

## **Comment on “Asset Returns and Economic Growth” by Baker, DeLong, and Krugman**

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This paper is really three papers in one. The first paper is a roundabout and not completely persuasive discussion of what return we should expect for the stock market, given current measures of valuation. The second paper is a straightforward review of how population growth affects the return to capital in standard models of economic growth. The third paper is a model of the equity premium that can be viewed as creative, bizarre, or vacuous, depending on your point of view.

What links the three papers—beyond their common title page—is their motivation. President Bush has recently called for reform of the Social Security system. According to the Social Security actuaries, the system faces large unfunded liabilities. That conclusion, however, is based on a projection that includes much slower labor force growth (and thus economic growth) than the United States has experienced historically. This raises the question of what rate-of-return projections should be assumed as the nation considers possible reforms.

In my comments I will discuss each of the three papers in turn, before addressing the policy motivation.

### **Stock Market Valuation**

The first paper in this paper discusses the expected return on the stock market using the famous Gordon formula, according to which the expected return on a share of stock equals the current dividend yield plus the projected growth rate of dividends per share.

Although the Gordon formula has a long and venerable tradition, I don't think it's provides a particularly edifying approach here. For a neoclassical economist, the starting point for thinking about the role of dividends in stock valuation is the classic Modigliani-Miller theorems, which tell us that the dividend payout is irrelevant to the value of the firm. It seems unnatural at best to start an analysis of stock valuation focusing on the level and growth of a variable that, to a first approximation, does not matter.

If the dividend yield is approximately irrelevant, as Modigliani and Miller tell us, then it is easy to imagine that it could undergo a major change in the years to come. Looking ahead, it seems plausible to me that dividend payouts broadly construed could rise significantly. If we are about to experience a period of slower economic growth because of demographic change, then firms might well have fewer profitable investment opportunities and, as a result, may decide to pay out a larger percentage of their earnings. There are several ways this could occur. One possibility is normal dividends. Another is through corporate reorganizations. Corporate managers might find cash takeovers and acquisitions more profitable than internal expansion. Cash purchases of other businesses take money out the corporate sector and are, in essence, a form of share repurchases. They are one way to increase dividends, broadly construed.

The authors entertain the possibility we could experience a substantial rise in dividend payouts, but they are skeptical. Their argument boils down to the observation that the current earnings yield is 5.23 percent, which limits how large an increase in the dividend yield they view as plausible.

It would have saved the reader a lot of time if they had started with this argument rather than ending with it. Modigliani and Miller tell us that earnings, unlike dividends, are relevant for a firm's valuation. Earnings may be imperfectly measured, but at least they matter. So, in the end, we can summarize the authors' argument very simply: The earnings yield is now about a percentage point lower than the historical average, so they expect future stock returns to be lower than historical averages as well. I give some weight to this piece of evidence, but I don't think the Gordon model teaches us anything more than that.

### **Open-economy Stock Valuation**

In a later section of the paper, after taking a detour into growth theory, the authors return to the Gordon model to consider one open-economy issue. Is it possible, they ask, for the growth in dividends to significantly exceed growth in the domestic economy because corporations are investing and earning profits abroad? They suggest that this possibility is unlikely because (they claim) it would require current account surpluses so large as to be historically anomalous.

I must confess that I just do not follow the logic here. Suppose that General Electric, seeing fewer profitable investments in the United States, uses some of its earnings to buy a factory in China. That represents a capital outflow from the United States and a current account surplus, which I think is what the authors have in mind.

But before I am convinced, I want to see the entire equilibrium spelled out. What does the Chinese factory owner, who now has dollars from the GE deal, do with them? One possibility is that he buys U.S. produced goods, which seems to be the case the authors are implicitly assuming. Another possibility is that he buys U.S. assets. Perhaps he even buys stock in General Electric. Perhaps he is just given GE stock as part of the transaction.

Here is one scenario that seems plausible to me. With the rest of the world, such as China and India, growing so rapidly, U.S. companies will increasingly find profitable opportunities abroad. At the same time, foreigners will increasingly invest in U.S. companies, which will be among the driving forces behind global growth. Under this scenario, an increasing share of the earnings of U.S. corporations could come from abroad, without any obvious implications for the U.S. current account.

### **Population and Growth Theory**

Let me turn now to the second paper in this paper. Here the authors review several standard neoclassical growth models. Their aim is to see what these models predict for the relationship between population growth and the rate of return to capital.

The Solow growth model gives a clear answer to this question: Lower population growth lowers the rate of return. Because the saving rate is exogenously fixed, lower population growth raises the steady-state capital-labor ratio, which in turn means a lower marginal product of capital. The Diamond model gives a similar answer, at least for the functional forms assumed here.

The Ramsey model, however, leads to a very different conclusion. In that model, the saving rate adjusts so that the rate of return is invariant to the population growth rate. Realizing that this model does not support the main contention of the paper, the authors propose a generalization of the model in which the discount rate for future utility depends on the population growth rate. But even this model gives smaller rate-of-return effects than the Solow model, presumably because a world with a more slowly growing population saves less for the future.

I should note that this conclusion is complementary with the analysis presented in a 1990 Brookings paper called “An Aging Society: Opportunity or Challenge?” written by David Cutler, James Poterba, Louise Sheiner, and Lawrence Summers. Cutler et al. use a standard Ramsey model to argue that “the optimal policy response to recent and anticipated demographic changes is almost certainly a reduction rather than an increase in the national saving rate.” I should note that national saving is currently low by historical standards, but I will not suggest that this low level of national saving is the “optimal policy response” that Cutler et al. was proposing.

In the end, I think it is clear that the tools of modern growth theory lead to an ambiguous answer about how population growth affects the return to capital. You can write down textbook models in which the two variables move together (the Solow model), and you can write down models in which they do not (the Ramsey model). The natural response to this theoretical ambiguity is to muster evidence, either from time-series data or from the international cross-section, about the actual effect of population growth. This paper, however, presents no evidence one way or the other. Perhaps that is a subject for a future Brookings paper.

### **The Equity Premium**

Let me turn now to the last paper in this paper, which concerns the equity premium. Here the authors give us a model that is, in some way, the strangest contribution to the equity premium literature I have seen. Most analysis of the equity premium begins with the premise that it has something to do with the tradeoff between risk and return. Not so, in this model. Here, the household sector decides exogenously what fraction of wealth to put in equities, and the corporate sector decides exogenously what fraction of the capital return to pay out to equity holders. From these two exogenously determined shares, the equity premium emerges.

The model reminds me of John Kenneth Galbraith’s view of the world. Households are not sufficiently intelligent to make portfolio decisions based on risk and return. Corporate managers are sufficiently immune to market forces that they divide up the economic pie however they see fit. If I took this model seriously, it would do more than inform my view of the equity premium. It would shake my faith in corporate capitalism!

But there is a less dramatic way to view this part of the paper. Perhaps the equations presented here should be viewed less as behavioral descriptions and more as accounting identities. If this interpretation is right, then I am at a loss about what purpose these equations serve. They do not seem readily adapted to calibration to gauge how the equity premium has changed over time. I am comfortable with the authors’ suggestion that the equity premium may be smaller in the future than it has been in the past because

institutional changes have made spreading risk more efficient. But this model does not shed much new light on this observation.

### **Implications for Social Security Reform**

In closing, let me say a few words about social security reform. Judging from my reading of Krugman's column and DeLong's blog, I am confident that the authors of this paper were drawn to this set of topics because they think it is central to the debate over the President's reform proposals. I disagree.

There are two elements of the President's proposal for Social Security reform. First, the President wants to eliminate the system's unfunded liabilities by bringing promised benefits into line with the dedicated payroll tax revenues. Various ideas for doing this have been put on the table, such as raising the retirement age and changing indexation rules. Second, the President wants to give workers the voluntary option of converting some of their defined-benefit retirement income from Social Security into a defined contribution, which would be placed in a personal account and invested in a broadly diversified portfolio of stocks and bonds.

Reasonable people can disagree about the merit of these proposals. I made the case for the President's proposals as I see it in a recent article in the *New Republic* (March 21, 2005). The case for reforming benefits is that the government should not promise more than it has the wherewithal to pay. The case for moving Social Security from a defined benefit to a defined contribution structure is that it gives individuals more choice and control over their retirement income and the government greater transparency in its finances.

These arguments are not based on any particular estimate of the average return to capital or of the equity premium. I don't think the key issue in the debate over Social Security is whether, over the next century, the risk-free return will be 1 or 3 percent, or whether the equity premium will be 3 or 5 percent. So even if I agreed with the arguments raised in this paper and lowered my estimates of rates of return, it would not change my mind about the need to reform Social Security or the kinds of reforms that are desirable.

I would guess that, in their hearts, the authors of this paper agree with me about this. To see if I am right, I would like them to answer the following question: Suppose that next week, the stock market falls by 50 percent, so dividend and earnings yields double. Would Baker, DeLong, and Krugman suddenly be in favor of President Bush's proposal for Social Security reform? I suspect they would not. If I am right, this suggests that while the paper raises some interesting questions about the future of assets returns, as far as the debate over Social Security goes, it is largely a non sequitur.