

GROWTH WITHOUT BUBBLES

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I. INTRODUCTION

In the past twenty years, we have had two periods of extended, robust growth, one from 1992 to 2000, and the other from 2002 to 2007. In both cases, aggregate output and employment grew steadily, unemployment fell to low levels, and inflation was restrained. To be sure, the two episodes had important differences: most notably, real median household income rose strongly in the 1990s but was largely stagnant in the early 2000s.¹ But, a key similarity was that both periods were accompanied by very large run-ups in asset prices that turned out in retrospect to be unjustified—a phenomenon that we commonly refer to as a "bubble" for short. The result was substantial overinvestment in certain sectors of the economy—high-tech in the 1990s, housing in the 2000s. More importantly, in both cases the bubble eventually burst, throwing the economy into a recession—a mild one at the end of the 1990s expansion, and as we all know, an extremely severe one in the current episode.

The subject I would like to talk about today is how we can achieve the good without the bad. Do we need asset price bubbles to get robust growth and low unemployment? Does growth inevitably create such bubbles? What can we do to ensure that the next expansion doesn't come with a bubble of its own, planting the seeds of the next recession? As the title of my talk suggests, how do we create growth without bubbles?

II. BUBBLE-FREE GROWTH IS POSSIBLE

My first observation is that history gives a clear answer to whether we can have strong growth without bubbles. Yes, we can. The history of the United States and other economies provides numerous examples of periods of

sustained growth that were not accompanied by large overvaluations of assets and substantial overinvestment in particular sectors.

For concreteness, let me focus on one such episode, which is the United States in the 1960s. Specifically, I want to consider the U.S. over the six-year period 1962 through 1967.² This period was one of unbroken and robust expansion, with real GDP growing at an average rate of 5.0% a year and the unemployment rate falling from slightly over 6% to just under 4%. This growth was reflected in steadily rising real median family income.³ Nonresidential investment averaged a healthy 11% of GDP, and its share was generally rising over the period. We ran trade surpluses, with our net exports averaging close to 1% of GDP. The federal budget deficit hovered near zero, and the ratio of our debt to GDP fell from 45 to 33%.⁴ The stock market rose at a very calm average rate of 5% a year.⁵

Of course, the 1960s were not perfect economically. The conglomerate mania led to some foolish business acquisitions and to overvaluations of specific companies. More importantly, monetary and fiscal policymakers expanded too far, especially near the end of the decade, overheating the economy, increasing inflation, and sowing the seeds of the eventual end of the expansion. But, none of this changes the fact that the period shows that we can have robust economic growth that is neither fueled by bubbles nor creates major bubbles.

There are many other examples of periods like this. The U.S. from the end of World War II through the 1950s, although not as stable as in the period I have just described, experienced healthy and sustained growth and sensible asset markets. And abroad, Japan, Canada, and most of Western Europe had sustained periods of non-bubbly growth from the end of World War II into the 1960s, and in some cases beyond.

Moreover, there is a reason why such periods of bubble-free growth are common. **There is a natural equilibrating mechanism that ensures that aggregate demand is adequate without the presence of an asset price bubble.** If, at prevailing interest rates, the demand for the economy's goods and services without any boost from bubble-driven investment fell short of the economy's normal capacity, this would translate into surplus funds in credit markets. The demand for loans to finance new investment projects and

purchases of durable goods would be less than the supply of funds from savers. But, this is just another way of saying that interest rates would be above their equilibrium levels. Interest rates would fall—relatively quickly if the Fed perceived the imbalance and injected additional funds into the market, more slowly if the imbalance were not evident. The fall in interest rates would increase investment and purchases of durable goods, as well as lower the value of the dollar and raise net exports. The process would stop when demand equaled supply with the economy operating at normal capacity. This is how economies have achieved healthy bubble-free growth throughout modern history.

III. PREVENTING BUBBLES

Even if bubbles aren't necessary to growth, an obvious question is how does an economy prevent asset price bubbles from developing? Here, the crucial insight is that bubbles are not a natural consequence of growth. Indeed, one of the strengths of a well-functioning market economy is that it gives people strong incentives not to pay inflated prices for assets and not to undertake projects that don't pay off. Even in the presence of a global savings glut, low interest rates, and—as some people like to put it—"lots of money sloshing around," it's not smart to lend money to people with lousy ideas. The venture capitalists who funded Boo.com, Webvan, Pets.com, and the other spectacular failures of the dot.com era lost bundles of money. The same is true of the real estate developers in the current episode who built large numbers of houses in distant exurbs that they were never able to sell. The experience of much of the period from the 1930s through the 1960s shows that it is possible to have very low interest rates without bubbles developing.

Thus, we can and should rely on market competition as the first line of defense against bubbles. But, as we've learned very painfully, we can't rely completely on these market forces. We need to make sure that financial markets are transparent and to work vigorously to combat fraudulent and deceptive practices, so that ordinary Americans who are not experts in finance are not taken advantage of. We need to prevent large financial firms from playing a game of "heads we win, tails you lose" with the taxpayers. We need to have appropriate regulation and oversight, particularly of financial firms that are important to the health of the overall financial system.

That is why the President has committed to working with Congress to undertake comprehensive reform of our financial regulatory structure. The full details of the reform will obviously take time and great care to flesh out, because it is crucial that we get this reform right. But, one element will clearly be central to the issue of preventing bubbles. Current proposals call for the creation of a systemic regulator, which will be charged with ensuring that all financial institutions whose combination of size, leverage, and interconnectedness pose a threat to financial stability are subject to conservative prudential requirements. The systemic regulator will also enhance monitoring of systemic threats from activities in financial markets, including identifying and curtailing practices that can create or exacerbate asset price bubbles.

More generally, going forward, policymakers will need to be alert for questionable practices, conflicts of interest, and the possibility of developing bubbles, rather than having blind faith in the wisdom of financial markets. The current episode has also taught us that cleaning up after a popped bubble is much harder than one might have previously thought. For this reason, policymakers may need to consider asset price movements as one of a number of indicators of current and prospective economic conditions that may warrant policy actions.

IV. THE LONG RUN

The essence of my argument thus far is that the goal of growth without bubbles is achievable and realistic. But, concretely, what will such growth look like? If growth is not driven by a boom in houses that turn out to have no buyers, or a boom in high-tech investments that turn out to have little use, what will it be driven by?

Let me start by talking about the long run. At some point, our current recession will end, and our economy will be operating at its normal level of capacity again. What will provide the demand for goods and services in that situation? To address this question, it is helpful to recall the first (and, in some cases, the only) equation that many of us met in our study of economics: the economy's output of goods and services equals consumption plus investment plus net

exports plus government purchases of goods and services. I further want to separate the investment piece of this breakdown into housing and nonhousing investment.

Looking at things in terms of this five-way breakdown, it seems fairly clear that two of the pieces will be providing a smaller portion of demand in the future than they did in recent years. The first is housing. Housing investment as a share of GDP reached its post-Korean War high in 2005, and it averaged more than 5½% over the 2002–2006 period. We were building about 30% more housing units a year in the expansion of the 2000s than in that of the 1990s.⁶ So, a return of housing's share in GDP to close to its postwar average of 4½ to 5% seems likely.

The second piece that will be providing a smaller portion of demand in the future is consumption. When housing and stock prices were rising rapidly, households could accumulate wealth without saving out of their incomes. As a result, the personal saving rate was close to zero. Once the economy has recovered, that is neither likely nor desirable. The saving rate has already risen to 4.2%, and it is likely to rise further as incomes recover from the recession and households work to rebuild their wealth. If the saving rate returned to its postwar average of 7% with no other changes, consumption's share in GDP would fall from the 70% it averaged from 2002 to 2006 to 66%.⁷ This is just a shade below its level during the expansion of the 1990s.

The role of government purchases of goods and services in generating demand is not likely to change greatly. (Note that economists do not treat programs like Social Security and Medicare as "government purchases," and they do not show up directly in GDP because they are effectively treated as transfer payments.) The composition of government purchases will change as our military involvements in Iraq and Afghanistan wind down and we invest in education, clean energy, and health care. This reorienting of government spending will make our economy more productive, and so will raise the path of output going forward. But, it is hard to see a big change in overall government purchases as a share of GDP, and so hard to see any substantial change in the role of those purchases in generating demand.

This leaves two components of output to make up the shortfall from declining housing investment and consumption: net exports and business investment. Both are likely to contribute to filling the shortfall. As we all know, we have been running large trade deficits over the past few decades. The average ratio of net exports to GDP in the 2000s expansion was a remarkable negative 5%. Such large trade deficits are simply not sustainable in the long run. They are the flip side of our high budget deficits and low personal saving, and they mean that the United States has been borrowing ever-increasing amounts from abroad. This clearly cannot continue indefinitely.

At the same time, we should not expect or want to be running trade surpluses anytime soon. The dynamism and technological leadership of the U.S. economy make it an attractive place to invest. Thus, even as the budget deficit falls and personal saving rises, it is still reasonable to expect investment to exceed saving, which necessarily implies a current account deficit. In addition, recent research shows that Americans have consistently earned higher rates of return on their investments abroad than foreigners have earned on their investments here.⁸ Given the safety and soundness of many U.S. assets, not to mention Americans' famous willingness to take risks, this is not surprising. But, it implies that some trade deficit is sustainable even in the very long run.

Nonhousing business investment is likely to be central to filling any demand shortfall in the long run. During the expansion of the 2000s, the share of nonhousing business investment in GDP averaged close to a full percentage point lower than its postwar average. Raising this component's share back to, and indeed above, its historical average is not the daunting task some would suggest.

Some of this increased investment should be encouraged by lower real interest rates. As I described before, healthy economies have a natural equilibrating mechanism. If consumers want to save more, interest rates tend to fall. This lowers the cost of borrowing and the opportunity cost of doing investment with retained earnings. Firms with innovative ideas or products in high demand will have every incentive to invest and expand. Figuring out what those investments should be is the fundamental job of the private sector. The strength of a well-functioning market system is that policymakers don't need to predict the

profitable investments in advance. We leave it to the small firms and big corporations to figure out what products consumers want and what investments will therefore generate the highest return.

But, some of the policies we are putting into place today may help sow the seeds for particular areas of robust investment in the future. The American Recovery and Reinvestment Act included unprecedented national investment in developing renewable energy and building a smarter electricity grid. This public investment may help pave the way for a wave of private energy investment by reducing uncertainty and providing useful demonstrations. The President's proposal to establish a market-based system to limit greenhouse gas emissions, if enacted, would also provide incentives for private investment in clean domestic energy.

The public investments in education and R & D included in the Recovery Act and the President's budget are another policy that could ultimately stimulate private investment. I believe it is no coincidence that an extended period of high investment and bubble-free growth occurred in the decades following the GI Bill.⁹ That unprecedented investment in human capital formation left American industry with a magnificently trained workforce and the country with a bounty of potential inventors and innovators. From these flowed the ideas and the incentives for rapid investment in the 1950s and 1960s. President Obama's announced commitment to science education, basic research, and expanded access to college for all Americans could unleash the same forces in the 21st century. Whatever the particular form the investments take, prudent government encouragement, together with lower interest rates, and the dynamism of American capitalism, should combine to generate ample demand and growth in the future.

V. THE NEXT FEW YEARS

Even if I have convinced you that growth without bubbles is possible in the long run, we still have to face the next few years. As we are all too well aware, the U.S. economy is still in the throes of a terrible recession. We learned last Friday that the unemployment rate reached 8.9% in April and employment is now 5.7 million lower than it was in December 2007. A crucial fact is that to return an

economy this sick to health, it is not enough for it to merely stop falling and start growing again. We know from previous recessions that the unemployment rate continues to rise as long as real GDP growth is below its normal rate of about 2½ % per year. To bring the unemployment rate down quickly, we need a period of truly robust growth of 4% per year or higher.

Given what I have said about the likely conservatism of consumers over the long haul, without another bubble, is there any hope for this healthy rebound in demand and growth? Here again, the answer is yes.

One key source of this short-run boost in demand is already coming from the government. I mentioned earlier that over the long run, government spending is not likely to be substantially larger. But, it is unquestionably going to be larger in the near term. The American Recovery and Reinvestment Act provides \$787 billion of aggregate demand stimulus, with the vast majority of it hitting the economy in the next two years. This extra stimulus is exactly what the economy needs to stop falling and start growing robustly. At a time when private investment and consumption is depressed, it is sound policy to expand government investment. It both puts people back to work and increases the public capital stock of the country, and so improves our productivity in the future.

In this context, it is also important to point out that other actions we are taking are also likely to provide an important boost to demand. The Federal Reserve's program of purchasing the debt of the government sponsored enterprises (Fannie Mae and Freddie Mac), together with the Treasury's actions to increase the government support for the GSEs, has brought mortgage rates to historic lows.¹⁰ This, together with eased equity requirements for homeowners whose property values have declined, has set off a wave of refinancing. Lower mortgage payments put more money in consumers' pockets and increase demand.

Our joint program with the Federal Reserve to restart the securitized lending market is also starting to pay dividends: the Term Asset-Backed Securities Loan Facility (TALF) program had a banner week last week, announcing requests for loans to buy asset-backed securities of \$10.6 billion.¹¹ Likewise, thanks to

reduced fees and larger guarantees, the Small Business Administration loan programs have seen a resurgence in transactions.¹² Developments such as these that increase lending are crucial to allowing credit-rationed households and firms to start spending again. Secretary Geithner is fond of saying there is probably as much stimulus in getting financial markets lending again as there is in direct fiscal stimulus.

While government actions will provide an important source of demand in the next few years, there is another factor that could also get us a temporary surge in spending: investment rebound and pent-up demand.

During a recession, households cut back on their purchases of houses and durable goods, and firms cut back on investment of all kinds. The cutbacks are far more than proportional to the fall in income. Further, the depressed spending during the recession pushes the stocks of investment goods and consumer durables to low levels. Restoring them to normal requires a period when purchases have not just returned to normal, but are unusually high. The result of these forces is that when the economy begins to recover, investment and purchases of durable goods grow rapidly, strengthening the recovery and further fueling growth in those sectors. The result is a virtuous circle that yields a period of rapid growth.

To understand this process, consider the case of inventories. In recent months, firms have been reducing their inventories in response to falling sales, rather than increasing them slightly as they normally do. As a result, total production in the economy has been falling much more than sales. Just having inventory accumulation return to zero or a small positive number would raise GDP growth sharply. But, during the recovery period, firms will want to do more than that. Inventories are now substantially lower than they were a year ago.¹³ When sales turn around, as they surely will, firms will want to rebuild their inventories, leading to a period when production is growing considerably faster than sales.

The process is similar for other types of investment and durable goods.

Investment other than housing and inventories, which was not exceptionally high during the expansion, has plunged. A return just to normal would raise growth substantially; and at some point firms will want to have unusually high investment as they replace the equipment they did not replace during the

recession and make the new investments they postponed. The housing sector is so depressed at the moment that a rise in housing starts to the level of the 1990s expansion would represent almost a tripling from current levels.¹⁴ And, even if consumption is lower in the long run because of increased saving, it is possible that there will be a period of unusually high expenditure as consumers buy some of the cars, appliances, and other durables they haven't bought over the past 18 months.

Now, to be realistic, historical evidence suggests that recessions accompanied by financial crises tend to be more severe and their recoveries are more protracted.¹⁵ For this reason, policymakers will clearly need to monitor the economy closely to see if the increase in government spending and the recovery of investment and the desire to rebuild stocks is generating sufficient demand. But, there is certainly a path by which this recovery could generate the rapid growth necessary to not only stop the rise in unemployment, but bring it down to normal levels at a reasonable pace, without resorting to the bubble-based demand of the past.

VI. IMPLICATIONS

All this leaves us with a cautiously hopeful view of where the economy is headed. The goal of long-run economic growth without asset price bubbles is not only achievable, but something we should expect if we put a sound regulatory framework in place and if policymakers are vigilant. The goal of a robust recovery is achievable even if consumers save more, because of the short-run contribution of government spending and the natural forces of inventory rebound and pent-up demand. We do not need bubbles either to pull the economy back to normal or to keep us there.

I want to close by pointing out one implication of this discussion that I have not stressed so far. **Bubble-free growth is not only feasible, and not only more stable and sustainable than bubble-fed growth, it is also better for the distribution of income and for long-run growth.** In a bubble, the people who get in early make bundles of money and the people who get in late lose their shirts. And, on both the up and the down, some of our brightest minds make small fortunes arranging the deals, rather than pursuing potentially more socially valuable careers in such fields as science, medicine, and education.

More importantly, in a bubble-free economy, more of our output will take the form of things that raise productivity, rather than investment goods that turn out to be worthless and consumption goods. Our saving will be higher, so that domestic investment will be financed more by domestic saving, with the result that the fraction of our output that is ours to keep will be greater than before. And, the reorientation of production to investments in the people, products, and energy of the future means we will be able to produce more with less pollution in the years to come. The frequent claim of the President and his economic advisers that the economy will not merely come through this crisis, but come through it even stronger than before, is not just a slogan, but a realistic and attainable goal.

NOTES

1. U.S. Census Bureau, Income, Poverty, and Health Insurance Coverage in the United States: 2007, Table A-1, p. 31, <http://www.census.gov/prod/2008pubs/p60-235.pdf>.
2. In what follows, growth rates and changes refer to the period 1961Q4-1967Q4. Average shares in GDP and the average saving rate are computed over the period 1962Q1-1967Q4. The data on GDP and its components and on the personal saving rate are from <http://www.bea.gov/>.
3. Data on real median family income are from Historical Statistics of the United States: Colonial Times to 1970, series G197, p. 297.
4. Data on the debt are for debt held by the public, and are from <http://research.stlouisfed.org/fred2/data/FYGFDPUB.txt>. I average the data for July of one year and July of the next to obtain end-of-year values.
5. Stock price data are from <http://www.econ.yale.edu/~shiller/data.htm>.
6. Data from <http://www.census.gov/const/www/newresconstindex.html>.
7. Specifically, over the full postwar period, the personal saving rate has averaged 6.9%. Over 2002-2006, it averaged 1.5%. Thus, if the saving

rate went back to its postwar average with no other changes, consumption would fall by 5.4% of disposable personal income (assuming for simplicity that all of the rise in the saving rate came from lower consumption, not the other, minor components of personal outlays). Over 2002–2006, disposable personal income averaged 73.9% of GDP. Thus, consumption would fall by $5.4\% \times 73.9\%$, or 4.0%, of GDP.

8. Pierre–Olivier Gourinchas and H el ene Rey, "From World Banker to World Venture Capitalist: U.S. External Adjustment and the Exorbitant Privilege," in Richard H. Clarida. ed., *G7 Current Account Imbalances: Sustainability and Adjustment* (Chicago: University of Chicago Press), 11–55; Pierre–Olivier Gourinchas and H el ene Rey, "International Financial Adjustment," *Journal of Political Economy* 115 (August 2007), 665–703.
9. The original GI Bill covered the period 1944 to 1956. This spending on the education of World War II veterans preceded the periods of bubble–free growth in the 1950s and the 1960s.
10. Data on mortgage rates are from the Freddie Mac Weekly Primary Mortgage Market Survey,
<http://www.freddiemac.com/dlink/html/PMMS/display/PMMSOutputYr.jsp>,/p>
11. Information is from the Federal Reserve Bank of New York,
http://www.newyorkfed.org/markets/TALF_operations.html.
12. Small Business Administration, Progress Report U.S. Small Business Administration, April 29, 2009,
http://www.sba.gov/idc/groups/public/documents/sba_homepage/sba_100_day_report.pdf.
13. Inventory data are from
<http://www.census.gov/mtis/www/mtis.html>.
14. Data on housing starts are from
<http://www.census.gov/const/www/newresconstindex.html>.

15. Carmen M. Reinhart and Kenneth S. Rogoff, "Banking Crises: An Equal Opportunity Menace," NBER Working Paper No.14587, December 2008.