

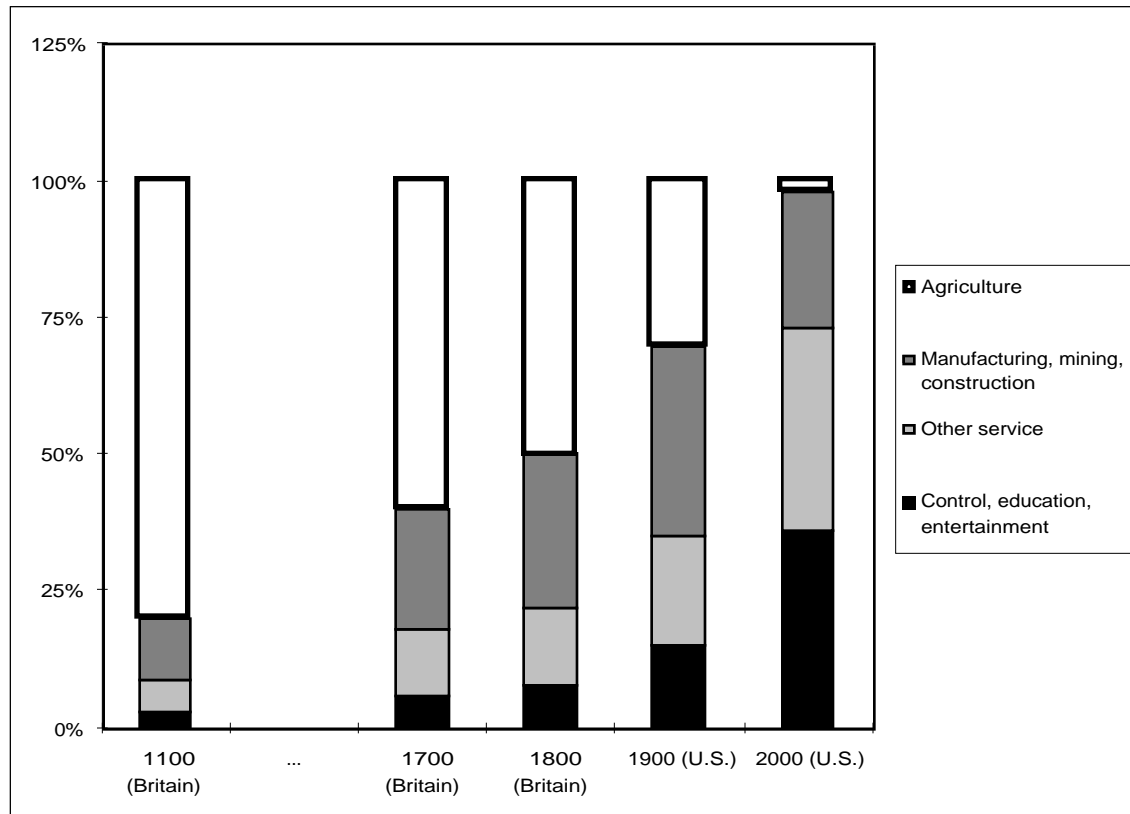
Lecture Notes: Chapter 16: Changes in the Macroeconomy and Changes in Macroeconomic Policy

J. Bradford DeLong

Changes in the Macroeconomy

The structure of the macroeconomy is not set in stone. As time passes the economy changes. And the patterns of aggregate economic activity that macroeconomics studies change too. Consumers' opportunities and spending patterns change. Industries grow and shrink. The role of international trade steadily expand. The role of the government changes too, rising sharply during the New Deal era of the 1930s and the Great Society era of the late 1960s and early 1970s. It would be surprising indeed if the patterns of macroeconomic fluctuations remained unchanged as all of these factors that underpin the macroeconomy change.

Occupational Distribution of the Labor Force



Legend: A thousand years ago almost everyone was a farmer. Even in 1900, nearly one-third of the labor force was made up of farmers. Today the occupational distribution of the labor force is very different. The industries of the industrial revolution—manufacturing, mining, and construction—still employ a quarter of our labor force. But most of today’s workers are in the service sector, many of them in information-intensive services.

Source: Author’s calculations from *Historical Statistics of the United States* and other sources.

Over the past century the structure of modern industrial economies has changed, by some measures at least, more than in the entire previous millennium. Between the year 1100 and the start of the U.S. Civil War in 1860 the share of the labor force engaged in agriculture fell from perhaps 80 percent to perhaps 50 percent. But between the Civil War

of the 1860s and the end of the twentieth century the share of the U.S. labor force engaged in agriculture fell from 50 percent to 2 percent. Today in America there are more gardeners, groundskeepers, and producers and distributors of ornamental plants than there are farmers and farm laborers.

The decline of agriculture is not the only major shift in the economy's occupational and industrial distribution. A century ago perhaps 40 percent of the labor force were engaged in mining, manufacturing, and construction: the non-agricultural industries that still required heavy lifting. Today perhaps 25 percent of the labor force are so engaged. The fall in relative employment in these industries has been offset by a rise in service-sector employment—both traditional services and what one might call information-intensive services as well.

Moreover, a hundred years ago the government's social insurance state was barely in embryo, the tax system was not at all progressive, and most households found it very difficult to borrow in order to see themselves through a year of low income and of unemployment. Today, by contrast, the American financial system loans immense amounts of money to all kinds of consumers. In standard economic theory, that should allow them to smooth their consumption spending. Households should be able to greatly reduce the impact of changes in their incomes on changes in consumption, and so reduce the marginal propensity to consume. Such reductions in the marginal propensity to consume *should* carry along with them a substantial reduction in the size of the multiplier. The same holds true for automatic stabilizers. They appear to exert a powerful stabilizing force on the economy. They were not present a century ago.

Moreover, the past century has also seen the rise of financial automatic stabilizers like deposit insurance. One major factor making depressions (most notably the Great Depression) larger in the distant past was the fear that you needed to pull your money out of the bank and hide it underneath your mattress because your bank might fail. Such sudden increases in the demand for cash during financial panics caused interest rates to spike, investment to fall, and production to decline. Today the existence of a large deposit insurance system has all but eliminated this fear.

Moreover, the pace and direction of material progress changed. Back in the late nineteenth century the bulk of improvements in labor productivity came from capital deepening: the building-up of the infrastructure and the factories of the country. In the

twentieth century the bulk of improvements in labor productivity came from improvements in the efficiency of labor, themselves produced by improvements in science and technology: inventions and innovations in materials production, materials handling, and organization.

The share of economic activity oriented toward the future increased as well. Research and development became not a casual by-product of the rest of economic activity, but an organized branch of industry and a key component of investment. At least partly as a result, labor efficiency growth in the twentieth century proceeded at twice the pace of labor efficiency growth of the nineteenth century. And there are few if any signs that the pace of growth in the early twenty-first century will be slower.

Yet in spite of all of these changes in the structure of the economy, the U.S. economy's business cycle has continued. The patterns of the business cycle we see today would seem very familiar to those who watched business cycles late in the nineteenth century. Everything else in the economy changes, yet the business cycle seems to remain largely the same. There are some signs that fluctuations in unemployment have become smaller in recent years (and many signs that the 1930s saw the extraordinarily violent business cycle of the Great Depression). But the major lesson is that—in spite of a number of structural changes that one would have thought likely to diminish the size of the business cycle—it remains and has remained largely the same.

Business Cycle Indicators

Period	Typical Swing in Unemployment	Typical Swing in Nonfarm Unemployment	Proportion of Time Spent in Recession
1870-1910	2.3%	4.4%	NA
1886-1915	2.9%	4.8%	22%
1901-1930	1.4%	1.9%	30%
1916-1945	7.2%	8.7%	28%
1931-1945	8.1%	10.1%	18%
1946-1975	1.2%	1.3%	19%

1976-1998	1.3%	1.3%	11%
1946-1998	1.5%	1.5%	15%

We should not imagine that change is over: it will continue. We can already see some of the future changes that will transform the macroeconomy in the future.

The increase in financial flexibility that allows consumers to borrow will continue. The increase in financial flexibility will also make it more difficult to read the financial markets--and is thus likely to make monetary policy somewhat more difficult to conduct. International trade will continue to expand. The odds are that international investments will become easier to make, and so the speed with which capital flows across national borders will increase. And labor markets are likely to continue to change as well.

Consumption

Already liquidity constraints--the inability to borrow and the consequent fact that consumption spending is limited by income--play a relatively small role in determining consumption spending in America. They certainly a much smaller role than they played at the beginning of this century, or even early in the post-World War II period.

Economists' theories tell us that if liquidity constraints are absent, then the marginal propensity to consume should be very low. The level of consumption should depend on one's estimate of one's lifetime resources, and be affected by changes current income only to the extent that changes in current income change one's estimate of lifetime resources.

Now economists' theories may overstate the case. Tying your current level of spending to your current level of income is a reasonable rule-of-thumb for managing one's affairs. And it just isn't worth the time spent to do better than one does by using reasonable rules-of-thumb. So the marginal propensity to consume may remain at some noticeable fraction, and increasing ease of borrowing may not lead the multiplier to completely disappear. Nevertheless, the multiplier is likely to grow still smaller over time. It will surely play a smaller role in the economy (and in economic policy, and in economics textbooks) in the future.

Globalization

The future is likely to see international trade continue to expand. Increased trade will further lower the multiplier: a greater portion of changes in domestic spending will show up as changes in demand for foreign-made goods. So the economy at home will be even less vulnerable to domestic shocks that disturb employment and output. On the other hand, increased international integration means that the domestic economy is more vulnerable to foreign shocks: recession abroad that lowers demand for exports will have repercussions at home.

Accompanying the increase in international trade will be an increase in the magnitude of international financial flows as well. The odds are that international investments will become easier to make. And the odds are--as means of international communication increase--that investors in one country will become much more confident in making investments in another. So the speed with which capital flows across national borders will increase.

Yet we have just seen that increased flow of capital across national borders is a potential source of financial crisis and macroeconomic volatility. In the East Asian crisis of 1997-98 a sudden shift in investors' expectations that meant that \$100 billion a year in international capital flows that had financed investment in East Asia was no longer there. That \$100 billion a year had financed the employment of 20 million people working in investment industries, who dug sewer lines, built roads, erected buildings, and installed machines as both domestic and foreign investors bet that there was lots of money to be made in East Asia's industrial revolution. These 20 million East Asian workers had to find new jobs outside of investment industries.

The fall in the value of East Asian currencies has gone a long way to bringing the supply of and demand for foreign exchange back into balance. Falling exchange rates make East Asian goods more attractive to European and American purchasers. East Asia's economies are growing rapidly again

Monetary Policy

The increase in financial flexibility that reduces the multiplier will also make it more difficult to read the financial markets. It is also likely to make it somewhat more difficult to conduct monetary policy. Monetary policy works, after all, because the central bank's open market operations change interest rates. The central bank's open market operations

have large effects on interest rates because the assets traded—Treasury bills on the one hand, and reserve deposits at regional Federal Reserve banks on the other hand—play key roles in finance. There are few substitute assets that can serve the functions that they serve.

But as financial flexibility increases any one kind of asset will become less and less of a bottleneck. There will be more and more ways of structuring transactions. More and more kinds of financial instruments will be traded. Thus in the future it is likely that changes in the supply of Treasury bills will have less of an effect on interest rates than they do today. Open market operations are likely to become somewhat less effective, and monetary policy somewhat more difficult to conduct, in the future.

Will this make much of a difference? Nobody knows.

Inventories

Fourth and last of the changes that we can foresee is that improvements in information technology will improve businesses' ability to control their inventories. Mismatches between production and demand—unanticipated large-scale inventory accumulation or drawdowns—have been a principal source of fluctuations in unemployment and output over the past century. There is reason to think that better information technology will reduce this component of macroeconomic instability.

But how large this reduction will be is, once again, something that nobody knows.

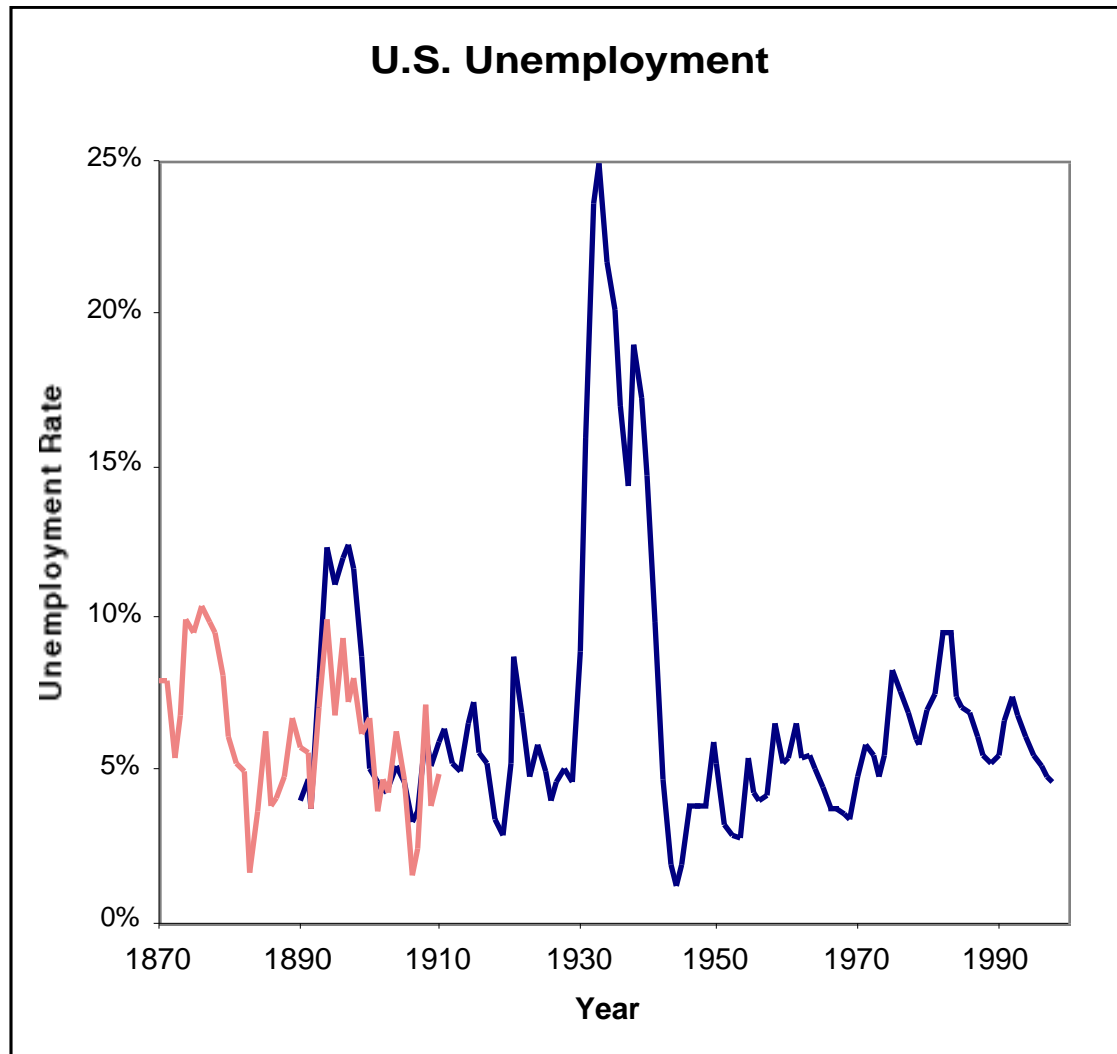
Recap: Expected Future Changes in the Macroeconomy

We expect that the future will bring a continued increase in liquidity. People will find it easier and easier to borrow, hence their spending will be less closely tied to their current income, and the marginal propensity to consume will fall. We expect international trade and financial markets to become increasingly integrated, but at least as far as financial markets are concerned it is not clear that this is a good thing. We expect that over time the power and effectiveness of monetary policy will decline as increased financial options erode the key role played by commercial bank deposits in finance. And we anticipate that firms will become better at managing their inventories, so that inventory fluctuation-driven business cycles will become a thing of the past.

The History of Macroeconomic Fluctuations

We can reach a few solid conclusions about the changing cyclical variability of the American economy. The first and most obvious fact is the extraordinarily large size of the business cycle during the interwar period--the 1920-1940 period that came after World War I and before World War II. The Great Depression that began in 1929 was only the largest of three interwar business cycles. Other major contractions in economic activity took place in 1920-22 and 1937-38.

The Great Depression Relative to Other Business Cycles



Legend: Calculating fluctuations in unemployment according to a methodology consistent with the post-WWII data reveals that past unemployment estimates contained in *Historical Statistics of the United States* overstated the size of the depression of the 1890s.

Source: Christina Romer and *Historical Statistics of the United States*.

A second clear conclusion is that in the post-World War II era the business cycle, measured relative to the size of the economy, has been a little bit but not much smaller than back before World War I. The shrinkage in the business cycle appears to be between

25 and 30 percent. The postwar business cycle is a somewhat smaller animal, but it is surely of the same species.

Thus many of the changes in the economy since 1900 must have roughly cancelled each other out. The decline of agriculture as a share of employment and production (as a rule not very susceptible to the industrial business cycle) has been offset by the rise in importance of relatively acyclical services (also not very susceptible to the business cycle). An increase in the lifespan of capital equipment due to more durable materials might be thought likely to increase cyclical volatility because more of economic activity takes the form of long-term bets on the future. But this has apparently been offset by faster technological obsolescence, which reduces the effective economic life of investments in fixed capital. A smaller multiplier due to reduced liquidity constraints on households has presumably had some effect. But perhaps keeping spending proportional to income remains a useful rule of thumb even as credit becomes widely available, and so perhaps credit availability has not done as much to reduce the multiplier as economists' theories claim.

Economic Policy

Yet if we look a little deeper, we see that business cycles today are not the same animals as they were back before the Great Depression. The fall in the multiplier, the arrival of automatic stabilizers, and the increasing power of central banks have allowed monetary policy to offset many of the kinds of shocks that generated pre-Depression business cycles. The absence of significant stabilization springs from the fact that the increasing power of central banks has created a new class of shocks to the economy: recessions deliberately induced by monetary authorities to curb rising inflation. The post-World War II economy appears to have had fewer small recessions caused by shocks to the IS and LM curves. Stabilization policy has worked, in that it allows for the central bank working in combination with automatic stabilizers to react when the economy threatens to turn down into recession because of any sudden shock.

Before 1916 it was impossible for the U.S. government to have any effect on aggregate demand. Government purchases and net taxes were so small relative to economic activity that no fiscal policy variation short of fighting a major war could materially shift the IS curve, and change equilibrium real GDP. The pre-World War I government lacked, until

the founding of the Federal Reserve in 1914, the ability to affect the level of interest rates. Neither fiscal stabilization policy nor monetary stabilization policy as we know them today was possible back before World War I.

By the start of the post-World War II era the power of stabilization policy and the government's commitment to manage aggregate demand were both firmly established. World War II left the United States with a federal government that annually spent about one-fifth of GDP, and a government committed to countercyclical fiscal policy. Back before World War II it had been a commonplace of political and policymaking discourse that taxes should be raised and economies in spending achieved to try to balance the budget in a recession. By the 1950s this doctrine was dead: the automatic stabilizers of the federal budget were in place.

The emergence of a significant progressive income tax made government revenues substantially procyclical, and the emergence of unemployment compensation, food stamps, and welfare led government spending to have a substantial automatic countercyclical component as well. By the 1960s the federal government believed that it ought to be undertaking countercyclical discretionary fiscal policy as well (even though it has never been able to succeed in doing so). In monetary policy a similar shift had been accomplished near the beginning of the post-World War II period. By the early 1950s the U.S. Treasury and the Federal Reserve had agreed--in their Accord of 1951--that the principal task of the Federal Reserve was to use monetary policy to stabilize the economy.

There is no doubt that the Federal Reserve has attempted to use monetary policy, within the limits placed on it by long and variable lags, to stabilize the economy and to moderate recessions. Both overall survey studies and detailed studies of cases like the interest rate cuts that followed the stock market crash of 1987 teach the lesson that the Federal Reserve had considerable success in cutting short recessions and in accelerating growth in the early stages of the subsequent economic expansion.

There is no doubt that automatic stabilizers as well have played a role in moderating the business cycle. Yet a third innovation in economic policy--deposit insurance--has had effects that are harder to quantify. However, as Christina Romer observes, "the obvious starting point is the observation that financial panics were ubiquitous before World War I and almost nonexistent since World War II... there were major panics in 1890, 1893,

1899, 1901, 1903, and 1907--all of them the source of substantial contractionary pressure on real GDP. Perhaps the effects of deposit insurance have been large as well: we are not really sure.

Prospects

Perhaps the more recent era shows how much more stable our economic system can be with successful institutions that understand the limits of their power. But it is not clear whether the growth of aggregate demand has been smoother because economic policy makers have recognized the limits of what they can achieve, because of the skill of Paul Volcker and Alan Greenspan, because of better economic theories to guide policy, or simply because of good luck. It is clear that every time in the past a "new era" or a "new economy" has been proclaimed, the same old business cycle has soon returned.

The expansion of the 1920s led economists to hope that the newly-constructed Federal Reserve had learned how to stabilize output by eliminating the fluctuations in interest rates that caused financial crises. Irving Fisher, the most prominent monetarist of his day, went as far as to claim on the eve of the 1929 crash that stock prices had reached a "permanent and high plateau." The prolonged expansion of the 1960s led the Department of Commerce to change the name of its *Business Cycle Digest* to the *Business Conditions Digest*, for it seemed silly to them to have a publication named after a phenomenon that no longer existed. Both President Eisenhower's and President Johnson's CEA Chairs, Arthur Burns and Walter Heller, agreed that there had been substantial progress in economic science and policymaking toward economic stability that opened up new dimensions of political economy.

One can be optimistic about the future of macroeconomic policy. One can count up all of the lessons that economists and policymakers have successfully learned over the course of the twentieth century.

One can be especially optimistic from the perspective of the United States today. For from that perspective macroeconomic policy appears remarkably successful. Unemployment is very low, at levels that have not been seen in a generation. Inflation is also low, at levels that have not been seen in a generation either. The stock market is at record highs, both absolutely and relative to corporate earnings and dividends--suggesting that the market at least expects a very bright future. The increase in income

inequality that was an extremely worrisome social trend in the United States appears to have stopped (even though it has not reversed itself). And in recent years *measured* productivity growth has been rapid, suggesting that the political claims by Clinton administration officials in the early 1990s that deficit reduction would lead to a high-investment, high-productivity-growth, high-income-growth recovery were largely correct.

Nevertheless, it is likely that the long expansion of the 1990s will be followed by a recession. And what will follow in the way of management of the business cycle is ours to decide.

Lessons Unlearned: High European Unemployment

Europe at the end of the 1990s is not in a Great Depression. Nevertheless, unemployment rates in western Europe at the end of the 1990s are within hailing distance of the rates achieved during the Great Depression. Unemployment averages ten percent in the zone of countries that now share the common currency of the euro.

Up until the end of the 1970s, unemployment in western Europe had been lower--sometimes substantially lower--than unemployment in the United States. But starting in the 1970s European unemployment began to ratchet upwards. European unemployment rose during recessions, yet it did not fall during economic expansions. During the recession of the Volcker disinflation at the start of the 1980s, western European and U.S. unemployment rates were about equal. But during the later 1980s and 1990s the trend of U.S. unemployment was down: the trend of European unemployment was stable or upward.

In the U.S. it is possible to understand the comovements of unemployment and inflation over 1960-2000 using the standard Phillips curve. The Phillips curve shifts out in the 1970s as everyone begins to expect higher inflation and demographic factors cause the natural rate of unemployment to rise. The Phillips curve shifts back in the 1980s and 1990s as people regain confidence in the Federal Reserve's commitment to low inflation and as changing demographic factors cause the natural rate of unemployment to fall. The story does not fit badly. Movements in the expected rate of inflation reflect changes in the

economic policy environment. Movements in the natural rate of unemployment are relatively small, and can be linked to plausible factors.

In western Europe, by contrast, the accelerationist Phillips curve *never* fit the historical experience very well. Each policy episode from 1970 on--supply shocks, the Volcker disinflation, the recession of the early 1990s--seemed to shift the Phillips curve further out, and to further raise the natural rate of unemployment. It seemed as if this year's natural rate of unemployment was equal to whatever unemployment had happened to be last year.

The dominant view expressed in Europe in the early 1990s was that high European unemployment was the result of labor market rigidities. Europe possessed laws, restrictions, and regulations that made it too difficult for firms to hire new workers cheaply at a relatively low wage, and too difficult for firms to fire workers (and thus forward-looking firms are reluctant to hire workers. Thus it was too expensive to conduct a labor-intensive business in Europe or to adjust to changes in the economic environment.

According to this dominant view, high unemployment in Europe is an *equilibrium*. Unemployment was what economists call "classical": It arises not from any deficiency of aggregate demand, but simply from the fact that the state's regulations keep the labor market from clearing. The state's regulations boost the cost of employing the marginal worker far above the extra revenue the typical firm would gain from employing an extra worker.

But the "rigidities" in the European labor market were stronger in the 1960s--when European unemployment was very low--than they are today. It is not that the natural rate of unemployment in Europe has always been high, it is that each additional adverse shock that increases unemployment seems to increase the natural rate as well. Thus many economists who have examined European unemployment dissent from the conventional wisdom of the editorial writers and the politicians. They tend to see western Europe not as locked into high unemployment, but as in a reversible situation. Just as increases in unemployment in the 1970s and 1980s raised the natural rate of unemployment in Europe, so decreases in the rate of unemployment in the 2000s would in all likelihood lower the natural rate of unemployment in Europe.

Lessons Half-Learned: Japan

The standard analysis of how the Japanese economy entered its present period of stagnation is straightforward. The Japanese stock market and real estate market rose far and fast in the 1980s--to unsustainable "bubble" levels. And eventually the market turned, and both the real estate and stock markets collapsed.

When stock and real estate prices collapsed, it was discovered that lots of enterprises and individuals had borrowed heavily against their real estate and security holdings, putting up their real estate and their stocks as collateral. After the collapse, not only were those who had borrowed heavily bankrupt, but the banks and other institutions that had loaned them money were bankrupt as well: the value of the collateral they had accepted would no longer suffice to allow them to repay *their* creditors.

One problem was that no one was exactly sure which institutions were bankrupt--which institutions had liabilities in excess of their assets. Thus no one was anxious to lend money to anyone: you might well never see your money again if the organization you loaned it to was one of the ones that had extended itself during the bubble economy of the late 1980s. A second problem was regulatory forbearance: the belief that the best way to solve the problem was to pretend that it did not exist, try to let business go on as usual, and hope that a few good years would allow all of the institutions that were "underwater" to make enough in profits that they could repay their debts even given the low value of the collateral that they had accepted.

These two problems together meant that investment spending was depressed. Financial institutions exist to channel money from savers with purchasing power to businesses that can use that purchasing power to expand their capital. But in the aftermath of the collapse of the bubble, no one really wanted to lend--for you could not know whether the organization wanted your money to invest, or to try to paper over some of its previous losses.

The situation was analogous to the collapse of investment spending in the Great Depression, where the chain of deflation and bankruptcies had had similar effects. The collapse of the Japanese financial bubble of the 1980s depressed consumption and investment spending. Banks' and other institutions' large bets on the real estate market meant that the collapse of the bubble put them "underwater"--with assets and lines of

business that were worth less than the debt they already owed that they had borrowed to speculate in real estate. Who will invest in a business--or a bank--if you fear that your money will be used not to boost profitability but instead to pay back creditors who had loaned to the business before you?

Thus Japan has fallen into a decade of economic stagnation. Growth has been almost zero. Unemployment has risen to levels previously unheard-of in Japan. The IS curve has shifted back far to the left. And nothing seems to correct it: even extremely low nominal interest rates are not sufficient to boost investment and aggregate demand. And for nearly an entire decade Japanese economic growth has been extremely slow and stagnant.

What should economic policy makers do in such a situation? The answer to what you should do in order to recover from such a state of depressed aggregate demand is "everything." You should have the government run a substantial deficit (although, as E. Cary Brown of MIT pointed out in the 1950s, it requires truly awesome deficit spending--on the order of deficit spending in World War II--to reverse a Great Depression like the U.S. in the 1930s or a Great Stagnation like Japan today). You should have the central bank push the interest rate it charges close to zero (to make it very easy and cheap to borrow money).

If that isn't enough you should try to deliberately engineer moderate inflation. If demand is depressed because people think investing in corporations is too risky, change their minds by making the alternative to investment spending even more risky. And if the alternative is hoarding your money in cash, then eat away a share of its real purchasing power eaten away every year by inflation.

So far Japan has changed its fiscal policy to run big deficits (but, as any student of the Great Depression would suspect, they haven't been big enough). Japan has lowered its short-term safe nominal interest rates to within kissing distance of zero. But these haven't done enough good. The lessons of the Great Depression have been only half-learned.

Lessons Half-Learned: Moral Hazard

Even in the United States, it seems as though some of the lessons on economic policy taught by the past century of experience have been only half-learned. Consider the

problem of dealing with financial crises: those moments when large and highly-leveraged financial institutions have or are about to fail, and when there is a genuine fear that a chain of bankruptcies is about to be triggered.

In such a situation the fear that the organization to which one might lend will fail will greatly retard lending. The flow of funds through financial markets will slow to a trickle, as savers conclude that keeping their wealth close at hand in safe forms is a much better opportunity than lending it to organizations wishing to lend that are probably bankrupt. Thus such a financial crisis is likely to see the IS curve shift far and fast to the left as the level of investment spending collapses. If this leftward shift in the IS curve is not stemmed, then there will be a recession and the financial crisis will rapidly become worse as businesses that were solvent at normal levels of production and sales find that the fall-off in demand has bankrupted them.

What to do in such a situation was first outlined by Bagehot a century and a quarter ago. The government needs to--rapidly--close down and liquidate those organizations that are fundamentally bankrupt. If they would be bankrupt even if production and demand were at normal levels relative to potential, then they should be closed. The government needs to lend money--albeit at a high, unpleasant, penalty rate--to organizations that would be solvent if production and demand were at normal levels, but that nevertheless suffer a cash crunch now.

The key is twofold: Government support is necessary in order to prevent a deep melt-down of the entire financial system. Government assistance must be offered on terms unpleasant enough and expensive enough that no one in advance wishes to get into a situation in which they need to draw on it. Moreover, the government must accept that its ability to distinguish between these two classes of institutions is imperfect, and that it will inevitably make mistakes.

Yet more and more in the political discussion over economic policy one hears the claim that government provision of liquidity and support in a financial crisis is dangerous--that it causes "moral hazard" because organizations place riskier and riskier bets counting on government support to bail them out if things go wrong. The right policy in a financial crisis is a completely hands-off one. A century and a quarter of experience suggests that this is only a half-truth. Moral hazard is a problem, but so is a Great Depression. The balancing point is hard to determine: bank and financial regulators must impose rules that

restrict the growth of moral hazard, assistance in times of financial crisis must be expensive and painful to the organization drawing on the government, and yet the worst outcome—a freezing-up of the financial system and a severe recession—must be guarded against. To focus on only one of these three rather than balancing between them is to recommend bad economic policy.