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Briefing Paper

# The Stock Market Bubble and Investing Social Security in the Stock Market

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## EXECUTIVE SUMMARY

There has been a prolonged policy debate over the last decade over the merits of investing Social Security funds in the stock market, either indirectly through individual accounts or directly through the trust fund. In debating this issue, there has been almost no attention paid to the question of the timing of the proposed investment. Since the stock market was experiencing an unsustainable bubble over much of this period, the failure to consider this timing could have produced large losses to workers or the trust fund.

This paper calculates the potential losses if varying fractions of Social Security funds, as proposed by advocates, had been placed in the stock market in each of the last four years (rather than the government bonds currently held by the trust fund). Assuming that half of the money in individual accounts would have been placed in the stock market, it finds that based on market values as of June 30<sup>th</sup>, 2002:

- A 2 percent carve out for individual accounts would have led to losses of more than \$31 billion if the policy had been put in place in 1998 and \$29 billion if it had been put in place in 1999;
- A 5 percent carve out for individual accounts would have led to losses of more than \$78 billion if the policy had been put in place in 1998 and \$72.6 billion if it had been put in place in 1999;
- This money would have been directly transferred from the current generation of workers to incumbent stockholders. Since most stock is held by the richest 5 percent of the population, the distributional effects would have been extremely regressive.
- It was easy to recognize the existence of a bubble in the stock market at the time. The bubble would have been apparent to participants in the debate, if they had taken the time to derive projections of stock returns from the components, dividends, and capital gains.

The paper concludes by noting the importance of the timing of investment in the stock market, since markets do occasionally experience bubbles. The most notable recent example outside of the United States is the Japanese market, which in 2002 is hovering at a level that is less than one-third of its 1989 peak. This means that people who placed their money in the Japanese stock market in 1989 would have lost more than two-thirds of their investment.

## THE STOCK MARKET BUBBLE AND INVESTING SOCIAL SECURITY IN THE STOCK MARKET

Over the last six years, there has been a prolonged policy debate over the merits of replacing a portion of the Social Security system with individual accounts. The main argument given by proponents of individual accounts is that such accounts will provide workers with a higher rate of return. The higher return would be a result of the fact that workers could invest a portion of these accounts in stocks rather than the government bonds held by the Social Security trust fund. Since stocks have historically provided a higher rate of return than bonds, proponents of individual accounts argued that these accounts would have higher returns than if the money were left in the Social Security trust fund (e.g. The President's Commission to Strengthen Social Security, 2001 or Feldstein and Samwick, 1997).

Opponents of individual accounts have pointed to the additional risk that workers would incur in what is supposed to be their core retirement income. They have also pointed to the fact that the administrative costs of these accounts will be several times larger than the cost of operating the existing system, and that these costs are a pure waste of resources from an economic standpoint. They have also noted that the returns to workers can be raised within the existing system by investing a portion of the trust fund in stocks, for example, or by adding funds from general revenue to the Social Security trust fund (e.g. Aaron and Reischauer, 2001 or Eisner, 1998).

It is also important to recognize that investing Social Security money in the stock market does not create new wealth. Insofar as stocks draw a higher return than government bonds, the gains from having Social Security in the market would come at the expense of other stock holders, who would get a lower return, and at the expense of the general budget, as the government would now be paying higher interest rates on its bonds. The lower return to stockholders can be thought of as a tax on capital income, whereas the higher interest payments on government bonds can be viewed as a transfer of general revenue. If taxing capital and transferring money from general revenue are considered desirable ways to increase the returns to Social Security, this can be accomplished without actually placing Social Security money in the stock market.

While all of these issues are important to the debate over individual accounts, there is a separate issue which has been almost completely overlooked—the timing of a switch to individual accounts. In other words, it is possible to argue that individual accounts are in principle desirable, but that it is not appropriate to make the switch at a specific point in time, because the stock market is seriously over-valued.

Since the stock market experienced a bubble during the last five years, it would have been quite appropriate to raise the issue of timing. Had plans for individual accounts actually been adopted during this period, they would have resulted in large losses to workers. (This would also be the case if a portion of the trust fund had been invested in the stock market.) Table 1 shows the losses, as of 2002, that workers would have incurred had such a plan been adopted in the years from 1998 to 2001. (The construction of the table is explained in the appendix.)

**Table 1 – Potential Losses Due to Investing in Stock Bubble**

<b>Year of Carve Out</b>	<b>Column A 2 Percent Carve Out</b>	<b>Column B</b>	<b>Column C</b>	<b>Column D 5 Percent Carve Out</b>	<b>Column E</b>	<b>Column F</b>
	Billions of 2002 dollars.		Net Loss			Net Loss
	Bonds	Stock	to Fund	Bonds	Stock	to Fund
1998	\$191.5	\$160.3	\$31.3	\$478.8	\$400.7	\$78.1
1999	158.3	129.3	29.0	395.9	323.3	72.6
2000	122.7	102.6	20.2	306.8	256.4	50.4
2001	84.6	76.3	8.3	211.5	190.7	20.9

Source: *Social Security Trustees Report 2002, Economic Report of the President, 2002*, and author's calculations. See appendix.

The table shows the accumulations in both the bond portion and the stock portion of 2.0 percent and 5.0 percent carve-outs, under the assumption that individual accounts are divided equally between stock and bond deposits. The net loss is the difference between the accumulation on the bond side and the accumulation on the stock side, since all the money would be invested in government bonds if there were no carve-out.

The table shows that if a 2 percentage point carve-out had been adopted in 1998, workers would have lost \$31.3 billion as a result of putting a portion of their Social Security money in the stock market, as shown in column C. If a 5 percentage point carve out had been adopted in that year, as advocated by many proponents of individual accounts, then the losses to workers would have been \$78.1 billion as of 2002, as is shown in column F. The losses would have been somewhat lower had the carve-out been initiated in 1999 or 2000. Even though workers would have missed virtually all of the upside of the market had the carve-out been started in these years, the loss would not be as great, since they would have less money invested in the stock market.

The money that workers would have lost as a result of investing in the stock market would have been transferred to the individuals who held stock at the time. Since stock ownership is extremely concentrated, with the richest 1 percent of stockholders owning 37 percent of all shares of stock and the richest 5 percent holding 65 percent, this would have amounted to a large upward transfer of wealth (Poterba, 2000).

It is difficult to explain the fact that advocates of investing Social Security money in the stock market never considered the issue of timing even when it was quite apparent that the stock market was experiencing a bubble. At its peak in 2000, the price to earnings ratio of U.S. corporate equities exceeded 30 to 1, more than twice its historic average. It was easy to show that either stock returns would remain very low indefinitely—not much higher than the return on government bonds—or that stock prices would fall to bring returns closer to their historic

average.<sup>2</sup> In either scenario, there was little argument for investing Social Security money in the stock market at the time.

This fact would have been apparent to everyone in the policy debate if the Social Security Administration had derived its assumptions on stock returns from projections for the components of returns—dividends and capital gains—which were in turn constructed to be consistent with the other projections used in the Social Security trustees' report. Such projections would have shown the impossibility of substantially increasing the returns to Social Security through investing in the stock market, given the high valuations that existed at the time. Table 2 shows a set of projections that was derived in this manner in May of 1999, near the peak of the bubble.<sup>3</sup>

**Table 2 – Projected Stock Returns**

	<b>Dividend Yield</b>	<b>Capital Gain</b>	<b>Total Return</b>
2000-2010	1.6	2.0	3.6
2010-2020	1.9	1.6	3.5
2020-2030	2.0	1.4	3.4
2030-2040	2.0	1.5	3.5
2040-2050	2.0	1.4	3.4
2050-2060	2.0	1.4	3.4
2060-2070	2.0	1.4	3.4
2070-2075	2.0	1.4	3.4

Source: Baker 1999.

The 3.5 percent real return shown in the table is only slightly higher than the 3.0 percent real return that the trustees assume for government bonds. The difference would barely be sufficient to cover the administrative costs of individual accounts.<sup>4</sup>

While the stock bubble has deflated substantially from its peak levels, price to earnings ratios in the stock market remain significantly above their historic average. If the future return on stocks will be comparable to its past return, then the price to earnings ratio will have to decline much further.<sup>5</sup> In fact, since the Social Security trustees assume that profits will grow much more

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<sup>2</sup> See Baker 1997 or 1999.

<sup>3</sup> This table appears in Baker 1999, where a full explanation of the construction of these projections is available.

<sup>4</sup> President Bush's Commission to Strengthen Social Security assumed that the administrative cost for individual accounts would be 0.3 percent of their holdings. If stocks provided a 3.5 percent return, then an account that held 50 percent in stocks and 50 percent in bonds would provide a 3.3 percent real return before deducting the 0.3 percentage point administrative cost.

<sup>5</sup> In fact, the Social Security Administration appears to have assumed that stock prices will drop substantially when it discussed its basis for the projection that the long-term return on stocks will be 6.5 percent; but it did not factor in the impact of this decline on the value of workers accounts (see Goss 2001, p 57).

slowly in the future than they have in the past, the price to earnings ratio will have to fall below its historic average if stocks are to provide the same return in the future as in the past.

It is remarkable that the Social Security Administration has yet to provide a set of projections of stock returns that could inform the debate over individual accounts. Since Social Security works from a fixed set of projections where there is an assumed path for profit growth, the process of deriving projections of stock returns from the components is quite straightforward, as has been shown.<sup>6</sup> Because markets do occasionally experience bubbles, refusing to consider the timing of a switch to individual accounts could lead to enormous unnecessary costs. In 1989, the Nikkei, Japan's main market index, hit 39,000. Thirteen years later the Nikkei is hovering near 13,000, implying that investors would have lost more than two thirds of any money put into the market at its peak. The losses implied by the collapse of the U.S. stock market bubble would not be quite as large, but these workers should nonetheless not be subjected to the risk of investing in a bubble simply because of the failure of the Social Security Administration to do its job.

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<sup>6</sup> See also Diamond 2000.

## APPENDIX

The first three columns of Table 1 assume that 2 percentage points of the payroll tax are carved out to create individual accounts, with half of the money invested in stocks and half in bonds. The second three columns assume that 5 percentage points of the payroll tax are carved out for these accounts. The amount of money implied by this carve out is taken from the 2002 Social Security Trustees Report. (The 2002 figure is an estimate.) The bond funds are assumed to earn the average yield on ten-year government bonds in the year that they were invested (*Economic Report of the President, 2002*, table B-73). (This means money invested in 1998 always earns the average interest rate in 1998 on ten year bonds.) The return on stocks is set equal to the average dividend yield for the S&P 500 for each year, plus the change in the average value of the S&P 500 over the course of the year (*Economic Report of the President, 2002*, table B-95). For 2002, it is assumed that the market stays at its value as of June 30<sup>th</sup>. For all years, it assumed that funds are invested equally over the course of the year, so that half of the annual investment draws interest or dividends for the year.

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