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DO CATCH-UP CONTRIBUTIONS INCREASE 401(K) SAVING?

BY QI GUAN, MATTHEW S. RUTLEDGE, APRIL YANYUAN WU, AND FRANCIS M. VITAGLIANO*

Introduction

Changes in the retirement landscape – rising life expectancy, declining Social Security replacement rates, and vanishing traditional pensions – increase the need for individuals to save. The tax code encourages individuals to save in 401(k) plans by allowing tax-advantaged contributions up to specified limits. In 2001, policymakers increased these limits for all ages and established a new catch-up provision for workers age 50 or older, which allows them to contribute much more.

This *brief*, which summarizes a recent study, assesses the extent to which the catch-up provision has increased 401(k) contributions.¹ The discussion is structured as follows. The first section introduces the catch-up provision. The second section defines the data and the sample used in the analysis. The third section examines the characteristics of the group most likely to take advantage of the provision: the small percentage of workers who previously contributed near the maximum level. The fourth section analyzes how contributions changed after the adoption of the catch-up provision. The final section

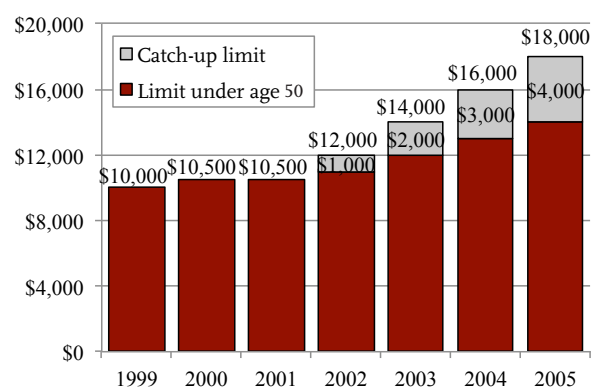
concludes that only those near the maximum respond to increased tax incentives to save in 401(k)s, which is consistent with previous research.

Catch-Up Contributions

Under defined contribution plans such as traditional 401(k)s, contributions are pre-tax, up to a deferral limit, and are only taxed at withdrawal.² The contribution limits have long been adjusted for inflation but, in 2001, policymakers increased the limits at a faster rate through 2005. They also introduced a catch-up provision, establishing a much higher contribution limit for workers age 50 and over.³ The idea behind the provision is that individuals, who may postpone saving for retirement when they are younger, need to step up their saving as their retirement age starts to loom larger. The basic contribution limit rose from \$10,500 in 2001, just before the new law took effect, to \$14,000 in 2005 while the allowable catch-up contribution went from \$0 to \$4,000 during this period (see Figure 1 on the next page).⁴

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FIGURE 1. 401(k) EMPLOYEE DEFERRAL LIMITS BY AGE, 1999-2005



Source: Investment Company Institute (2006).

The impact of the catch-up provision on 401(k) saving has received little attention; the few existing studies are limited to descriptive analyses conducted shortly after its adoption.⁵ These studies were not designed to determine whether the catch-up provision increased contributions, particularly for workers age 50 and older who were already contributing near the maximum, the one group facing a much greater incentive to save.

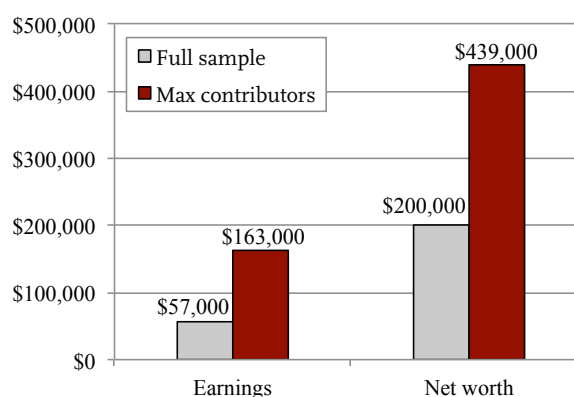
Data and Sample

This study uses the U.S. Census Bureau's *Survey of Income and Program Participation*, a panel survey of households over a two- to five-year period that includes demographic and economic variables, linked to the Social Security Administration's Detailed Earnings Records.⁶ These data include each year's total earnings and deferrals to 401(k) plans. The sample includes any individual who was ever age 46-53 between 1999 and 2005, just before and after the adoption of the catch-up provision. The primary sample for the analysis includes only individuals with valid Social Security records, without work-preventing health conditions, and with consistent earnings.⁷ This constraint removes inconsistent and low-earning individuals, who are less likely to be offered or eligible for a 401(k), or to contribute even if eligible.⁸

Who Are the Maximum Contributors?

For most people, contributing the maximum amount to a 401(k) in any year is not an easy task. Only about 9 percent of individuals in the sample have 401(k) contributions within 10 percent of the deferral limit. Not surprisingly, the difference in mean earnings and wealth between max and non-max contributors is dramatic: max contributors earn about \$163,000 and have a net worth of \$439,000, compared to \$57,000 and \$200,000, respectively, for the full sample (see Figure 2).⁹

FIGURE 2. MEAN EARNINGS AND ASSET LEVELS FOR MAXIMUM CONTRIBUTORS AND FULL SAMPLE, 2005 \$



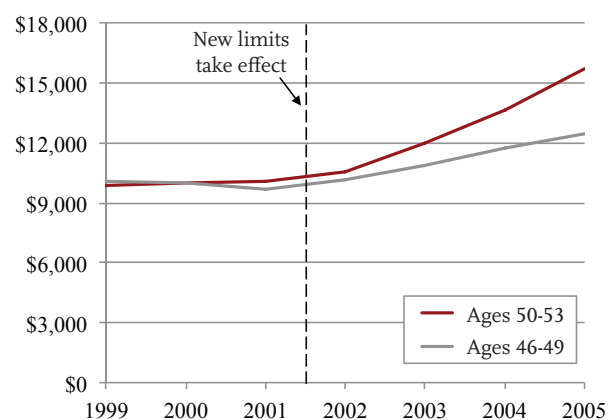
Source: Authors' calculations from the U.S. Census Bureau, SIPP Completed Data Files (1999-2005).

Estimating the Response to Higher 401(k) Limits

As noted, between 2002 and 2005, the tax-deferred limits on 401(k) contributions increased modestly for individuals under age 50 and substantially for individuals age 50 and over. The initial step in the analysis is simply to look at contribution amounts during

this period among workers at or near the maximum who were above and below age 50. As expected, every year between 2001 and 2005, max workers in both age groups increased their contributions (see Figure 3). The older age group – those now eligible to make catch-up contributions – increased their contribution by an average of 14 percent per year compared to 7 percent per year for the younger age group.

FIGURE 3. AVERAGE 401(K) CONTRIBUTIONS BY AGE AMONG MAXIMUM CONTRIBUTORS, 1999-2005, 2005 \$



Source: Authors' calculations from the *SIPP Completed Data Files* (1999-2005).

Regression Model

The next step is to use a regression model to examine whether the pattern in Figure 3 is still evident after controlling for differences in the characteristics of workers just under and just over age 50. The model compares workers along three dimensions: 1) workers before and after the adoption of the higher base contribution limits and the catch-up provision; 2) workers who are under age 50 versus 50 and older, because older individuals have a higher contribution limit; and 3) participants who are near the contribution limit in any prior year versus workers who have never approached the limit, because the latter group's tax incentives remain unchanged. The model is structured as:

$$\begin{aligned} 401(k) \text{ contributions} &= f(\text{Year, Age, Max, controls}) \\ &\text{with interaction terms for:} \\ &(\text{Year})(\text{Age}), (\text{Year})(\text{Max}), (\text{Age})(\text{Max}), (\text{Year})(\text{Age})(\text{Max}) \end{aligned}$$

The dependent variable is the individual's annual total 401(k) contribution, adjusted for inflation (2005 dollars).¹⁰ The independent variables identify whether the catch-up provision is in effect (Year); whether an individual is age 50 or older (Age); whether an individual has made near-maximum contributions in any prior year (Max); and the interactions of these three indicators.¹¹ The key coefficient of interest is on the triple-interaction of the year, age, and maximum contribution indicators. A positive and significant triple-interaction coefficient would indicate that max individuals age 50 or older increase their contribution by more than max individuals under age 50.

Results

The key results are the predicted post-2001 increase in 401(k) contributions for four groups of workers. Mechanically, the results come from adding together the relevant coefficients for the terms in the equation (see Table 1).

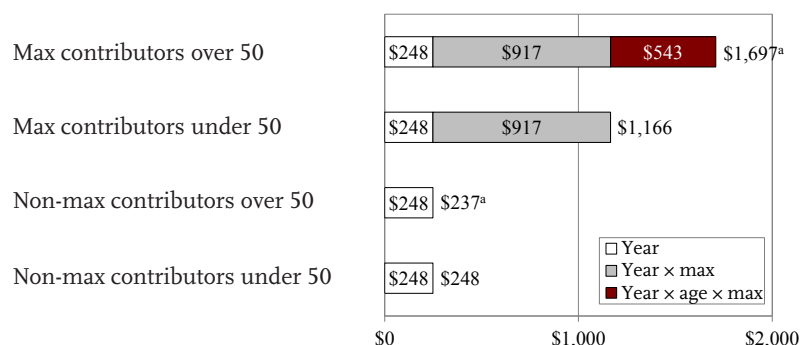
TABLE 1. COEFFICIENT RESULTS FOR FACTORS USED IN PREDICTING 401(K) CONTRIBUTIONS, 2005 \$

Variable	Coefficient
Year	\$248
Age	96
Max	5,604
(Year)(Age)	-11
(Year)(Max)	917
(Age)(Max)	-461
(Year)(Age)(Max)	543

Source: Authors' estimates from the *SIPP Completed Data Files* (1999-2005).

The two bottom bars in Figure 4 (on the next page) cover the workers *not* constrained by the deferral limit; both of these groups contribute only a small amount more after the adoption of the catch-up provision than they did before. Specifically, the bottom bar in Figure 4 shows the change in 401(k) contributions for a non-max worker under age 50; this result is simply the \$248 coefficient value for the Year term above. The next bar, for non-max workers over 50, requires adding the coefficients for Year and the Year-Age interaction (\$248 - \$11 = \$237).¹²

FIGURE 4. PREDICTED INCREASE IN 401(k) CONTRIBUTIONS FROM 1999-2001 TO 2002-2005, 2005 \$



^a For simplicity, the figure does not depict the impact of the (Year)(Age) interaction. This interaction reduces the predicted total increase in contributions by \$11 for each of the two groups that include individuals age 50 and over.

Note: All bars are statistically significant.

Source: Authors' estimates from the *SIPP Completed Data Files* (1999-2005).

As expected, the story is much different for those workers near the maximum (the top two bars in Figure 4). Max workers under age 50 contribute a statistically significant \$917 more after 2001 than non-max contributors in the same age group, reflecting that the contribution limit was increasing faster than inflation for all ages. The \$917 is added to the \$248 for a total additional contribution of \$1,166.

The largest effect was for those max workers who were 50 and over. The coefficient for the triple interaction was an additional \$543, which is also statistically significant. This amount is added to the \$917 amount for max contributors regardless of age, the \$248 indicating the post-2001 period, and the -\$11 year-age interaction for a total additional contribution of \$1,697.

The tax-deferred limit for the over-50 max group went up by 22 percentage points more than the increase for the under-50 max group. In response, the older group increased their dollar contributions by 4.6 percent. These results imply that for every 1-percentage-point increase in the tax-deferred limit, maximum contributors will increase their contributions by 0.2 percentage points. While this group does not increase their contributions all the way up to the new limit, they appear to be somewhat sensitive to tax incentives to increase their 401(k) saving.¹³

A caveat here is that the analysis does not address the extent to which the increase in 401(k) contributions among maximum earners represents an increase in their *total* saving. While their 401(k) saving clearly increased, it is possible that these individuals simply shifted their planned saving from a non-tax-advantaged account into their 401(k).

Conclusion

The study indicates that at least one group of 401(k) participants is sensitive to a change in tax incentives: workers around age 50 who are constrained by the tax-deferred maximum. When permitted to contribute an additional 6.8 percent starting in 2002, workers age 50 and older increased their 401(k) saving by 3.5 percent. This finding of a strong response by a small group of individuals with high incomes is consistent with recent research examining changes in tax incentives.¹⁴ The bottom line is that further tinkering with the contribution limit for 401(k)s would likely affect only a very small group of people; it does not offer a broad-based solution for low saving rates in the United States.

Endnotes

- 1 Rutledge, Wu, and Vitagliano (2014).
- 2 Roth 401(k)s, which currently hold only a small percentage of total 401(k) assets, work differently; contributions are taxed up-front but all earnings are exempt from taxation.
- 3 Both changes were part of the Economic Growth and Tax Relief Reconciliation Act of 2001.
- 4 In 2015, the basic limit is \$18,000 and the allowable catch-up amount is \$6,000.
- 5 See Orszag (2004) and Kawachi, Smith and Toder (2005). Holden et al. (2005) examine a similar provision in Individual Retirement Accounts.
- 6 The authors access the SIPP-SSA data through the SIPP Synthetic Beta initiative. The analysis is run on synthesized data to alleviate privacy concerns, and then replicated on the actual data in the SIPP Completed Data File.
- 7 A worker is considered to be consistently employed if he earns four Social Security credits in each year in which he is age 46-53 during the sample window. One credit is equal to \$740 in 1999 dollars, or \$920 in 2005 dollars.
- 8 Wu and Rutledge (2014).
- 9 Max contributors are also more likely to be male, married, white, and have at least a college degree, and are less likely to have children under 24.
- 10 Results with the contribution rate (the ratio of deferred earnings to total earnings) as the dependent variable are similar; see Rutledge, Wu, and Vitagliano (2014).
- 11 The dummy variable for near-maximum deferrals is equal to one if any prior year's contributions were within 10 percent of the deferral limit.
- 12 The coefficients for the variables without Year are not included in the results for Figure 4; these coefficients are cancelled out because the analysis focuses only on the *change* in 401(k) contributions after the limits were raised.

13 The full sample includes individuals who did not contribute to a 401(k) at all. Estimates excluding workers with zero contributions are similar.

14 Chetty et al. (2014).

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