Age* = 62
— Annual Interest on DC Balances = 7%
— Year-To-Date Asset Adjustment = -10% (DC only)
— Actual 401(k) Deferral Percentages, by Participant
### Alternate Scenario 3—“Hot Zone”

**Service at 1/1/2002**

<table>
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<tr>
<th>Age at 1/1/2002</th>
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<th>10 – 14</th>
<th>15 – 19</th>
<th>20 – 24</th>
<th>25 – 29</th>
<th>30+</th>
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<th>Total</th>
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<td></td>
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</tr>
<tr>
<td>20 – 24</td>
<td>23,916</td>
<td>1,734</td>
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<td>25,650</td>
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<td>79.7%</td>
<td>85.2%</td>
<td>87.9%</td>
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<td>69.2%</td>
</tr>
<tr>
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<td>77.7%</td>
<td>84.2%</td>
<td>89.9%</td>
<td>94.7%</td>
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<td>48.7%</td>
<td>58.6%</td>
<td>68.2%</td>
<td>71.1%</td>
<td>75.5%</td>
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<td>47.8%</td>
<td>56.6%</td>
<td>63.6%</td>
<td>67.8%</td>
<td>70.1%</td>
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<tr>
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<td>68.3%</td>
<td>75.4%</td>
<td>81.2%</td>
<td>82.7%</td>
<td>84.2%</td>
<td>86.7%</td>
<td>89.8%</td>
<td>74.3%</td>
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**Legend**

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<tr>
<th>Count</th>
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<th>Average Pay Replacement</th>
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<td>40% – 59%</td>
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<td>60% – 79%</td>
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<td>80% – 89%</td>
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<td>90% – 99%</td>
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<tr>
<td>100%</td>
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<td>Total</td>
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EBRI.PPT97 02Ad 12/2002
Alternate Scenarios 2 and 3—Comments

• Delayed retirement date helps increase replacement ratios about 12%–14%
  — Virtually every group moves over 70%, except those 55 and older with low tenure
  — Vast majority is over 85%

• Early retirement at age 62 is feasible only for employees with full careers under these (or comparable) plans, or outside assets
Conclusions

- Contributing employees of large U.S. employers are highly likely to have retirement income levels that are very close to their pre-retirement income.

- Without the DC component (24.5% of the population considered for this study), replacement income levels drop dramatically.

- The earlier additional contributions are made, and the longer retirement is deferred, the replacement ratio increases.