
Going Bust for Growth

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There are few areas of robust growth around the world, with the IMF repeatedly reducing its growth forecasts in recent quarters. This period of slow growth is particularly dangerous because both industrial countries and emerging market economies (EMEs) need high growth to quell rising domestic political tensions. Policies that attempt to divert growth from others rather than create new growth are more likely under these circumstances. Even as we create conditions for sustainable growth, we need new rules of the game, enforced impartially by multilateral organizations, to ensure that countries adhere to international responsibilities.

The Conventional Diagnosis and Remedy

Why is the world finding it so hard to restore pre-global recession growth rates? The obvious answer is that the financial boom preceding the global recession left industrial countries with an overhang of debt, and debt, whether of governments, households, or banks, holds back growth.¹ While the remedy may be to write down debt so as to revive demand from the indebted, it is debatable whether additional debt-fueled demand is sustainable. In any event, large-scale debt write-offs seem politically difficult even if they are economically warranted.

How does one offset weak household and government demand if debt write-downs are off the table? Ideally, the response would be to incentivize investment and job creation through low interest rates and tax incentives. But if final demand from consumers is likely to be very weak for a considerable period of time because of debt overhang, the real return on new investment may collapse. The Wicksellian neutral real rate—loosely speaking, the interest rate required to bring the economy back to

full employment with stable inflation—may even be strongly negative.² This typically has been taken as grounds for aggressive monetary policy. Because policy rates cannot be reduced significantly below zero (though a number of European countries are testing these limits), equilibrium long-term interest rates may stay higher than levels necessary to incentivize investment. Hence, central banks have embarked on unconventional monetary policy, which would directly lower long rates.

Another way to stimulate demand is for governments that still have the ability to borrow to increase spending. Since this will increase already high levels of government debt, proponents suggest investing in infrastructure, which may have high returns today when construction costs and interest rates are low. However, high-return infrastructure investment is harder to identify and implement in developed countries, where most obvious investments have already been made. Also, while everyone can see the need for repair and renovation of existing infrastructure, undertaking it requires far more decentralized spending and may be harder to initiate and finance from the center.

Put differently, high-return infrastructure investment is a good idea but may be hard to implement on a large scale for most advanced economy governments. To the extent that such debt-fueled spending creates a self-fulfilling virtuous cycle of confidence and activity, it can be a bridge to sustainable growth. But to the extent that it misallocates capital, it can worsen public anxieties about the future, reducing corporate investment and increasing household savings.

All this highlights another concern. Even if stimulus works in raising growth temporarily—and the above discussion suggests it may not—this growth has to be a bridge to sustained aggregate demand. But what if it isn't?

The Productivity Puzzle, Secular Stagnation, and Other Concerns

The arguments I have just enunciated for action apply to an economy where nothing fundamentally is wrong except perhaps excessive debt—what is needed is a cyclical return of growth to potential growth. Yet a number of economists, such as Tyler Cowen, Robert Gordon, and Larry Summers, have raised the possibility that potential growth in industrial

countries had fallen even before the global recession of 2007–2009. Perhaps, then, the growth that we are trying to return to is unachievable without serious distortions.

The term “secular stagnation” used by Larry Summers to describe the current persistent economic malaise has caught on.³ But different economists focus on different aspects and causes of the stagnation.⁴ Summers emphasizes the inadequacy of aggregate demand, and the fact that the zero lower bound, as well as the potential for financial instability, prevents monetary policy from being more active. Among the reasons for weak aggregate demand are aging populations that want to consume less and the increasing income share of the very rich, whose marginal propensity to consume is small.

Tyler Cowen and Robert Gordon, on the other hand, emphasize a weak supply potential.⁵ They argue that the post–World War II years were an aberration because growth was helped in industrial countries by reconstruction, the spread of technologies such as electricity, telephones, and automobiles, rising educational attainment, higher labor participation rates as women entered the workforce, a restoration of global trade, and increasing investments of capital. However, postwar total factor productivity growth—the part of growth stemming from new ideas and methods of production—was lower than its 1920–1950 high. More recently, not only has productivity growth fallen further (with a temporary positive uptick toward the end of the 1990s because of the IT revolution), but growth has been held back by the headwinds of plateauing education levels and labor participation rates, as well as a shrinking labor force. It is obvious from these lists of factors that it is hard to disentangle the effects of weak aggregate demand from slow growth in potential supply.

Structural reforms, typically ones that increase competition, foster innovation, and drive institutional change, are the way to raise potential growth. But these hurt protected constituencies that have become accustomed to the rents they get from the status quo. Moreover, the gains to constituencies that are benefited are typically later and uncertain. No wonder Jean-Claude Juncker, then Luxembourg’s prime minister, said at the height of the euro crisis, “We all know what to do, we just don’t know how to get reelected after we’ve done it!”

The Growth Imperative

If indeed fundamentals are such that the industrial world has, and will, grow slowly for a while before new technologies and new markets come to the rescue, would it be politically easy to settle for slower growth? After all, per capita income is high in industrial countries, and a few years of slow growth would not be devastating at the aggregate level. Why is there so much of a political need for growth?

One reason is the need to fulfill government commitments. As the sociologist Wolfgang Streeck writes, in the strong growth years of the 1960s, when visions of a “Great Society” seemed attainable, industrial economies made enormous promises of social security to the wider public.⁶ The promises have been augmented since then in some countries by politically convenient (because hidden from budgets) but fiscally unsound increases in pension and old-age health care commitments to public-sector workers. Without the immediate promise of growth, all these commitments could soon be seen as unsustainable.

Another reason is that growth is necessary for intergenerational equity, especially because these are the generations that will be working to pay off commitments to older generations. Insofar as these are also the cohorts that can take to the streets, growth is essential for social harmony.

Not only are the benefits of growth unequally distributed across generations, they are also very unequally distributed within generations. Because of changes in technology and the expansion of global competition, routine repetitive jobs, whether done by the skilled or the unskilled, have diminished greatly in industrial countries. With every percentage point of growth creating fewer “good” jobs for the unskilled or moderately skilled, more growth is needed to keep them happily employed. Equally, the rapid deterioration in skills for the unemployed is an additional reason to push for growth.

The Deflation Fear

Finally, a big factor persuading authorities in industrial countries to push for higher growth is the fear of deflation. The canonical example here is Japan, where many are persuaded that the key mistake it made was to slip into deflation, which has persisted and held back growth.

A closer look at the Japanese experience suggests that it is by no means clear that its growth has been slower than warranted, let alone that deflation caused slow growth. It is true that after its devastating crisis in the early 1990s, Japan may have prolonged the slowdown by not taking early action to clean up its banking system or restructure overindebted corporations. But once it took decisive action in the late 1990s and early 2000s, Japanese growth per capita or per worker looks comparable with that of other industrial countries (table 27.1).⁷

What about the deleterious effects of deflation? One worrisome effect of deflation is that if wages are downwardly sticky, real wages rise and cause unemployment. Yet Japanese unemployment has averaged 4.5 percent between 2000 and 2014, compared to 6.4 percent in the United States and 9.4 percent in the euro area during the same period.⁸ In part, the Japanese have obtained wage flexibility by moving away from the old lifetime unemployment contracts for new hires to short-term contracts. While not without social costs, such flexibility allows an economy to cope with sustained deflation.

Another concern has been that moderately low inflation spirals down into seriously large deflation, where the zero lower bound on nominal interest rates keeps real interest rates unconscionably high. Once again, it is not clear this happened in Japan (figure 27.1).

Even if deflation is moderate, it may cause customers to increase savings in anticipation of a lower price in the future, especially if the zero lower bound raises real interest rates above their desired value. Figure 27.2 plots household savings as a share of GDP in Japan against the deflation rate. Again, it is hard to see a sustained pattern of higher savings with higher deflation.

Table 27.1

Growth in Real GDP per Capita, Advanced Economies, 1996–2014

	Japan	United States	Euro Area
1996–2000	0.63	3.10	2.41
2001–2005	1.05	1.56	0.99
2006–2010	0.35	–0.12	0.41
2011–2014	0.91	1.38	0.13

Source: World Economic Outlook Database, IMF, April 2015.

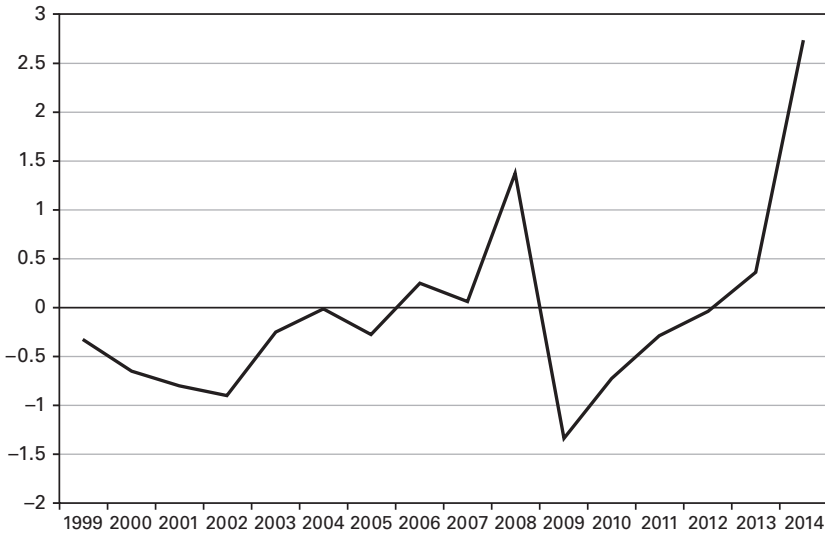


Figure 27.1
 Japan: CPI Inflation Rate (period average, in percent). *Source: World Economic Outlook Database, IMF, April 2015.*

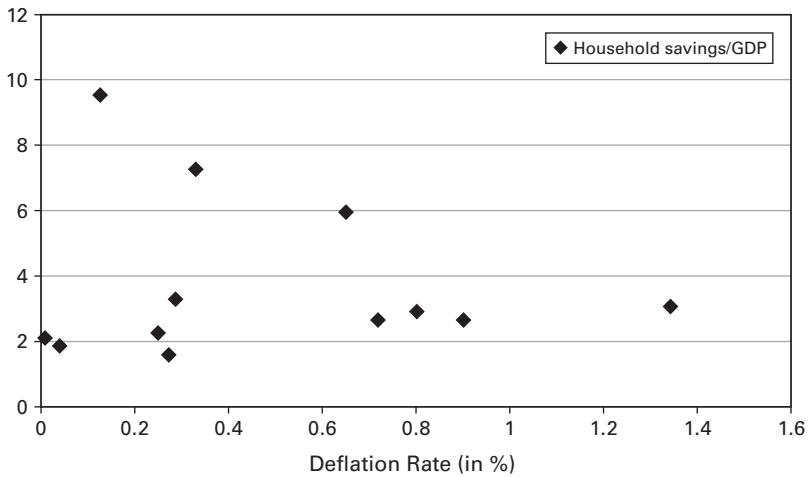


Figure 27.2
 Household Savings and Deflation Rate: Japan.
Note: This chart plots the deflation rates and savings ratios for Japan for all years with negative inflation rates since 1980–1995, 1999, 2000–2005, and 2009–2014.
Source: World Economic Outlook Database, IMF, April 2015.

Finally, it is true that deflation increases the real burden of existing debt, thus exacerbating debt overhang. But if debt is excessive, a targeted restructuring is better than inflating it away across the board.

Regardless of all these arguments, the specter of deflation haunts central bankers. When coupled with the other concerns raised above, it is no wonder that the authorities in developed countries do not want to settle for low growth, even if that is indeed their economy's potential.

So the central dilemma in industrial economies has been how to reconcile the political imperative for strong growth with the reality that cyclical stimulus measures have proved ineffective in restoring high growth, debt write-offs are politically unacceptable, and structural reforms have the wrong timing, politically speaking, of pain versus gain. There is, however, one other channel for growth—exports.

Emerging Markets' Response

If industrial countries are stuck in low growth, can emerging markets (I use the term broadly to also include developing or frontier markets) take up the global slack in demand? After all, EMEs have a clear need for infrastructure investment, as well as growing populations that can be a source of final demand. EMEs have no less of an imperative for growth than industrial countries. While many do not have past entitlement promises to deliver on, some have aging populations that have to be provided for, and many have young, poor populations with sky-high expectations of growth. Ideally, EMEs would invest for the future, funded by the rich world, thus bolstering aggregate world demand.

The 1990s were indeed a period when EMEs borrowed from the rest of the world in an attempt to finance infrastructure and development. It did not end well. The lesson from the 1990s crises was that EMEs' reliance on foreign capital for growth was dangerous.

Following the 1990s crises, as the dotted line in figure 27.3 indicates, a number of EMEs went further to run current account surpluses after cutting investment sharply, and started accumulating foreign exchange reserves to preserve exchange competitiveness. Rather than generating excess demand for the world's goods, they became suppliers, searching for demand elsewhere.

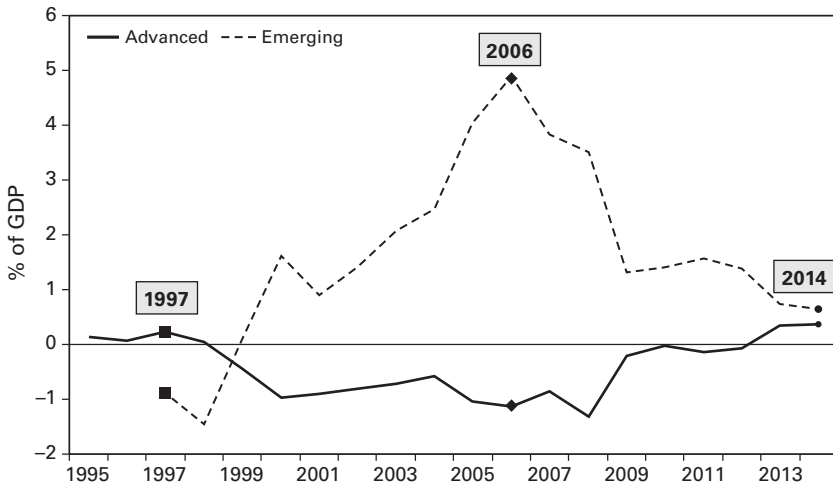


Figure 27.3

Current Account Balance (as percent of GDP).

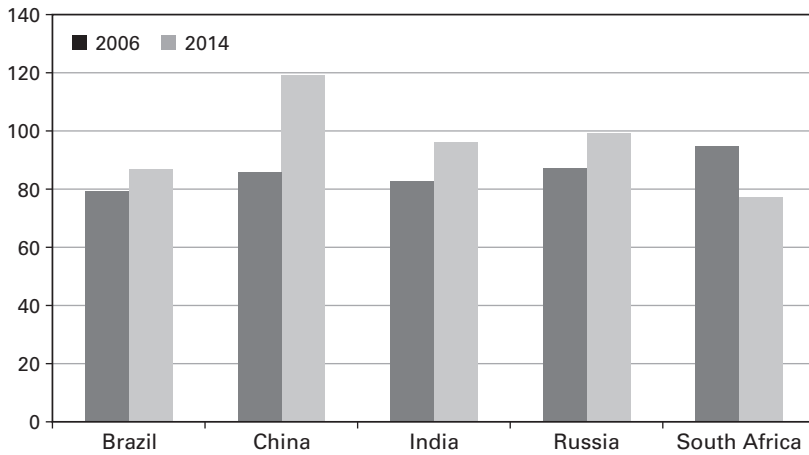
Note: Emerging economies include “emerging and developing” countries. Source: *World Economic Outlook Database*, IMF, April 2015.

In 2005, Ben Bernanke, then a governor of the Federal Reserve, coined the term “global savings glut” to describe the current account surpluses, especially of EMEs, that were finding their way into the United States.⁹ Bernanke pointed to a number of adverse consequences to the United States from these flows, including the misallocation of resources to non-traded goods such as housing and away from tradable manufacturing. He suggested that it would be good if the US current account deficit shrank, but that primarily required EMEs to reduce their exchange rate intervention rather than actions on the part of the United States.

Prior to the global financial crisis, then, EMEs and industrial countries were locked in a dangerous relationship of capital flows and demand that reversed the equally dangerous pattern before the EM crises in the late 1990s. Sustained exchange rate intervention by EM central banks, as well as an excessive tolerance for leverage in industrial countries, contributed to the eventual global disaster. But in the wake of the most recent financial crisis, the pattern is reversing once again.

Industrial countries have curtailed their investment without increasing their consumption (as a fraction of GDP), thus reducing their demand for foreign goods and their reliance on foreign finance. The counterpart of

(a)



(b)

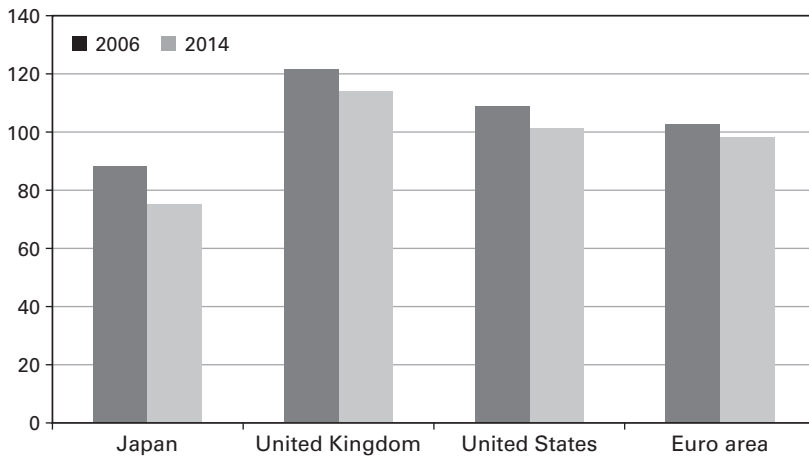


Figure 27.4

Real Effective Exchange Rate Movements, 2006–2014.

Notes: a. Selected emerging economies (REER index, 2010 = 100). b. Advanced economies (REER index, 2010 = 100). Source: *World Economic Outlook Database*, IMF, April 2015.

this shift of advanced economies from current account deficit (demand creating) to surplus (supply creating) has been a substantial fall in current account surpluses in EMEs. This relative increase in demand for foreign goods from EM countries has come about through a ramp-up in investment from 2008 rather than a fall in savings. Facilitating or causing this shift has been a broad appreciation of real effective exchange rates in EMEs and a depreciation in industrial country rates between 2006 and 2014.

Have industrial country central banks' policies, similar to the sustained exchange rate intervention by EMs' central banks in the early 2000s, accelerated this current account adjustment? Possibly, and likely candidates would be what are broadly called unconventional monetary policies (UMPs).

Unconventional Monetary Policy

UMPs include both policies whereby the central bank attempts to commit to hold interest rates at near zero for long and policies that affect central bank balance sheets, such as buying assets in certain markets, including exchange markets, in order to affect market prices.¹⁰

There clearly is a role for UMPs: when markets are broken or grossly dysfunctional, central bankers may step in with their balance sheets to mend markets. The key question is what happens when these policies are prolonged long beyond repairing markets to actually distorting them. Take, for instance, the zero-lower-bound problem. Because short-term policy rates cannot be pushed much below zero, and because long rates tack on a risk premium to short rates, central banks may use UMPs to directly affect long rates. Direct action by a risk-tolerant central bank, such as purchasing long bonds, effectively shrinks the risk premium available on remaining long assets.

This has two effects. First, those who can rebalance between short and long assets now prefer holding short-term assets because, risk adjusted, these are a better deal. Thus, as the central bank increases bond purchases under quantitative easing, the willingness of commercial banks to hold unremunerated reserves increases. Second, those institutions that cannot shift to short-term assets, such as pension funds, bond mutual funds, and insurance companies, will either continue holding their assets and suffer

a relative undercompensation for risk or turn to riskier assets. This *search for yield* will occur if the relative undercompensation for risk in more exotic assets is lower, or simply because institutions have to meet a fixed nominal rate of return.

None of this need be a problem if everyone knows when to stop. Unfortunately, there are few constraints on central banks undertaking these policies. If the policy does not seem to be increasing growth, one can simply do more. All the while, the distortion in asset prices and the misallocation of funds can increase, which can be very costly when the central bank decides to exit.

Equally important, though, is that domestic fund managers can search for yield abroad, depreciating the sending country's currency, perhaps significantly more so than ordinary monetary policy. This may indeed cause the increase in domestic competitiveness that could energize the sending country's exports. But such increases in competitiveness and "demand shifting" can be very detrimental for global stability, especially if unaccompanied by domestic demand creation.

Spillovers to Emerging Markets and Musical Crises

If UMP enhances financial risk taking in the originating country without enhancing domestic investment or consumption, the exchange rate impact of UMP may simply shift demand away from countries not engaging in UMP, without creating much compensating domestic demand for their goods. If so, UMP would resemble very much the exchange rate intervention policies of the EMEs before the global financial crisis of 2007–2009.

Indeed, the post-global crisis capital flows into EMEs have been huge, despite the best efforts of EMEs to push them back by accumulating reserves.¹¹ These flows have increased local leverage, not just through the direct effect of cross-border banking flows but also through an indirect effect, as the appreciating exchange rate and rising asset prices make it seem that EM borrowers have more equity than they really have. Bernanke's concerns in 2005 about malinvestment in the United States resulting from capital inflows have surfaced in EMEs post-crisis as a result of capital inflows from industrial countries.

Have crises in EMEs in the 1990s been transformed into crises in industrial countries in the 2000s, and once again into vulnerabilities in

EM countries in the 2010s, as countries react to the problem of inadequate global demand by exporting their problems to other countries? The “taper tantrum” in July 2013 certainly seemed to suggest that EM countries that ran large current account deficits were vulnerable once again.¹² Is the world engaged in a macabre game of musical [chairs] crises as each country attempts to boost growth? If possibly yes, how do we break this cycle?

Good Policies ... and Good Behavior

In an ideal world, the political imperative for growth would not outstrip the economy’s potential. But as we do not live in such a world, and because social security commitments, overindebtedness, and poverty are not going to disappear, it is probably wiser to look for ways to enhance sustainable growth.

Clearly, the long-run response to weak global growth should be policies that promote innovation, as well as structural reforms that enhance efficiency. Policies that improve the domestic distribution of capabilities and opportunities without significantly dampening incentives for innovation and efficiency are also needed.

In the short run, though, the need for sensible investment is paramount. In industrial countries, green energy initiatives such as carbon taxes or emission limits, while giving industry clear signals on where to invest, also have the ability to move the needle on aggregate investment and help long-run goals on environment protection.

Most EM countries have large infrastructure investment needs. We still need to understand how to improve project selection and finance, for too much public-sector involvement results in sloth and rent seeking and too much private-sector involvement leads to risk intolerance and profiteering. Going forward, well-designed public-private partnerships, drawing on successful experiences elsewhere, should complement private initiatives.

Clearly, sensible investment has a much better chance of paying dividends when macroeconomic policies are sound. And such policies are easier when the adverse spillovers from cross-border capital flows are limited. This may require new rules of the game for policymaking.

New Rules of the Game?

How do we focus on domestic demand creation and avoid this game of musical crises, with countries trying to depreciate their exchange rate through sustained direct exchange rate intervention or through UMPs (where demand-creating transmission channels are blocked)? It might be useful to examine and challenge the rationales used to justify such actions.

Rationale 1: Would the world not be better off if we grew strongly?

Undoubtedly, if there were no negative spillovers from a country's actions, the world would indeed be better off if the country grew. But the whole point about policies that primarily affect domestic growth by depreciating the domestic exchange rate is that they work by pulling growth from others.

Rationale 2: We are in a deep recession. We need to use any means available to jump-start growth. The payoff for other countries from our growth will be considerable.

This may be a legitimate rationale if the policy is a "one-off" and if, once the country gets out of its growth funk, it is willing to let its currency appreciate. But if the strengthening currency leads to a continuation of the UMPs as the country's authorities become unwilling to give back the growth they obtained by undervaluing their currency, this rationale is suspect. Moreover, policies that encourage sustained unidirectional capital outflows to other countries can be very debilitating for the recipient's financial stability, over and above any effects on their competitiveness. Thus, any "one-off" has to be limited in duration.

Rationale 3: Our domestic mandate requires us to do what it takes to fulfill our inflation objective, and UMP is indeed necessary when we hit the zero lower bound.

This rationale has two weaknesses. First, it places a domestic mandate above an international responsibility. If this were seen to be legitimate, then no country would ever respect international responsibilities when it was inconvenient to do so. Second, it implicitly assumes that the only way

to achieve the inflation mandate is through UMP (even assuming UMPs are successful in elevating inflation on a sustained basis, for which there is little evidence).

Rationale 4: We take into account the feedback effects on our economy from the rest of the world while setting policy. Therefore, we are not oblivious to the consequences of UMPs on other countries.

Ideally, responsible global citizenship would require a country to act as it would act in a world without boundaries. In such a world, a policymaker should judge whether the overall positive domestic and international benefits of a policy, discounted over time, outweigh its costs. Some policies may have largely domestic benefits and foreign costs, but they may be reasonable in a world without boundaries because more people are benefited than are hurt.

By this definition, rationale 4 does not necessarily amount to responsible global citizenship because a country takes into account only the global “spillbacks” for itself from any policies it undertakes, instead of the spill-overs also. So, for example, country A may destroy industry I in country B through its policies, but it will take into account only the spillback from industry I purchasing less of country A’s exports.

Rationale 5: Monetary policy with a domestic focus is already very complicated and hard to communicate. It would be impossibly complex if we were additionally burdened with having to think about the effects of (unconventional) monetary policies on other countries.

This widely heard rationale is really an abandonment of responsibility. It amounts to asserting that the monetary authority has only a domestic mandate, which is rationale 3 above. In an interconnected globalized world, “complexity” cannot be a defense.

Rationale 6: We will do what we must; you can adjust.

Adjustments are never easy, and sometimes they are very costly—one reason why Ben Bernanke placed the burden of change in his “savings glut” speech outside the United States. EM countries may not have the institutions that can weather the exchange rate volatility and credit growth associated with large capital flows—for instance, sharp exchange rate depreciations can translate quickly into inflation if the EM country’s

central bank does not have credibility, while exchange rate depreciations may be more easily endured by an industrial country.

The bottom line is that multilateral institutions such as the IMF should reexamine the “rules of the game” for responsible policy and develop a consensus around new ones. No matter what a central bank’s domestic mandate may be, international responsibilities should not be ignored. The IMF should analyze each new UMP (including sustained unidirectional exchange rate intervention) and, based on its likely effects and the agreed-upon rules of the game, declare it in- or out-of-bounds. By halting policies that primarily work through the exchange rate, it will also contribute to solving a classic prisoner’s dilemma problem associated with policies that depreciate the exchange rate—once some countries undertake these policies, staying out is difficult (the country that eschews these policies sees its currency appreciate and demand fall). Exit is also difficult (the exiting country faces sharp appreciation). Therefore, in the absence of collective action, these policies will be undertaken even when they are suboptimal, and will be carried on too long.

Of course, we clearly need further dialogue and public debate on the issues that have been raised, while recognizing that progress will require strong political leadership.

Conclusion

The current nonsystem in international monetary policy is, in my view, a source of substantial risk, both to sustainable growth as well as to the financial sector. It is not an industrial country problem or an EM country problem; it is a problem of collective action. We are being pushed toward competitive monetary easing and musical crises.

I use Depression-era terminology because I fear that in a world with weak aggregate demand, we may be engaged in a risky competition for a greater share of it. We are thereby also creating financial sector risks for when unconventional policies end.

We need multilateral institutions with widespread legitimacy to monitor new rules of the game. And each one of us has to work hard in our own countries to develop a consensus for free trade, open markets, and responsible global citizenry. If we can achieve all this even as recent economic events make us more parochial and inward-looking, we will truly

have set the stage for the strong sustainable growth we all desperately need.

Notes

The chapter draws on Governor Raghuram Rajan's panel presentation during the "Rethinking Macro Policy III" conference, as well as remarks before the Economic Club of New York on May 19, 2015. Rajan thanks Dr. Prachi Mishra of the Federal Reserve Bank for very useful comments and research support.

1. See the interesting evidence in Atif Mian and Amir Sufi, *House of Debt* (Princeton, NJ: Princeton University Press, 2014), and the cross-country evidence in Carmen Reinhart and Kenneth Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton, NJ: Princeton University Press, 2008). For an illuminating overall view of the global financial crisis and the policy remedies, see Martin Wolf, *The Shifts and the Shocks: What We've Learned and Have Still to Learn from the Financial Crisis* (New York: Penguin, 2015).

2. Though see a thoughtful piece by Claudio Borio and Piti Disyatat, "Low Interest Rates and Secular Stagnation: Is Debt a Missing Link?" (blog post *VoxEU*, Centre for Economic Policy Research, June 25, 2014, <http://www.voxeu.org/article/low-interest-rates-secular-stagnation-and-debt>), suggesting that the real neutral interest rate may be influenced by low policy rates.

3. Larry Summers, "U.S. Economic Prospects: Secular Stagnation, Hysteresis and Zero Lower Bound," speech before the National Association for Business Economics, Economic Policy Conference, February 24, 2014, <http://larrysummers.com/wp-content/uploads/2014/06/NABE-speech-Lawrence-H.-Summers1.pdf>.

4. See, for example, Wolfgang Streeck, "The Crises of Democratic Capitalism," *New Left Review* 71 (September/October 2011), or Raghuram Rajan, "The True Lessons of the Recession: The West Can't Borrow and Spend Its Way to Recovery," *Foreign Affairs* 91, no. 3 (May/June 2012).

5. Tyler Cowen, *The Great Stagnation How America Ate All The Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better* (New York: Dutton, 2011); Robert J. Gordon, "Is US Economic Growth Over? Faltering Innovation Confronts Six Headwinds," NBER Working Paper 18315 (Cambridge, MA: National Bureau of Economic Research, August 2012).

6. See Streeck, "The Crises of Democratic Capitalism."

7. I first learned of these facts from Jean-Claude Trichet. For a more comprehensive look at deflation, see Claudio Borio, Magdalena Erdem, Andrew Filardo, and Boris Hofmann, "The Costs of Deflations: A Historical Perspective," *BIS Quarterly Review*, March 2015.

8. Data from *World Economic Outlook Database*, IMF, Washington, DC, April 2015.

9. Ben S. Bernanke, "The Global Saving Glut and the U.S. Current Account Deficit," remarks by Governor Ben S. Bernanke before the Virginia Association

of Economists, the Sandridge Lecture, Richmond, VA, March 10, 2005, <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102>.

10. For an excellent overview, see Claudio Borio and Piti Disyatat, “Unconventional Monetary Policies: An Appraisal,” *Manchester School* 78, no. S1 (2010): 53–89. September 2010.

11. Indeed, similar to the behavior of commercial banks, the willingness of EM central banks to hold short-term paper in response to capital inflows enhances the ability of the industrial country central bank to engage in further UMPs. In a sense, EM central banks provide liquidity for foreign investors by holding precautionary reserves.

12. For those who advocate allowing exchange rate adjustment as central to macromanagement, it should be sobering that countries that allowed the real exchange rate to appreciate the most during the prior period of quantitative easing suffered the greatest adverse impact to financial conditions (see Barry Eichengreen and Poonam Gupta, “Tapering Talk: The Impact of Expectations of Reduced Federal Reserve Security Purchases on Emerging Markets,” faculty paper, Department of Economics, University of California, Berkeley, 2013; and Prachi Mishra, Kenji Moriyama, Papa N’Diaye, and Lam Nguyen, “The Impact of Fed Tapering Announcements on Emerging Markets,” IMF Working Paper [Washington, DC: IMF, 2014]).

