

# MRRC RESEARCHER

*Kent Smetters and Shinichi Nishiyama  
discuss their MRRC-supported research*

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**Q:** How would you describe your MRRC-supported work?

**A:** All of my MRRC-sponsored research has focused in one way or another on reform of Social Security. Previously, Jan Walliser and I proposed and examined the impact of the transition to a fully funded system. More recently, Shinichi Nishiyama and I have focused our attention on potential efficiency gains and losses associated with personal Social Security accounts.

Most reform options being considered involve having winners and losers. When policy makers debate different reform scenarios, it is important for them to have information on who wins and who loses. The best possible reform would be something economists call Pareto improving, where the reform improves things for some without making anyone else worse off. More realistically there will be losers, but we want to minimize that if possible. Another way we think about this is to ask: how much money is left over after we've compensated all those people who have been harmed by the policy change? In our earlier work we developed a model that would allow us to examine this question. Our recent project sponsored by the MRRC uses this model.

**Q:** How does your research differ from previous literature in this area?

**A:** Two major sources of uncertainty we all face are about our lifetime wages and how long we're going to live. We'd all like to be able to buy some type of insurance against these two types of shocks. Of course, we can buy life insurance, but it's very hard to buy insurance against wage shocks because of what we call adverse selection or the moral hazard problem—in this case the risk that people would buy this type of insurance and then intentionally lose their jobs in order to collect the insurance. So there really isn't a market for wage insurance.

Most previous models – although there are a couple of exceptions -- have implicitly assumed that these markets do exist by assuming that wages could be perfectly predicted. Using these simplistic models, researchers were able to show very large gains from Social Security reform. Over time, improved computing technology has allowed us and others to create models that are computationally more complex. And now we can ask, with a more realistic model that includes uninsurable wage shocks, how do the results change? And the answer is that they change quite a bit. In fact, we now show that there could be efficiency losses from partial Social Security privatization unless the privatization is designed correctly. Our model is, I believe, the first to rigorously compute efficiency changes inside of a more realistic environment by incorporating a technique first used by Alan Auerbach and Laurence Kotlikoff into this more advanced model.

Interestingly, efficiency losses are possible despite the fact that privatization does produce gains in capital stock and GDP both over the long run as well as over the short run. The old models also found

more saving because as you replace a pay-as-you-go system with private accounts, naturally there is more saving. That's still going on in our new model, but there's another reason we see more saving. Under privatization there is a reduction in the insurance that is being provided by the Social Security Administration after privatization. This encourages households to engage in additional precautionary savings. Also, as money accumulates in these accounts, the interest rate drops because capital is less scarce.

**Q:** Were your results unexpected?

**A:** We tested these results in a number of different ways. In our baseline model, we assumed that the U.S. was a closed economy—that there was no relationship of our economy to other nation's economies. When we allow the economy to be open, some of the extra capital that accumulates under privatization can go abroad, and interest rates do not fall. In this context we show that the efficiency losses under private accounts get even bigger. This is a bit of a surprise, but here's the explanation.

As I said before, under privatization in the short run you have some losers and in the long run you have some winners. In the short run you have to have some additional debt in order to compensate the losers. You pay for the debt with some of the gains from the winners in the long run. If you have a low interest rate, that allows you to borrow the money at a cheaper rate and allows you to make this transfer between generations more easily. In the open economy, interest rates do not fall, and the cost of this intergenerational transfer is greater. Therefore, the efficiency loss to privatization is magnified.

In the baseline model, we also assumed that there were no private annuity markets—that people could not buy the type of insurance that traditional Social Security provides. An even bigger surprise in our work is that we find that privatization actually performs worse in a model that does have private annuity markets. The reason is that if the annuity market does not exist, then people are kind of stuck and they have to increase their precautionary savings, which depresses interest rates. The reduction in rates is good for efficiency reasons. When there are private annuity markets, there is less precautionary savings, which keeps interest rates high, and, hence, raises the cost of the intergenerational transfer I just mentioned.

The current system provides risk sharing because Social Security benefits are progressive. In our model, we are also able to examine various options for including some risk-sharing with private accounts. One way is for the government to subsidize the contributions made by poorer households through matching. It turns out that's not very effective. The problem is this has to be phased out at some income level. The phase out range creates implicit marginal tax rates, which means that it discourages you from working more because as your income increases you lose some benefits. We try a model in which there is no phase out and we match the contributions even of Bill Gates. The cost of this is prohibitive, though, and it creates distortions because the government has to raise that money.

The alternative approach is to make the part of the system that remains unchanged (under a system of partial privatization) more progressive. That turns out to be very effective and the reason is there's no real implicit marginal tax rate since redistribution is based on lifetime wages and not current wages. In fact, if the remaining Social Security system is made sufficiently progressive then we can even produce efficiency gains from partial privatization. Interestingly, this approach is similar in spirit to the President's proposal, although we have not computed his exact plan.

**Q:** Where are you headed next with this research?

**A:** In our previous work, we made two simplifications. The first is that we assumed that there's no

correlation between mortality and income. But, in reality, we know that richer people live longer. Our new model will incorporate this relationship. There's some controversy in the literature as to how progressive Social Security really is because richer people are compensated less but they live longer. So we'll now get this in there.

The second issue is that the model has up to now assumed that there is no human capital investment. People arrive in our model already endowed with all their human capital, all the investments their parents made in them. We will explicitly model that because Social Security could have a positive or negative effect on the accumulation of human capital. On the one hand, if Social Security gives you a worse deal as you get richer, that could discourage your investment in the types of human capital that would make you richer, like education. On the other hand, you never really know when you make an investment in something like schooling if it's going to pay off in terms of wealth. So the risk sharing aspect of Social Security (that actually provides a kind of wage insurance) could encourage or discourage human capital investment.

Sources:

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