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Can We Determine the Optimal Size of Government?

by James A. Kahn

Executive Summary

The massive spending programs and new regulations adopted by many countries around the world in response to the economic crisis of 2008 have drawn renewed attention to the role of government in the economy. Studies of the relationship between government size and economic growth have come up with a wide range of estimates of the "optimal" or growth-maximizing size of government, ranging anywhere between 15 and 30 percent of gross domestic product (GDP).

This paper argues that such an exercise is ill conceived. Modern growth economics suggests, first, that government policies leave their long-term impact primarily on the level of economic activity, not the growth rate; and, second, that the sources of this impact are multi-dimensional and not necessarily well measured by conventional measures of "size," such as the share of government spending in GDP.

In fact, measures of economic freedom more closely relate to per capita GDP than do simple measures of government spending. The evidence shows that governments are generally larger than optimal, but because the available data include primarily countries whose governments are too large, it cannot plausibly say what the ideal size of government is. The data can realistically only say that smaller governments are better, and suggest that the optimal size of government is smaller than what we observe today.

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Government policies leave their long-term impact primarily on the level of economic activity, not the growth rate.

Introduction

The massive spending programs and new regulations adopted by many countries around the world in response to the economic crisis of 2008 have drawn renewed attention to the role of government in the economy. Recent research relating the size of government to the pace of economic growth has suggested that the growth-maximizing size of government may be as large as 30 percent of gross domestic product (GDP).[1] This paper will argue that such a conclusion is not warranted by the evidence. Moreover, much of this research asks the wrong questions with the wrong data, and consequently cannot hope to come up with a plausible answer to the question of what is the optimal size of government.

The first part of this paper briefly reviews the literature on economic growth. Two important messages from this body of research are, first, that government policies leave their long-term impact primarily on the level of economic activity, not the growth rate; and, second, that the sources of this impact are multi-dimensional and not necessarily well measured by conventional measures of "size," such as the share of government spending in GDP.

The paper then examines the available evidence on the impact of government size—which is broadly defined in terms of economic freedom—on per capita GDP. The conclusion is that governments are generally too large: that is, that greater economic freedom results in a higher average standard of living. As with the earlier studies, this evidence cannot plausibly say what the ideal size of government is, only that virtually all governments are larger than optimal from the standpoint of maximizing economic activity. Because the available data include primarily countries whose governments are too large, econometrics—like a lost hiker trying to descend a mountain—can realistically only say what direction to go (down), not how far one must go to reach the destination.[2]

Lessons from Research on Growth

The study of economic growth experienced a resurgence in the 1980s. For the most part, this work reaffirmed the basic conclusion of Nobel Prize–winning economist Robert Solow that economic policies have a lasting impact primarily on the *level* of economic activity, not the growth rate.[3] Differences in growth rates between two countries tend to be transitory. Longer-term growth trends are largely a function of worldwide technological advance. Hard as it is to believe, poor countries, on average, grow about as fast as rich countries, although there is a much wider dispersion of growth rates at the poor end of the distribution. Changes in government policies (or other events, such as changes in commodity prices) may result in temporary bursts of growth or periods of relative stagnation, but eventually countries tend to level off to a normal rate of growth, albeit at different levels. Sometimes, as in the case of postwar Japan or modern-day China, these growth episodes can last decades, especially if a country starts from a very low level of per capita GDP. (This suggests that major policy changes can produce higher growth for a substantial period of time, but there are relatively few such examples.) It is a mistake, however, to extrapolate current growth rates. Those who predicted, in the 1980s, that Japan would surpass the United States in per capita GDP learned this the hard way, yet many so-called experts are now predicting that China's total GDP will surpass that of the United States by 2030.[4]

The implication is that growth rates are only a transitory indicator of economic policies. Strong growth may indicate *improved* policies, but the improvement may be from a very low level, and the growth may not persist more than a few years.[5] Zimbabwe could probably experience double-digit growth with a few relatively modest reforms simply because it is starting at such a low level and with such horrendous economic policies; but *without a major transformation,*

that growth will peter out long before the country even begins to close its gap with even its more prosperous (but still relatively poor) neighbors, such as South Africa and Namibia, never mind with more advanced economies.

More generally, countries can be thought of as either in a "balanced growth" state, in which per capita GDP growth fluctuates around the normal long-term rate of about two percent annually, or in transition—meaning sustained growth at an above or below normal rate until they reach the balanced growth state. China is obviously in transition; West Germany and Japan were in transition during their decades-long recovery from World War II. Most of Western Europe, the United States, and Canada were more or less in balanced growth over the past 20 years up until 2007, when the financial crisis hit and government policies deviated wildly from the past.

When countries do level off to normal growth rates, they can be at widely different levels of GDP per capita, depending on government policies and other fundamentals. This is what economists refer to as "conditional convergence": countries with similar policies, institutions, and demographics will eventually end up at similar levels of GDP per capita.[6] Thus, Western European countries appear to have converged to a level about 70 to 75 percent of U.S. per capita GDP (although with Spain and Italy somewhat lower). Canada and Australia, whose fundamentals lie somewhere between those of Western Europe and the United States, converged to 80 to 85 percent of U.S. per capita GDP.

All of this suggests that the relationship between per capita GDP and economic policies is not easily captured by looking at correlations at a point in time, unless countries have had stable policies for long enough to have converged to their balanced growth paths. The relationship of policies to GDP *growth* is even more complex, as this essentially requires countries to be in transition, and therefore their starting points will come into play. China can experience double-digit growth despite a large government presence in the economy simply because it started from an impoverished state with even more government control.

Given this discussion, we will focus on the relationship between levels of GDP per capita and government policies for countries that have had relatively stable policies (at least until 2007). Figure 1 looks at the relationship between government outlays as a share of GDP and GDP per capita for 18 advanced economies. It uses the 1996 spending share with 2008 per capita GDP data, the idea being that after the volatile 1970s and 1980s, government spending had settled down to a steady share in most of these countries by the mid-1990s, and any transitional effects would have dissipated by 2008. Even for this relatively homogeneous group, however, while there is a negative relationship, it is not especially strong or tight.[7]

The weak relationship in Figure 1 should not be surprising. Many factors influence per capita GDP other than the size of government, even among broadly similar advanced economies. Policies related to human capital (education and immigration, for example) can vary widely. Countries may differ in their tax systems (progressivity, capital taxation, social insurance) quite apart from the scale of government. Governments of similar size may differ in the scope of their activities. And even advanced economies may be influenced by history and still be in transition, even if not as dramatically as China in the last decade or Japan after World War II. Finally, we cannot rule out reverse causality—wealthier countries may demand more or fewer government services.

Despite these caveats, a long-run negative impact of government outlays on per capita GDP finds support in the literature. Harvard economist Robert Barro, for example, controls for a number of other factors and finds that even a narrow measure of government spending relative to GDP has an adverse impact on subsequent growth.[8] James Gwartney et al. find a strong negative correlation between government outlays and subse-

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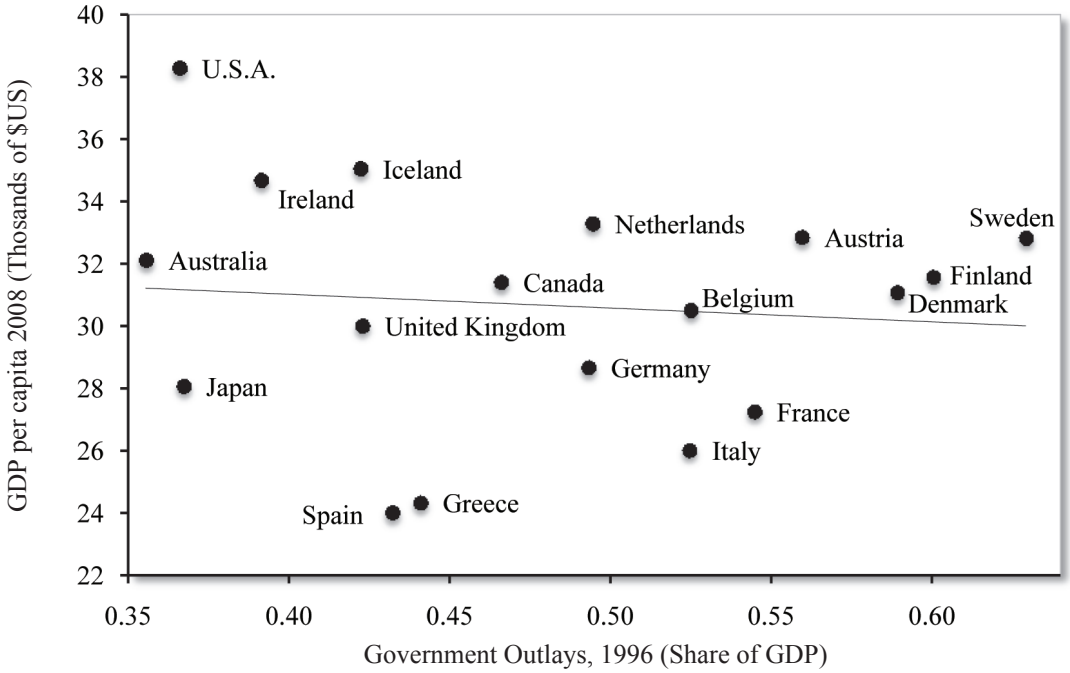
Figure 1
Government Spending and Per Capita GDP



Source: Author's work, based on data from the Fraser Institute, http://freetheworld.com.
Note: Data come from the OECD, in year 2000 $US, PPP adjusted. Government outlays includes transfers.

quent growth in data that cover a somewhat larger set of countries over a longer time period.[9] Even if the true structural long-term relationship is between government spending and the level of per capita GDP, we could see growth effects for a substantial period of time if countries with high spending tend also to have increased the size or scope of their governments. The growth effects reflect the transition to a level of GDP per capita below where it would have been without the growth in government.

The Size of Government and Labor Supply

The most straightforward mechanism linking the size of the government budget to the level of income per capita is through the impact of marginal tax rates on labor supply. One way to think of this is that GDP can be decomposed into two components: output per hour (labor productivity) and total hours of work. Many studies have shown that European economies have similar productivity to the United States but much lower hours of work. But here again, a simple notion of size may be inadequate. Even two countries with exactly the same ratio of government expenditure to GDP may have different income-tax structures that give rise to different levels of employment. One country may have a relatively flat tax, so that marginal rates are not much higher than average rates, whereas another country may have a very progressive structure that penalizes extra work effort on the margin. With similar average tax rates, economic theory predicts that the country with the more progressive system will have lower hours of employment.

Much of the difference in hours of work per capita between the United States and Europe is attributable to the differences in their tax systems.

This prediction is borne out by a comparison between the United States and Western European economies. Nobel Prize–winning economist Edward Prescott argues that much of the difference in hours of work per capita between the United States and continental Europe is attributable to the differences in their tax systems.[10] This includes not just income taxes, however, but also their unemployment and social security systems.[11] Countries such as France and Germany have relatively high marginal tax rates and generous unemployment insurance. While having similar productivity to workers in the United States, the French and Germans work only about 70 percent of the hours of their U.S. counterparts; hence the difference in GDP per capita.

It is sometimes argued that the lower labor supply in Europe is the result of cultural differences (or tastes), not taxation or regulation. Some have even gone so far to say that the European "preference" for leisure is superior to the American inclination toward hard work. Economist Juliet Schor argues that Americans' propensity for hard work is like the bad outcome of a Prisoners' Dilemma—if we could all agree to work less we would all be happier.[12] In that scenario, government-mandated vacation time and workweek limits make us all better off. Proponents of the European model, however, have not explained the source of the market failure that would make individual voluntary decisions result in an inferior outcome. Moreover, Schor's argument is premised on the questionable proposition that leisure time has declined. Recent work by Mark Aguiar and Erik Hurst has shown that once other nonwork activities such as household and school work are taken into account, Americans' leisure time has trended upward.[13]

The Size of Government and Productivity

Once we move beyond the advanced economies and look at income per capita more broadly, the vast differences around the world are no longer driven by labor supply, but by productivity. That is, people in impoverished countries have low incomes not primarily because they do not work as hard as those in advanced economies, or even because they are not as educated or skilled. While differences in human capital play an important role, a major factor accounting for poverty is inefficiency. Whatever natural resources or innate endowments a country may have, including its labor force and capital stock, if it fails to use them efficiently it will leave itself relatively poor compared to countries that do make more efficient use of their resources.

The government may have both a positive and negative role in encouraging efficiency. A positive contribution may come from the government's production of public goods, including, for example, law enforcement, national defense, and some kinds of infrastructure. On the other hand, governments may distort private decisions and push economies away from efficient outcomes. Common interventions include imposing restrictions on international trade, or on labor markets (such as minimum-wage laws and restrictions on firing employees), and direct government ownership and control of major industries. The latter is particularly common in countries reliant on natural resource extraction.

Robert Hall and Charles Jones argue that "social infrastructure," by which they mean "institutions to protect the output of individual productive units from diversion," (e.g., confiscatory taxation, expropriation, and thievery) is a key determinant of a country's level of productivity.[14] They note that while government "can protect against diversion, it is also in practice a primary agent of diversion."[15] This conundrum is sometimes rendered as "Quis custodiet ipsos custodes?" (Who watches the watchmen?) It is a plausible explanation for the apparent bias toward overly large and intrusive governments throughout the world. We have to provide government with sufficient powers

A major factor accounting for poverty is inefficiency.

(taxation, military, legal) to do the necessary things: national defense, courts, police, and enforcement of contracts and property rights. Once so endowed, the temptation to do more or to take advantage is irresistible.[16]

William Easterly similarly emphasizes the importance of maintaining incentives for individuals to invest, work, and take risks.[17] He writes that "governments can avoid killing growth by avoiding . . . high inflation, high black market premiums, high budget deficits, strongly negative real interest rates, restrictions on free trade, excessive red tape, and inadequate public services." Only the last of these represents a positive role for government, at least for services the private sector is unable to provide; the rest are symptoms of government excess—fiscal irresponsibility, corruption, or just incompetence.[18]

Whatever the optimal government size may be, the normal state of affairs is for governments to grow beyond that.

The inescapable conclusion of this literature is that while government can and does play a positive role in facilitating productive activity, it also has a natural tendency to divert resources toward itself, either via outright corruption, excessive taxation, or the gradual accretion of bureaucratic intervention. So whatever the optimal government size may be, the normal state of affairs is for governments to grow beyond that, to a point where, on the margin, it exerts a negative influence. Barro's finding, mentioned earlier, of a negative effect of government spending on economic growth (once initial conditions and a variety of other variables are controlled for) can be seen as evidence for this proposition.[19]

Measuring the Size of Government

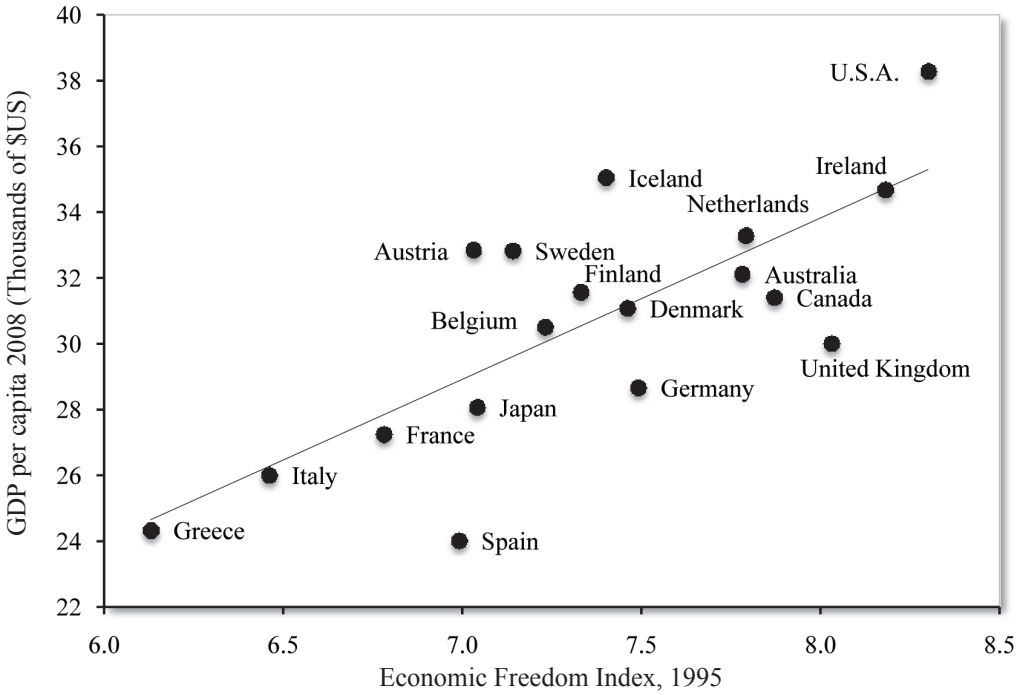
The two measures of government size most researchers use are the share of government purchases (in other words, government spending excluding transfer payments) in GDP and the ratio of total government expenditures to GDP. The argument for the more narrow measure is that, first, transfer payments, such as Social Security, do not count toward GDP; and, second, that merely taking money from one person and transferring it to another does not represent government economic activity in the same way as, for example, the government taking that money and providing a government service, building a road, or purchasing military equipment.

Transfer payments' impact on overall economic performance may be smaller than that of government purchases, but both types of spending will increase average (and presumably marginal) tax rates. Moreover, as discussed above, some government expenditures—national defense, police, and the court system being obvious examples—are for public goods that provide some benefit and may enhance economic performance. The social benefits of transfers are more nebulous: possibly reduced poverty and inequality, reduced income volatility, or social stability.[20] And frequently a large component of transfer payments is interest on the debt, which just represents delayed payment for previous government purchases.

But neither of these measures adequately captures the magnitude of government's role in the economy. Many government actions cost little or nothing, but have a potentially large impact on the economy. The primary budget cost of government regulations and trade restrictions is for enforcement, but that is only a small fraction of their economic impact. If the government puts a quota on steel imports, restricts employers' ability to fire their workers, or nationalizes a major industry, it may have little or no impact on expenditures yet have a significant effect on productivity or GDP.

There have been several efforts to quantify these broader notions of government "size." The social infrastructure index of Hall and Jones, for example, emphasizes indicators of corruption and diversion of resources.[21] For the purposes of this paper, I will use the Fraser Institute's *Economic Freedom of the World* index, which encompasses measures of barriers to international trade, labor market freedom, and currency soundness, among other vari-

Figure 2
GDP Per Capita and Economic Freedom



Source: Author's work, based on data from the Fraser Institute, http://freetheworld.com.
Note: GDP per capita is as in Figure 1, in year 2000 $US, PPP adjusted.

ables, in addition to government spending.[22] The relation between this index and GDP per capita is illustrated in Figure 2 for the same group of countries included in Figure 1.

This broader (inverse) measure of the size of government clearly shows a stronger relationship with GDP per capita than just the ratio of government spending to GDP. It also shows no obvious leveling off or "hump" shape to suggest that there is an optimal level of economic freedom within the observed range. The data simply suggest that more economic freedom leads to greater prosperity.

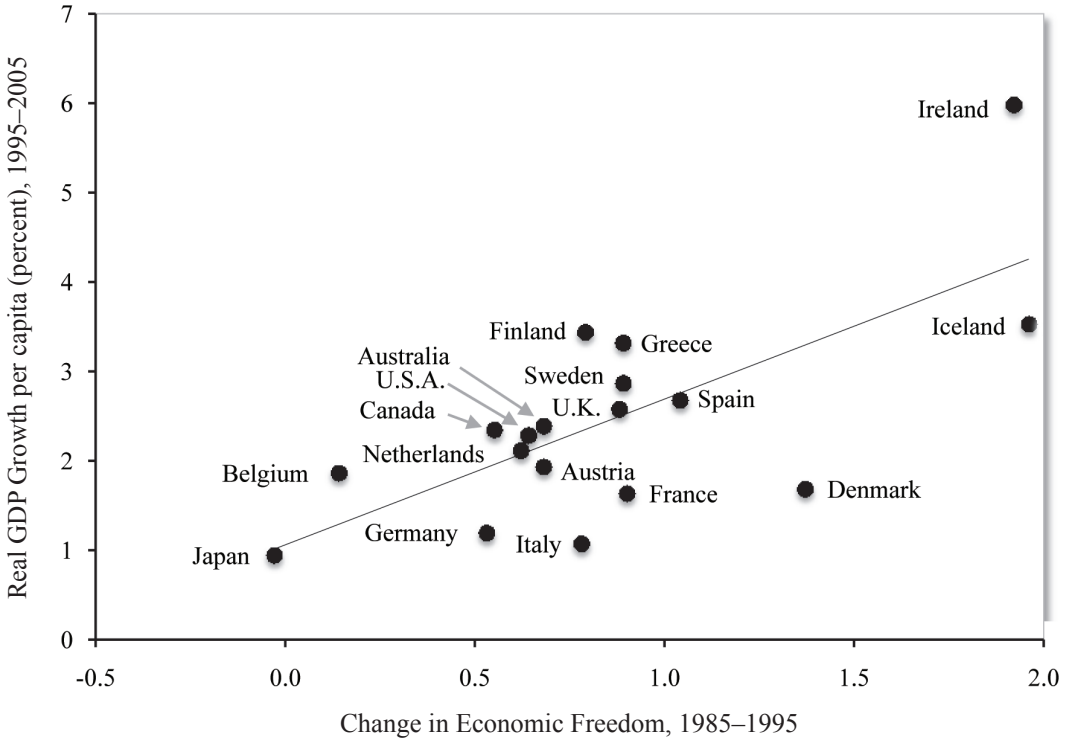
Moreover, even looking beyond these 18 countries, there are few examples of governments that are smaller (i.e., that allow more economic freedom) than the United States,[23] so there is no basis for concluding that there is an optimal level of economic freedom or size of government. Until we find substantial numbers of countries with greater freedom but declining living standards, we can only conclude that greater economic freedom results in higher GDP per capita, with no maximum in sight.[24]

Of course, reverse causality still may be an issue, even using the freedom index from 1995, given the strong persistence of relative income levels. Perhaps wealthier societies demand more economic freedom. For example, relative income levels from 1985 still line up well with economic freedom in 1995. To address these concerns, Figure 3 looks at changes in the index from 1985–1995 in relation to per capita GDP growth from 1995–2005. Again we see a strong positive relationship. The reverse causality argument is much harder to make here, since it would require growth in the later period to have caused the increase in economic freedom 10 years earlier.[25]

Figure 3 further buttresses the view that economic freedom, which is really a broader and more inclusive inverse measure of government size, has a strong positive long-run influence on the level of GDP per capita.

Greater economic freedom results in higher GDP per capita, with no maximum in sight.

Figure 3
Economic Freedom and Growth (Changes)



Source: Author's work, based on data from the Fraser Institute, http://freetheworld.com.

Conclusion

Most political theorists have long understood the necessity of some form of government to protect individuals and property, provide public goods, and enforce private contracts. They have also recognized the almost inexorable tendency of governments to become overgrown and corrupt, and thus, on the margin, to exert a negative impact on productive economic activity. Efforts to discover the optimal size of government have been plagued by issues of measurement (what is the right measure of "size"?) and methodology (what is the right evidence to look at and how should it be examined?).

On the measurement front, this paper has argued for going beyond the size of the government budget to include such factors as regulations, price controls, and trade restrictions. Regarding methodology, it has argued for approaches that take into account "simultaneity" (the problem of disentangling cause-and-effect) and the multidimensional nature of the problem, and which look for lasting effects on the level, rather than the growth rate, of economic activity. Surveying the literature, and looking directly at broader measures of government size, while the evidence does not allow us to determine what the optimal size of government is, it does clearly indicate that, for the most part, the governments we observe are too large—at least from the point of view of maximizing GDP per capita.

If the bias of government is always toward more spending, perhaps there is too much spending on core functions as well.

What is the ideal size of government? The Gwartney et al. estimate that the U.S. government spends about 15 percent of GDP for "core functions" provides some guidance, but even that may be misleading.[26]

Surely governments face tradeoffs, and to the extent that they do too much of one thing, they may do too little of another.[27] Alternatively, if the bias of government is always toward more spending, perhaps there is too much spending on core functions as well. Once we accept that the vagaries of the political process do not result in efficient levels of spending in some areas, there is no reason to presume that the observed levels of spending in any area are just right.[28] So while the gap between the 15 percent of GDP on core functions and overall outlays of nearly 40 percent may provide a rough measure of unproductive outlays, we cannot therefore infer that 15 percent is the right size of government. Such a determination requires a cost-benefit analysis that is, unfortunately, rarely a part of the political process.

Notes

1. For example, Dimitar Chobanov and Adriana Mladenova find an optimum of 25 percent for government outlays as a share of GDP, while Richard K. Vedder and Lowell E. Gallaway get 29 percent. See Dimitar Chobanov and Adriana Mladenova, "What Is the Optimum Size of Government?" Institute for Market Economics, Working Paper, 2009; and Richard K. Vedder and Lowell E. Gallaway, "Government Size and Economic Growth," Joint Economic Committee, 1998. Taking a different approach, Vito Tanzi concludes that 30 percent of GDP is sufficient to finance all "legitimate interventions by the state," whereas James Gwartney et al. obtain a figure of 15 percent. See Vito Tanzi, "The Economic Role of the State in the 21st Century," *Cato Journal* 25, no. 3 (Fall 2005); James Gwartney, Randall Holcombe, and Robert Lawson, "The Scope of Government and the Wealth of Nations," *Cato Journal* 18, no. 2 (1998), 163–90; and Vito Tanzi and Ludger Schuknecht, *Public Spending in the 20th Century: A Global Perspective* (Cambridge: Cambridge University Press, 2000).

2. There may well be countries whose governments are too small—countries reputed to be in near anarchy, such as Afghanistan or Somalia, come to mind—but even this is unclear. Data from such countries tend to be of poor quality or nonexistent.

3. See Robert Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70, no. 1 (1956), 65–94. See also the discussions in Robert Hall and Charles Jones, "Why Do Some Countries Produce So Much More Output per Worker than Others?" *Quarterly Journal of Economics* 114, no. 1 (1999), 83–116; and Robert Barro and Xavier Sala-i-Martin, "Convergence," *Journal of Political Economy* 100, no. 1 (1992), 223–51.

4. See, for example, experts referenced in David Barboza, "China Passes Japan as Second-Largest Economy," *New York Times*, August 15, 2010. This would require China's GDP to grow nearly 6 percent faster than U.S. GDP annually over a 20-year period—the same sort of naïve extrapolation that had been applied to Japan a generation earlier being applied to a country with heavy government control and whose recent growth is premised on unreliable data.

5. This is not an original argument, of course, it is just frequently overlooked in the literature on the optimal size of government. See, for example, Hall and Jones; Jan-Egburt Sturm and Jakob de Haan, "How Robust is the Relationship between Economic Freedom and Economic Growth?" *Applied Economics* 33, no. 7 (2001), 839–44; and Stephen Easton and Michael Walker, "Income, Growth and Economic Freedom," *American Economic Review* 87, no. 2 (May 1997).

6. See Barro and Sala-i-Martin.

7. The results are not sensitive to the choice of years for either variable. The sample of countries in this chart was designed to include relatively advanced economies (as opposed to those that are in a transition phase and likely to look very different in a decade or two) not heavily reliant on oil exports. Natural resource extraction in general, but especially oil, can present a misleading picture of GDP per capita.

8. Robert Barro, "Economic Growth in a Cross Section of Countries," *Quarterly Journal of Economics* 106, no. 2 (1991), 407–43.

9. Gwartney et al. (1998).

10. Edward C. Prescott, "Why Do Americans Work So Much More Than Europeans?" *Federal Reserve Bank of Minneapolis Quarterly Review* 28, no. 1 (2004), 2–13.

11. See also Lars Ljungqvist and Thomas Sargent, "Do Taxes Explain European Employment? Indivisible Labor, Human Capital, Lotteries, and Savings," *NBER Macroeconomics Annual* 21 (2006), 181–246, and Prescott's response therein.

12. Juliet Schor, *The Overworked American* (New

York: Basic Books, 1993).

13. Mark Aguiar and Erik Hurst, "Measuring Trends in Leisure: The Allocation of Time over Five Decades," *Quarterly Journal of Economics* 122 no. 3 (2007), 969–1006.

14. See Hall and Jones.

15. This paradox is of course an old idea going back to Plato's *Republic*, and is analyzed extensively in James Buchanan, *The Limits of Liberty: Between Anarchy and Leviathan* (Chicago: University of Chicago Press, 1977).

16. Gwartney et al. (1998) estimate that expenditures for "core functions of government—protections of persons and property, national defense, education, monetary stability and physical infrastructure" amount to no more than 15 percent of GDP.

17. William Easterly, *The Elusive Quest for Growth* (Cambridge: MIT Press, 2002).

18. Daron Acemoglu et al. delve even deeper to argue that the range of institutions we observe can be explained by colonial policies around the world, which in turn were the result of local conditions, notably mortality rates that affected the abilities of Europeans to settle. See Daron Acemoglu, Simon Johnson, and James Robinson, "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91, no. 5 (2001), 1369–1401.

19. See Barro for the measure of spending that excludes transfer payments, defense, and education.

20. The idea that income inequality causes crime is often cited as a justification for redistribution, but evidence for this proposition is mixed at best.

21. See Hall and Jones. Corruption is strongly correlated to less economic freedom, and is a broad measure of the size of government. See James Gwartney et al., *Economic Freedom of the World: 2009 Annual Report* (Vancouver, BC: Fraser Institute, 2009), p. 22.

22. Ibid. Data retrieved from http://freetheworld.com.

23. In 1995 there were only three: Hong Kong, Singapore, and New Zealand. In 2008, Switzerland and Chile also had more economic freedom than the United States. See James Gwartney, Joshua Hall, and Robert Lawson, *Economic Freedom of the World: 2010 Annual Report* (Vancouver: Fraser Institute, 2010).

24. Thus Chobanov and Mladenova's claim that a government outlay ratio of 25 percent of GDP maximizes growth is questionable at best, since the smallest ratio in their sample exceeds 30 percent.

25. Others have found similarly. For example, Sturm and de Haan also find that "the change in economic freedom is strongly related to economic growth. However, the level of economic freedom is not related to growth." Stephen Easton and Michael Walker find a significant positive effect of economic freedom on the long-run level of per capita income.

26. Gwartney et al. (1998).

27. Milton Friedman made a similar point in an interview with Charlie Rose on December 26, 2005. He said that as governments have ventured into areas they have no real business being in, they end up doing a worse job with the activities they should be undertaking.

28. It is noteworthy that as the redistributive activities of the U.S. government have grown, the share of expenditures on national defense has diminished—from nearly 10 percent in 1960 to around 5 percent today. It would be a remarkable coincidence if these expenditure levels were somehow both optimal.

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