An Empirical Analysis of 401(k) Loan Defaults

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Most can borrow from 401(k)s:

• 401(k) plans cover ~ 62M workers w/ ~$3T in assets.*
• Three-quarters of plans allow ≥ 1 loan.**
• Most participants may take ≥ 1 plan loan.***

* US Dept. of Labor 2007; **Vanguard 2007; ***Vanderhei and Holden 2001

Why do DC plans allow loans?

• Paternalism: ERs want to encourage retirement saving… but worry the low-paid won’t unless can access $.

• Nondiscrimination rules: For highly-paid to get pre-tax contributions, low-paid need inducements.

➡ Prior studies: Loans

– Raise participation rates (GAO 1997)

Plan Loans Attractive:

• No credit check;
• Small yearly fee;
• Loan pre-tax, repayment after-tax;
• Loan & interest paid to self;
• Low interest rates;
• Longer repayment period:
  ✓ 5 years for regular loan;
  ✓ 30 years for principal residence.
But..Loans Have Restrictions:

- Max Loan: Min [50% of account, $50K]
  - Cap same as in 1980.
- Min Loan: Usually ≥ $1K.
- Usually 1 loan at a time but some allow 3+ loans.
- If leave ER: Repay in full prior to end of next Q
  - Else loan is considered defaulted.
- If default:
  - Owe income tax + 10% penalty tax on defaulted amount.

What Determines Plan Borrowing
(Lu/Mitchell)

- Plan features
  N loans allowed: +
  Web: +
- Loan features
  Loan interest rate: NS
- Individual charac’s
  Income, Account Bal, Other Assets: -
  Plan tenure and Female +
  Age: hump-shaped

Our Current Question:
Why do borrowers default on their 401(k) loans when leave jobs?

Hypotheses
- Liquidity/Credit constraints
  - Insufficient liquid assets to pay off loan;
  - Expensive outside credit options.
- Plan Design: Buffer stock
- Macroeconomy? Involuntary job losses.

Recall:
- Cannot default on the job.
- When leave job, must repay in full before the end of next quarter
  - Else loan is considered defaulted
- If default:
  - Owe income tax + 10% penalty tax on defaulted amount
Sample Characteristics (07/05-06/08)

<table>
<thead>
<tr>
<th>Participants terminating employment with a loan</th>
<th>Defaulting</th>
<th>Repaying</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>84K</td>
<td>20K</td>
<td>104K</td>
</tr>
<tr>
<td>Av HH Income</td>
<td>$68K</td>
<td>$83K</td>
<td>$71K</td>
</tr>
<tr>
<td>Low Wealth</td>
<td>63%</td>
<td>45%</td>
<td>60%</td>
</tr>
<tr>
<td>Acc. Balance</td>
<td>$39K</td>
<td>$79K</td>
<td>$46K</td>
</tr>
<tr>
<td>Loan Balance</td>
<td>$7K</td>
<td>$8k</td>
<td>$7K</td>
</tr>
</tbody>
</table>

Sample Characteristics (Continued)

<table>
<thead>
<tr>
<th>Participants terminating employment with a loan</th>
<th>Defaulting</th>
<th>Repaying</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>84K</td>
<td>20K</td>
<td>104K</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>42</td>
<td>44</td>
<td>42</td>
</tr>
<tr>
<td>Av Plan Tenure (yrs)</td>
<td>8</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Male</td>
<td>46%</td>
<td>45%</td>
<td>46%</td>
</tr>
</tbody>
</table>

| # Loans Allowed                                 | 1.7        | 1.7      | 1.7 |
| # Loans Taken                                   | 1.3        | 1.1      | 1.2 |
| Web Registered                                  | 63%        | 62%      | 63% |

Loan Default Patterns

<table>
<thead>
<tr>
<th>% actives with loan on June 30</th>
<th>July 06 – June 06</th>
<th>July 07 – June 07</th>
<th>July 07 – June 08</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of borrowers terminating with loan</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Default rate as % of those terminating with loan</td>
<td>82%</td>
<td>81%</td>
<td>79%</td>
</tr>
<tr>
<td>Default rate as % of those with loan outstanding</td>
<td>10%</td>
<td>9%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Default Rates By N Loans Allowed and Taken

<table>
<thead>
<tr>
<th>Fully Default (%)</th>
<th>Partial Default (%)</th>
<th>Fully Pay Off (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 allowed</td>
<td>79</td>
<td>N/A</td>
</tr>
<tr>
<td>&gt;1 allowed, 1 taken</td>
<td>74</td>
<td>N/A</td>
</tr>
<tr>
<td>&gt;1 allowed &amp; taken</td>
<td>94</td>
<td>1</td>
</tr>
</tbody>
</table>

Marginal Effects: Determinants of 401(k) Loan Defaults

In Sum: Defaults driven by

✓ Liquidity constraints
   – Low Income, financial assets, account balance
   – High loan balance

✓ Plan Design
   – More loans outstanding (given total loan amt)

✗ Macro effects
   – State unemployment rate NS

Policy Implications

• Recall:
  – 20% of active participants have loans;
  – 12% of plan borrowers leave job with loan;
  – 80% who terminate with loan default;
  – Hence default rate among all borrowers <10%.

• How to reduce defaults?
  – Restrict N of loans outstanding.
  – Restrict size of loans.
  – Allow repayment post-job change (may raise administrative cost).
Thank you.

Questions or comments?

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