

## A New Strategy for Social Security Investment in Latin America

Martin Feldstein\*

Thank you. I'm very pleased to be here in Mexico and to have this opportunity to talk to a group that understands so well the value of investment based Social Security systems.

Chile was the global pioneer in the shift from traditional tax-financed pay-as-you-go Social Security to the new investment based approach. The success in Chile has inspired others throughout Latin America and elsewhere in the world to move in the same direction.

Each country that has followed Chile has modified the Chilean program to suit local political and economic conditions. And over the years countries with investment-based Social Security programs have modified them to make them work better. That kind of evolution is important. In my remarks today I will suggest another step in that evolution that I believe can improve the return and risk in investment based Social Security programs throughout Latin America.

Latin America is clearly ahead of Europe in the introduction of investment-based Social Security.<sup>1</sup> Among the European countries, Britain is the most advanced. Sweden has recently moved to a mixed system with a small investment-based component. The Eastern Europe countries and some of the Scandinavian countries are also ahead of the major countries of continental Europe. But those countries that have not yet moved to investment based programs recognize the problem with their current system and, in my judgement, will eventually overcome their reluctance to change. If they do not, there is no hope of achieving an integrated labor market in Europe.<sup>2</sup>

---

\*Professor of Economics, Harvard University, and President of the National Bureau of Economic Research. These remarks were prepared for delivery at the Inter-American Conference of Social Security held in Mexico City on October 7, 2002.

<sup>1</sup>See M. Feldstein and H. Siebert, Coping with the Pension Crisis – Where Does Europe Stand? (Chicago: University of Chicago Press, 2002)

<sup>2</sup>M. Feldstein, "The Future of Social Security Pensions in Europe," NBER Working Paper 8487 ([www.nber.org/papers/w8487](http://www.nber.org/papers/w8487)) in Naar beste vermogen, Essays Honoring Pieter Korteweg, eds. J.J. van Duijn et al., Kluwer, December 2001

We in the United States have a well developed system of voluntary supplementary individual pensions but these are far from universal. Our universal Social Security system is an old-style tax financed pay as you go program. It is expensive now and will get much more expensive as the population ages.

President Bush understands this and has proposed a mixed system that combines the traditional tax financed system with a new investment-based program that uses personal retirement accounts. The opposition party opposes this change but I believe it will eventually happen. The outcome of the election next month will determine when this change can occur.

But let me now turn to the situation here in Latin America. I want to focus my remarks on two related issues: dealing with the risk in an investment-based Social Security program and selecting the assets that should be in the personal retirement accounts.

### The Case for Investment Based Social Security

Before I get to my main topic, let me speak to those of you here who are from the countries that have not yet made the shift from a pay-as-you-go system to an investment-based program or a mixed system that combines pay-as-you-go and investment based features. Let me urge you to make that shift. The basic reason is clear. In the long term, the investment-based system (or the mixed system) permits higher benefits for retirees at a lower cost to the working age population.

Many of you understand why an investment based Social Security system can do this. But for those who do not, let me explain the logic and give you a simple example.<sup>3</sup> (Although I will describe a pure investment based system, the same principle applies to a mixed system.)

The key feature of an investment based system is that it raises the nation's saving rate and therefore adds to the nation's stock of real capital – i.e., it adds to new business plant and equipment. This happens because individuals save and invest some of that saving in new company bonds and stocks. Even when their investments are in existing bonds and stocks, the purchase of those securities eventually leads to a demand for new bonds and stocks.

The additions to the private capital stock financed in this way add to national output, reflecting the productivity of additional capital. Economists refer to this additional output as the marginal product of capital. Most of this extra output goes to the owners of the stocks and bonds that finance the additional capital. In addition, the government collects a substantial amount in the form of taxes on corporate profits and as property taxes on the business plant and equipment itself.

---

<sup>3</sup>See, more generally, Martin Feldstein and Jeffrey Liebman, "Social Security," in Alan Auerbach and Martin Feldstein, Handbook of Public Economics, volume 4 (2002) Also as NBER Working Paper 8451 ([www.nber.org/papers/w8451](http://www.nber.org/papers/w8451))

To be more specific, in the United States over the past half century the real rate of return to investors in a balanced portfolio of stocks and bonds has been about 6.5 percent. In addition, the federal, state and local governments collect taxes equal to about 3.5 cents per year for every extra dollar of capital put in place. So all together the national real rate of return on incremental saving has been about 10 percent.<sup>4</sup>

This national rate of return on additional national saving is substantially higher than the implicit rate of return that individuals get in a pay-as-you-go system. By definition, a pay as you go system does not involve any significant addition to national investment. Retirees receive more in Social Security benefits than they paid in taxes during their working years because in a growing economy the taxes paid by younger cohorts are always rising. Each employed age cohort is more numerous and has higher average earnings than the cohort of retirees. But even in an economy in which the labor force grows at 2 percent a year and real wages rise at 3 percent a year, the implicit rate of return in the pay as you go system is only 5 percent or half of the national return in an investment based system

To see the implication of that difference in rates of return, consider a simple example of an individual who works from age 20 to 60 and retires from 60 to 80. With a 10 percent rate of return, the money saved and invested during those working years could obtain about four times as much in retiree benefits as the same “saving” that is collected in a pay-as-you-go system with an implicit return of 5 percent. Or to state that differently, a given level of retiree benefits that requires a 20 percent payroll tax in a pure pay-as-you-go system can be achieved in a pure investment based system with a saving rate of only about 5 percent.

The difference between the 5 percent saving rate in the investment-based system and the 20 percent payroll tax in the pay-as-you-go system is a pure tax of 15 percent on employees’ earnings. That is, a mandatory 5 percent saving rate is not really a tax – i.e., it does not make the individual worse off – because he or she gets these savings back in the form of retirement benefits. But if those same benefits have to be financed by a payroll tax of 20 percent, the extra 15 percent paid in taxes is a pure tax for which the individual gets nothing back.

There are three advantages of avoiding the pure tax in the pay as you go system.

First, and most directly, avoiding the pure tax leaves individuals with more spendable money during their working years, i.e. it leaves them better off. The difference is substantial. For someone who pays a 20 percent payroll tax and a 20 percent income tax, the shift to an investment based system is equivalent to a 25 percent rise in real spendable incomes

---

<sup>4</sup>See Martin Feldstein and Elena Rangelova, “Individual Risk in an Investment Based Social Security System,” American Economic Review, vol 91, no. 4, September 2001, pp 1116-1135. NBER Working Paper 8074 ([www.nber.org/papers/w8074](http://www.nber.org/papers/w8074))

Second, a lower tax rate reduces the distorting effect of the tax system. High marginal tax rates distort behavior in several ways that reduce real incomes, qazincluding reducing the incentive to work and to work at more remunerative occupations. Higher marginal tax rates also increase the incentive to seek nontaxable forms of compensation like fringe benefits that are not as valuable to the individual but are selected because of their favorable tax treatment.

And third, a lower tax rate reduces the incentive to shift from the formal taxed sector to the informal sector or underground economy. This informal sector puts employees into less productive jobs and reduces the amount of income and payroll taxes that the government collects.

As all of this makes clear, the difference between a pay as you go system and an investment based system is greater when the growth rates of wage incomes are lower. If the combined rise of the labor force and of wages per worker is only 3.5 percent per year, the investment based system with a 10 percent return produces 6 time as much in benefits or permits any given level of benefits to be financed with less than one-sixth the saving during working years.

The higher benefits or the lower tax rate that I have described is fully effective only after the transition ( from a pay-as-you-go system to an investment based system) is substantially complete. During the transition, the advantage of the investment based approach is smaller. And in the beginning of the transition process, the working generation has to consume less in order to start the accumulation process. But the initial reduction in consumption is relatively small and is outweighed by the present value of the higher long-term benefits of the investment based system .

Let me say a further word about how the transition should be managed. To the extent that it is possible, the cost of the transition should not be allowed to increase the marginal payroll tax rate. Collections based on payroll earnings should be limited as much as possible to the funds that will be deposited in personal retirement accounts. Since individuals should regard that as compulsory saving with no tax component, there are no adverse incentive effects. Individuals have less incentive to work in the informal sector if the tax system emphasizes value added or sales taxes rather than payroll taxes or income taxes.

### Investment Strategy and the Management of Risk

Let me now return to the question of the investment strategy and the management of risks in the investment based Social Security system.

The higher rate of return that is possible in the investment based system comes, as I already discussed, from the increase in the nation's capital stock. As a reasonable approximation, it doesn't matter if the funds are invested in equities or debt as long as there is a shift from consumption to investment in business plant and equipment.

What about investing the personal retirement accounts (PRAs) in government bonds? That depends critically on whether those bonds would otherwise have been sold to the public – crowding out private investment – or whether they are newly created bonds that represent increases in government spending. If the bonds would have been sold to the public even if the pay-as-you-go system had continued, then shifting that sale to the Social Security personal retirement accounts frees up other saving for real investment in business equipment and structures. But if the availability of new saving in the PRAs encourages the government to increase its spending and to finance the resulting deficit by selling bonds to the PRA investors, there is no net increase in national saving. Unless the government spending goes to increase capital spending on useful infrastructure like ports and roads and schools, there will be no gain from shifting to an investment based program

It is best therefore if the PRA funds are invested in private stocks and bonds. There may be a few years when investment of the PRA funds is restricted to government bonds to get individuals accustomed to the use of PRAs. But the shift to private stocks and bonds should proceed as rapidly as possible.

The prospect of Social Security investment in private stocks and bonds immediately raises the issue of how to deal with the risks in such accounts. Some economists have suggested that the solution is to have a single fund managed by the government which would then promise defined benefits to future retirees. If the fund performs poorly, future taxpayers would make up the difference. Many of us reject that proposal because we fear the consequences of allowing the government to manage a portfolio that over time would come to own a major fraction of the nation's corporate stock. There would inevitably be political pressure on the managers of the fund to avoid investments in some kinds of firms – for example, firms that make cigarettes or that create pollution or that send jobs abroad or that fight trade unions or that invest in certain foreign countries, to name just a few. And there would be pressures to invest in ways that aim to serve social ends but that produce lower investment returns – including such things as low income housing, businesses that invest in depressed areas, etc..

Most countries that have investment based Social Security programs have therefore come to the sensible conclusion that the portfolio investments should be in Personal Retirement Accounts controlled by individual employees and retirees.

This avoids the political problem of a government investment account but raises the important issue of how individuals can be protected from excessive investment risk.<sup>5</sup> One approach has been to put maximum limits on the fraction of the Personal Retirement Account portfolio that can be invested in equities. A second feature of all the investment based Social Security systems that I know is to require that the equity investments be in the form of broadly diversified mutual funds. Individuals are not allowed to invest in single

---

<sup>5</sup>On the general subject of investment risk in investment based Social Security, see John Campbell and Martin Feldstein, Risk Aspects of Investment Based Social Security Reform (Chicago: University of Chicago Press, 2001).

companies or single industries. Both of these features make good sense and do reduce the volatility and ultimate risk of the Personal Retirement Account investments.<sup>6</sup>

There is however a limit to what can be achieved by diversification of investment within the single national capital market. Even in a large economy like that of the United States, in which Personal Retirement Accounts can invest in broadly diversified index funds like the Standard and Poors 500 or the Russell 5000, substantial volatility remains. The recent experience in the United States is a reminder that the market as a whole can fall by one-third in just two years.

The problem is much more serious in smaller countries with more limited equity markets. The value of Brazilian equities has fallen 25 percent just in the past nine months. Measured in dollar terms, the fall was 44 percent. The decline was even greater in Argentina and Venezuela.

But the problem for equity investors is not just these dramatic declines during times of crisis or near crisis. In a relatively small economy with a limited number of publicly held companies, there is substantial year to year volatility that makes Personal Retirement Account assets more volatile than they would be in a larger economy with a more diversified array of available shares.

One approach to this problem of highly risky investment returns is to provide a government guarantee. The guarantee may specify that the government will make up the difference between the benefits provided by the PRA accounts and some minimum amount stated in the Social Security law.

Such government guarantees protect the retirees by shifting the risk to future taxpayers. I have studied the nature of that risk-shifting for the United States investments and concluded that the potential burden placed on future taxpayers is not excessive.<sup>7</sup> Even if the equity markets perform quite poorly, the taxpayers and retirees will almost always be better off than they would be in a pay as you go system. The taxes required in a pay as you go system to support a desired level of benefits will almost certainly exceed the combination of PRA contributions and taxpayer guarantee payments in such an investment based program.

In a country with a sufficiently developed financial market it would be possible to provide a guarantee to future retirees without placing any burden on future taxpayers. The key would be to supplement the personal retirement account with a type of portfolio insurance policy that guarantees a

---

<sup>6</sup>See John Shoven, Administrative Cost Aspects of Social Security Reform, (Chicago: University of Chicago Press, 2000).

<sup>7</sup>See Martin Feldstein, Elena Rangelova and Andrew Samwick, "The Transition to Investment Based Social Security when Portfolio Returns and Capital Profitability are Uncertain," in John Campbell and Martin Feldstein, Risk Aspects of Social Security Reform (Chicago: University of Chicago Press, 2000) NBER Working Paper 7016 ([www.nber.org/papers/w7016](http://www.nber.org/papers/w7016))

certain minimum rate of return or a certain minimum annuity payment. In the United States, such a guarantee could be purchased from the financial markets. In the language of finance, the PRA portfolio would be protected by a “put” option that guarantees a minimum rate of return or minimum annuity level. Individuals could pay for this put option by giving up some portion of the potential for very high returns on their investments, that is, by selling a “call” option. This combination of buying a put and financing that purchase by selling a call is known in the financial markets as a “collar” because it places a collar on the rate of return – both down and up – that can be earned.<sup>8</sup>

Of course, no one would expect the individual employees to venture into the realm of high finance to make these complex put and call investments. But a government Social Security program could require that those who sell equity mutual funds to Personal Retirement Accounts must offer a product that guarantees a certain minimum rate of return or a certain minimum annuity payment. The government rule could specify that the means of paying for this guarantee would be a limit on the maximum return (i.e., a collar) or could leave it to the provider of the PRA mutual fund to decide how the guarantee should be financed. Individuals might prefer to give up a portion of their annual return and retain some of the potential for very high returns. Or they might prefer to give up a fraction of the potentially high returns rather than imposing an overall maximum. One of the advantages of using the private market is that it could offer a variety of alternatives and allow individuals to select the alternative that reflects their preferences for risk and return.

I have of course been describing something that would be relatively easy to do in the United States but could be substantially harder or impossible to do in many Latin American countries. Moreover, as I emphasized a moment ago, the need for risk mitigation is greater here in Latin American than in the United States because the domestic equity markets are so much more volatile.

### Futures Based Diversification

How then can individuals in countries like Mexico, Chile and Columbia enjoy the high expected returns on equities in Personal Retirement Accounts without exposing themselves to excessive risk?

One possibility that I do not advocate would be for the Personal Retirement Accounts to be invested in a U.S. index fund like the S&P 500 or in a global index fund like the EAFE index. I do not advocate such a foreign investment strategy – and no country with an investment based Social Security program has adopted such a strategy. Its advantage is clear. It would provide a high equity rate of return, lower volatility, and an opportunity to use sophisticated risk reduction techniques of the type that I described a moment ago. But it would also mean that the extra saving generated by the investment based

---

<sup>8</sup>See Martin Feldstein and Elena Rangelova, “Accumulated Pension Collars: A Market Approach to Reducing the Risk of Investment-Based Social Security Reform,” Tax Policy and the Economy 2000 NBER Working Paper 7861 ([www.nber.org/papers/w7861](http://www.nber.org/papers/w7861))

Social Security program would leave the country and be invested abroad.

I say this even though I am fully aware that standard economic theory says that the global capital markets direct funds to investments in countries where risk adjusted investment returns are highest. Consider the case of Mexico. If Mexico succeeds in raising that national saving rate substantially by its investment based Social Security program, the standard theory says that most of that extra saving would just go abroad. Even if the government restricts the PRA funds to be invested in local stocks and bonds, this will just reduce the returns on investments in Mexico and cause other portfolio investors – both Mexican and foreign – to shift their investments abroad.

That is the textbook theory but it does not fit the facts.<sup>9</sup> The basic fact that we observe around the world is that savings tend to stay in the country where they originate. Countries with higher saving rates have higher rates of domestic investment in equipment and structures. While we observe substantial gross capital flows, in the end there is very little net flow. It is rare to see a country with a sustained capital inflow or outflow that exceeds about four percent of its GDP. So if Mexico – or any other country – raises its saving rate as a result of its investment based Social Security system, that extra saving will largely remain in the country.

Why is that important? After all, the money that leaves the country to be invested elsewhere does produce a return that flows back to Mexico in the form of dividends and capital gains. But the return to Mexico is diminished by the corporate taxes collected in the countries where those funds are invested. Thus a dollar invested in the United States generates about 10 cents a year in gross profits but the U.S. government keeps about a third of this in taxes. So the return to Mexico is higher if the capital remains in Mexico.

There is, however, an alternative strategy that provides the advantage of investing abroad without the disadvantage of losing the increased amount of domestic capital. Let me describe how this would work in Mexico as an example of what could be done in any of the countries represented here today.

The mutual funds that are used in the Mexican Personal Retirement Accounts could invest in Mexican corporate bonds and also buy “futures” on a global index fund or a US index fund like the S&P500 or the Russell 5000. In this way, the Mexican Personal Retirement Account would obtain the return on U.S. or global equities without any transfer of real capital from Mexico to the rest of the world. Buying a future on the US stock index like the S&P500 is equivalent to borrowing dollars in New York and investing those dollars in the US stock market. The Mexican investor who does this gets the return and

---

<sup>9</sup>See Martin Feldstein and Charles Horioka, “Domestic Saving and International Capital Flows,” *Economic Journal*, June 1980, pp 314-329, and Martin Feldstein, “Tax Policy and International Capital Flows,” *Weltwirtschaftliches Archiv*, 1994 pp 675-97 (www.nber.org/papers/4851)



the risk associated with the US stock market without shifting any capital out of Mexico. Moreover, it would be possible to reduce the risk on this investment by the type of “collar” that I described earlier, thus taking full advantage of the financial engineering opportunities available in the US capital market.

I am of course not suggesting that individual Mexican investors actually buy futures contracts on American stocks. Rather it would be for the Mexican government to authorize (or require) the mutual funds that are used in Personal Retirement Accounts to create a product that consists of Mexican corporate bonds combined with U.S. or global equity futures. I suspect that if such a product were available it would be perceived correctly as equivalent for the individual to an investment in US equities and it would be a popular option. Providing some supplementary risk protection through private market puts and calls would make it even more popular.

I think this idea of a futures strategy for diversifying equity investments without losing domestic capital deserves serious consideration in all of the countries of Latin America. I am grateful to you for giving me this opportunity to describe this strategy to you today. And now I look forward to your questions.

Cambridge MA  
October 2002