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On the Proper Size of the Public Sector and the Level of Public Debt in the Twenty-First Century

J. Bradford DeLong

Olivier Blanchard, when he parachuted me into the panel, asked me to "be provocative."

So let me provoke:

My assigned focus on "fiscal policy in the medium term" has implications. It requires me to assume that things are or will be true that are not now or may not be true in the future, at least not for the rest of this decade and into the next. It makes sense to distinguish the medium from the short term only if the North Atlantic economies will relatively soon enter a regime in which the economy is not at the zero lower bound on safe nominal interest rates. The medium term is at a horizon at which monetary policy can adequately handle all of the demand-stabilization role.

The focus on a medium run thus assumes that answers have been found and policies implemented for three of the most important macroeconomic questions facing us right now, here in the short run, today. Those three are:

- What role does fiscal policy have to play as a cyclical stabilization policy?
- What is the proper level of the inflation target so that open-market operation-driven normal monetary policy has sufficient purchase?
- Should truly extraordinary measures that could be classified as "social credit" policies—mixed monetary and fiscal expansion via direct assignment of seigniorage to households, money-financed government purchases, central bank–undertaken large-scale public lending programs, and other such—be on the table?

Those three are still the most urgent questions facing us today. But I will drop them, and leave them to others. I will presume that satisfactory

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answers have been found to them, and that they have thus been answered.

As I see it, there are three major medium-run questions that then remain, even further confining my scope to the North Atlantic alone, and to the major sovereigns of the North Atlantic. (Extending the focus to emerging markets, to the links between the North Atlantic and the rest of the world, and to Japan would raise additional important questions, which I would also drop on the floor.) These three remaining medium-run questions are:

- What is the proper size of the twenty-first-century public sector?
- What is the proper level of the twenty-first-century public debt for growth and prosperity?
- What are the systemic risks caused by government debt, and what adjustment to the proper level of twenty-first-century public debt is advisable because of systemic risk considerations?

To me, at least, the answer to the first question—what is the proper size of the twenty-first-century public sector?—appears very clear.

The optimal size of the twenty-first-century public sector will be significantly larger than the optimal size of the twentieth-century public sector. Changes in technology and social organization are moving us away from a "Smithian" economy, one in which the presumption is that the free market or the Pigovian-adjusted market does well, to one that requires more economic activity to be regulated by differently tuned social and economic arrangements (see DeLong and Froomkin 2000). One such is the government. Thus, there should be more public sector and less private sector in the twenty-first century than there was in the twentieth.

Similarly, the answer to the second question appears clear, to me at least.

The proper level of the twenty-first-century public debt should be significantly higher than typical debt levels we have seen in the twentieth century. Looking back at economic history reveals that it has been generations since the intertemporal budget constraint tightly bound peacetime or victorious reserve-currency-issuing sovereigns possessing exorbitant privilege (see DeLong 2014; Kogan et al. 2015).

Thus, at the margin, additional government debt has not required a greater primary surplus but rather has allowed a greater primary

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deficit—a consideration that strongly militates for higher debt levels *unless interest rates in the twenty-first century reverse the pattern we have seen in the twentieth century, and mount to levels greater than economic growth rates*.

This consideration is strengthened by observing that the North Atlantic economies have now moved into a regime in which the opposite has taken place. Real interest rates on government debt are not higher but even lower relative to growth rates than they were in the past century. Financial market participants now appear to expect this now ultra-low interest rate regime to continue indefinitely (see Summers 2014).

The answer to the third question—what are the systemic risks caused by government debt?—is much more murky.

To be clear: the point is not that additional government debt imposes an undue burden in the form of distortionary taxation and inequitable income distribution on the future. When current and projected interest rates are low, they do not do so. The point is not that additional government debt crowds out productive investment and slows growth. When interest rates are unresponsive or minimally responsive to deficits, they do not do so. Were either of those to fail to hold, we would have exited the current regime of ultra-low interest rates, and the answer to the second question immediately above would become different.

The question, instead, is this: in a world of low current and projected future interest rates—and thus also one in which interest rates are not responsive to deficits—without much expected crowding out or expected burdens on the future, what happens in the lower tail, and how should that lower tail move policies away from those optimal on certainty equivalence? And that question has four subquestions: How much more likely does higher debt make it that interest rates will spike in the absence of fundamental reasons? How much would they spike? What would government policy be in response to such a spike? And what would be the effect on the economy?

The answer thus hinges on:

- the risk of a large sudden upward shift in the willingness to hold government debt, even absent substantial fundamental news, and
- the ability of governments to deal with such a risk that threatens to push economies far enough up the Laffer curve to turn a sustainable into an unsustainable debt.

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I believe the risk in such a panicked flight from an otherwise sustainable debt is small. I hold, along with Reinhart and Rogoff (2013), that the government's legal tools to finance its debt through financial repression are very powerful. Thus I think this consideration has little weight. I believe that little adjustment to one's view of the proper level of twenty-first-century public debt of *reserve-currency-issuing sovereigns with exorbitant privilege* is called for because of systemic risk considerations.

But my belief here is fragile. And my comprehension of the issues is inadequate.

Let me expand on these three answers.

The Proper Size of Twenty-First-Century Government

Suppose commodities produced and distributed are properly rival and excludible:

- Access to them needs to be cheaply and easily controlled.
- They need to be scarce.
- They need to be produced under roughly constant-returns-to-scale conditions.

Suppose, further, that information about what is being bought and sold is equally present on both sides of the marketplace—that is, limited adverse selection and moral hazard.

Suppose, last, that the distribution of wealth is such as to accord fairly with utility and desert.

If all these hold, then the competitive Smithian market has its standard powerful advantages. And so the role of the public sector should then be confined to:

1. antitrust policy, to reduce market power and microeconomic price and contract stickinesses,
2. demand-stabilization policy, to offset the macroeconomic damage caused by macroeconomic price and contract stickinesses,
3. financial regulation, to try to neutralize the effect on asset prices of the correlation of current wealth with biases toward optimism or pessimism, along with

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4. largely fruitless public-sector attempts to deal with other behavioral economics-psychological market failures—envy, spite, myopia, salience, etc.

The problem, however, is that as we move into the twenty-first century, the commodities we will be producing are becoming:

- less rival,
- less excludible,
- more subject to adverse selection and moral hazard, and
- more subject to myopia and other behavioral-psychological market failures.

The twenty-first century sees more knowledge to be learned, and thus a greater role for education. If there is a single sector in which behavioral economics and adverse selection have major roles to play, it is education. Deciding to fund education through very long-term loan financing, and thus to leave the cost-benefit investment calculations to be undertaken by adolescents, shows every sign of having been a disaster when it has been tried (see Goldin and Katz 2009).

The twenty-first century will see longer life expectancy, and thus a greater role for pensions. Yet here in the United States the privatization of pensions via 401(k)s has been, in my assessment, an equally great disaster (Munnell 2015).

The twenty-first century will see health care spending as a share of total income cross 25 percent if not 33 percent, or even higher. The skewed distribution across potential patients of health care expenditures, the vulnerability of health insurance markets to adverse selection and moral hazard, and simple arithmetic mandate either that social insurance will have to cover a greater share of health care costs or that enormous utilitarian benefits from health care will be left on the sidewalk.

Moreover, the twenty-first century will see information goods a much larger part of the total pie than in the twentieth. And if we know one thing, it is that it is not efficient to try to provide information goods by means of a competitive market for they are neither rival nor excludible. It makes no microeconomic sense at all for services like those provided by Google to be funded and incentivized by how much money can be raised not fromthe value of the services but fromthe fumes rising from

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Google's ability to sell the eyeballs of the users to advertisers as an intermediate good.

And then there are the standard public goods, like infrastructure and basic research.

Enough said.

The only major category of potential government spending that both should not—and to an important degree cannot—be provided by a competitive price-taking market, and that *might* be a smaller share of total income in the twenty-first century than it was in the twentieth? Defense.

We thus face a pronounced secular shift away from commodities that have the characteristics—rivalry, excludability, and enough repetition in purchasing and value of reputation to limit myopia—needed for the Smithian market to function well as a societal coordinating mechanism. This raises enormous problems: We know that as bad as market failures can be, government failures can often be little if any less immense.

We will badly need to develop new effective institutional forms for the twenty-first century.

But, meanwhile, it is clear that the increasing salience of these market failures has powerful implications for the relative sizes of the private market and the public administrative spheres in the twenty-first century. The decreasing salience of "Smithian" commodities in the twenty-first century means that rational governance would expect the private-market sphere to shrink relative to the public. This is very elementary micro- and behavioral economics. And we need to think hard about what its implications for public finance are.

The Proper Size of the Twenty-First-Century Public Debt

Back in the Clinton administration—back when the US government's debt really did look like it was on an unsustainable course—we noted that the correlation between shocks to US interest rates and the value of the dollar appeared to be shifting from positive to zero, and we were scared that the United States was alarmingly close to its debt capacity and needed major, radical policy changes to reduce the deficit (see Blinder and Yellen 2000).

Whether we were starting at shadows then, or whether we were right then and the world has changed since, or whether the current world is in

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an unstable configuration and we will return to normal within a decade is unclear to me.

But right now, financial markets are telling us very strange things about the debt capacity of reserve-currency-issuing sovereigns.

Since 2005, the interest rate on US ten-year Treasury bonds has fallen from roughly the growth rate of nominal GDP—5 percent/year—to 250 basis points below the growth rate of nominal GDP. Because the duration of the debt is short, the average interest rate on Treasury securities has gone from 100 basis points below the economy's trend growth rate to nearly 350 basis points below. Maybe you can convince yourself that the market expects the ten-year rate over the next generation to average 50 basis points higher than it is now. Maybe.

Taking a longer run view, Richard Kogan and co-workers (2015) of the Center on Budget and Policy Priorities have been cleaning the data from the Office of Management and Budget. Over the past two hundred years, for the United States, the government's borrowing rate has averaged 100 basis points lower than the economy's growth rate. Over the past one hundred years, 170 basis points lower. Over the past fifty years, 30 basis points lower. Over the past twenty years, the Treasury's borrowing rate

Figure 20.1
Ten-year Constant Maturity U.S. Treasury Nominal Rate.*Source*: *Federal Reserve Economic Data,* Federal Reserve Bank of St. Louis.

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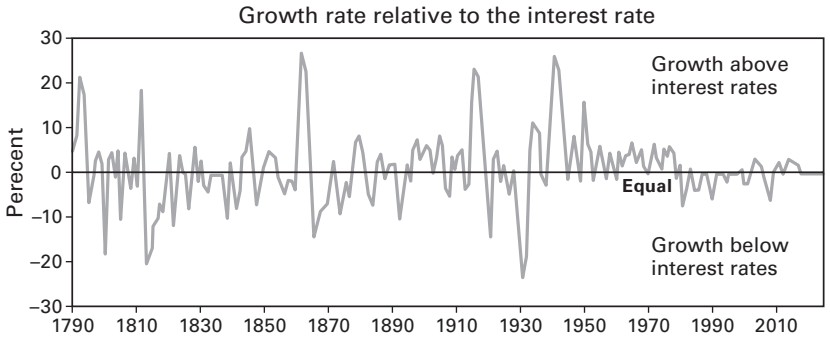

Figure 20.2
Economic Growth and Interest Rates Have Become More Closely Aligned.*Source*: Center on Budget and Policy Priorities, CBPP.org.

has been on average greater than g by 20 basis points. And over the past ten years, it has been 70 basis points lower.

When we examine the public finance history of major North Atlantic industrial powers, we find that the last time that the average over any decade of government debt service as a percentage of outstanding principal was higher than the average growth rate of its economy was during the Great Depression. And before that, in1890.

Since then, over any extended time period for the major North Atlantic reserve-currency-issuing economies, $g > r$, for government debt.

Only those who see a very large and I believe exaggerated chance of global thermonuclear war or environmental collapse see the North Atlantic economies as dynamically inefficient from the standpoint of our past investments in private physical, knowledge, and organizational capital: $r > g$ by a very comfortable margin. Investments in wealth in the form of private capital are, comfortably, a cash flow source for savers.

But the fact that $g > r$ with respect to the investments we have made in our governments raises deep and troubling questions. Since 1890, a North Atlantic government that borrows more at the margin benefits its current citizens, increases economic growth, and increases the well-being of its bondholders (for they do buy the paper voluntarily): it is win-win-win.

That fact strongly suggests that North Atlantic economies throughout the entire twentieth century suffered from excessive accumulation of societal wealth in the form of net government capital—in other words, government debt has been too low.

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The North Atlantic economies of major sovereigns throughout the entire twentieth century have thus suffered from a peculiar and particular form of dynamic inefficiency. Over the past one hundred years, in the United States, at the margin, each extra stock 10 percent of annual GDP's worth of debt has provided a flow of 0.1 percent of GDP of services to taxpayers, either in increased primary expenditures, reduced taxes, or both.

What is the elementary macroeconomics of dynamic inefficiency? If a class of investment—in this case, investment by taxpayers in the form of wealth held by the government through amortizing the debt—is dynamically inefficient, do less of it. Do less of it until you get to the Golden Rule, and do even less if you are impatient. How do taxpayers move away from dynamic inefficiency toward the Golden Rule? By not amortizing the debt, but rather by borrowing more.

Now we resist this logic. I resist this logic.

Debt secured by government-held social wealth ought to be a close substitute in investors' portfolios with debt secured by private capital formation. So it is difficult to understand how economies can be dynamically efficient with respect to private capital and yet "dynamically inefficient" with respect to government-held societal wealth. But it appears to be the case that it is so.

But there is this outsized risk premium, outsized equity and low-quality debt premium, outsized wedge. And that means that while investments in wealth in the form of private capital are a dynamically efficient cash flow source for savers, investments by taxpayers in the form of paying down debt are a cash flow sink.

I tend to say that we have a huge underlying market failure here that we see in the form of the equity return premium—a failure of financial markets to mobilize society's risk-bearing capacity—and that pushes down the value of risky investments and pushes up the value of assets perceived as safe, in this case the debt of sovereigns possessing exorbitant privilege. But how do we fix this risk-bearing capacity mobilization market failure? And isn't the point of the market economy to make things that are valuable? And isn't the debt of reserve-currency-issuing sovereigns an extraordinarily valuable thing that is very cheap to make? So shouldn't we be making more of it? Looking out the yield curve, such government debt looks to be incredibly valuable for the next half century, at least.

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These considerations militate strongly for higher public debts in the twenty-first century then we saw in the twentieth century. Investors want to hold more government debt: the extraordinary prices at which it has sold since 1890 tell us that. Market economies are supposed to be in the business of producing things that households want whenever that can be done cheaply. Government debt fits the bill, especially now. And looking out the yield curve, government debt looks to fit the bill for the next half century at least.

Systemic Risks and Public Debt Accumulation:

One very important question remains very live: Would levels of government debt issue large enough to drive $r > g$ for government bonds create significant systemic risks? Yes, the prices of the government debt of major North Atlantic industrial economies are very high now. But what if there is a sudden downward shock to the willingness of investors to hold this debt? What if the next generation born and coming to the market is much more impatient? Governments might then have to roll over their debt on terms that require high debt-amortization taxes, and if the debt is high enough, those taxes could push economies far enough up a debt Laffer curve. That might render the debt unsustainable in the aftermath of such a preference shift.

Two considerations make me think that this is a relatively small danger.

First, when I look back in history, I cannot see any such strong fundamental news-free negative preference shock to the willingness to hold the government debt of the North Atlantic's major industrial powers since the advent of parliamentary government. The fiscal crises we see—of the Weimar Republic, Louis XIV Bourbon, Charles II Stuart, Felipe IV Habsburg, and so forth—were all driven by fundamental news.

Second, as Reinhart and Rogoff (2013) have pointed out at substantial length, twentieth- and nineteenth-century North Atlantic governments proved able to tax their financial sectors through financial repression with great ease. The amount of real wealth for debt amortization raised by financial repression scales roughly with the value of outstanding government debt. And such taxes are painful for those taxed. But only when even semi-major industrial countries have allowed large-scale borrowing in potentially harder currencies than their own—and thus have written

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unhedged puts on their currencies in large volume—is there any substantial likelihood of major additional difficulty or disruption.

Now, Kenneth Rogoff (2015) disagrees with drawing this lesson from Reinhart and Rogoff (2013). And one always disagrees analytically with Kenneth Rogoff at one's great intellectual peril. He sees the profoundly depressed level of interest rates on the debt of major North Atlantic sovereigns as a temporary and disequilibrium phenomenon that will soon be rectified. He believes that excessive debt issue and overleverage are at the roots of our problems—call it secular stagnation, the global savings glut, the safe asset shortage, the balance sheet recession, whatever.

In Rogoff's view:

> Unlike secular stagnation, a debt supercycle is not forever.… Modern macroeconomics has been slow to get to grips with the analytics of how to incorporate debt supercycles.… There has been far too much focus on orthodox policy responses and not enough on heterodox responses.… In a world where regulation has sharply curtailed access for many smaller and riskier borrowers, low sovereign bond yields do not necessarily capture the broader "credit surface" the global economy faces.… The elevated credit surface is partly due to inherent riskiness and slow growth in the post-Crisis economy, but policy has also played a large role.

The key here is Rogoff's assertion that the low borrowing rate faced by major North Atlantic sovereigns "do[es] not necessarily capture the broader 'credit surface'"—that the proper shadow price of government debt issue is far in excess of the sovereign borrowing rate. Why? Apparently because future states of the world in which private bondholders would default are also those in which it would be very costly in social utility terms for the government to raise money through taxes.

I do not see this. A major North Atlantic sovereign's potential tax base is immensely wide and deep. The instruments at its disposal to raise revenue are varied and powerful. The correlation between the government's taxing capacity and the operating cash flow of private borrowers is not that high. A shock like that of 2008–2009 temporarily destroyed the American corporate sector's ability to generate operating cash flows to repay debt at the same time that it greatly raised the cost of rolling over debt. But the US government's financial opportunities became much more favorable during that episode.

Moreover, Rogoff also says:

> When it comes to government spending that productively and efficiently enhances future growth, the differences are not first order. With low real interest rates,

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and large numbers of unemployed (or underemployed) construction workers, good infrastructure projects should offer a much higher rate of return than usual.

and thus with sensible financing and recapture of the economic benefits of government spending, have little or no impact on debt-to-income ratios.

Conclusion

Looking forward, I draw the following conclusions:

1. North Atlantic public sectors for major sovereigns ought, technocratically, to be larger than they have been in the past century.
2. North Atlantic relative public debt levels for major sovereigns ought, technocratically, to be higher than they have been in the past century.
3. With prudent regulation—that is, the effective limitation of the banking sector's ability to write unhedged puts on the currency—the power major sovereigns possess to tax the financial sector through financial repression provides sufficient insurance against an adverse preference shock to the desire for government debt.

The first two of these conclusions appear to me to be close to rock-solid. The third is, I think, considerably less secure.

Nevertheless, in my view, if the argument against a larger public sector and more public debt in the twenty-first century than in the twentieth for major North Atlantic sovereigns is going to be made successfully, it seems to me that it needs to be made on a political-economy government-failure basis.

The argument needs to be not that larger government spending and a higher government debt issued by a functional government would diminish utility but rather that government itself will be highly dysfunctional.

Government needs to be viewed not as one of several instrumentalities we possess and can deploy to manage and coordinate our societal division of labor but rather as the equivalent of a loss-making industry under really existing socialism. Government spending must be viewed as worse than useless. Therefore relaxing any constraints that limit the size of the government needs to be viewed as an evil.

Now the public choice school has gone there. As Lawrence Summers (2011) said, they have taken the insights on government failure and "driven it relentlessly towards nihilism in a way that isn't actually helpful

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for those charged with designing regulatory institutions," or, indeed, making public policy in general. In my opinion, if this argument is to be made, it needs a helpful public choice foundation before it can be properly built.

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