In the last quarter of 1999, the U.S. economy was expanded at an extraordinary 6.9 percent annual rate. The official unemployment rate had fallen to 4 percent, the lowest it had been in three decades. Inflation was all but non-existent. Indeed, the economy has been expanding at a rapid clip since 1994 – averaging close to 4.3 percent growth per year for the last half of the 1990s. America has not enjoyed such prosperity since its «Glory Days» of the first quarter century after World War II.

Throughout much of Europe and Japan, the picture is not anywhere near as rosy. In 1999, while the U.S. economy was expanding at 4.2 percent, the average growth rate in Europe was only 1.6 percent and poor Japan could not muster a growth rate of even one percent. The official European unemployment rate was nearly two-and-a-half times higher than America’s, with Germany, France, and Italy seemingly stuck in double-digits.

Why is the U.S. economy performing so very well? And what can Europe learn from the American experience? The answers I will provide to these questions may be quite startling to a European audience, given what has become the conventional wisdom in both the U.S. and across the Atlantic.

In a nutshell, the conventional wisdom suggests that America’s renaissance economy is due to a combination of conservative fiscal, monetary, and structural policies adopted since the middle of the 1990s. In particular, the American obsession with reducing government deficits and building up a large fiscal surplus is credited with increasing the aggregate savings rate. Presumably, this has led to lower interest rates and an explosion in productivity-enhancing investment. The adroit handling of inflation by the Federal Reserve Bank has also kept interest rates low and stimulated a spectacular stock market boom – leading, in turn, to both new capital spending and strong aggregate demand. As for structural factors, the standard argument posits that the weakening of trade unions and the retrenching of welfare programs and the social safety have been good for the economy. They have created a »flexible« labor market conducive to the creation of millions of new jobs. Meanwhile, the deregulation of equity and credit markets has fostered massive venture capital funds that underwrite »dot.com« companies by the thousands. If only Europe were to follow the American lead in these areas, the logic goes, it too could have faster growth and lower unemployment.

On the surface, the conventional wisdom seems incontrovertible and the timing of the U.S. recovery seems exquisite. After all, when federal government deficits were climbing during the 1980s and 1990s, growth slowed. Only when deficits were forced down under the Clinton Administration did the current economic boom begin. When inflation was rampant, growth was stymied; when inflation was brought firmly under control by the U.S. central bank, America’s gross domestic product (GDP) soared. When unions and the social safety net were strong, the economy stumbled; when union membership plummeted and government reforms limited unemployment benefits and welfare, unemployment declined. What more evidence could you possibly need to explain America’s economic renaissance?

As convincing a story as this might seem, it turns out to be largely wrong and its policy implications mistaken. Deficit reduction has had very little to do with the current economic recovery, nor has monetary policy. And while »flexible« labor markets may have contributed to employment growth and lower unemployment, it has come at the cost of unsettling increases in wage and income inequality. Venture capitalists have played a role, but the Wall Street boom began because of the success of new high tech companies, not the other way round. The implications are clear. An obsession with building up the federal surplus to the point of paying off the entire federal
debt in the next fifteen years – and the policy of weakening the social safety net even further – will paradoxically end up sabotaging growth over the long run and make income inequality even worse.

There is indeed an American model that might have a few lessons for Europe and Japan, but it is not the conventional model that is now being so heavily advertised as the golden road to prosperity. What really turned the American economy around in the 1990s was the long delayed productivity premium from investments in information technologies pioneered through public investment in basic research, education and training, and infrastructure – and brought to market by private companies. Productivity growth initiated in the high tech sector has turned budget deficits into surpluses, tamed inflation, and made it possible to contemplate another era of true prosperity.

A Little American History

To begin to understand the U.S. economic recovery, it helps to understand a little American economic history. From the end of World War II until the early 1970s, America reveled in its Glory Days. The economy grew so swiftly that by 1973 the typical family had more than twice as much income as one in 1947. On the strength of the economy and Lyndon Johnson’s »War on Poverty,« those at the bottom of the economic ladder enjoyed improvements in income that were proportionately greater than those of the most wealthy. As a result, we experienced economic growth with at least a modicum of improved social equity. There was great turmoil in the land, but its root cause was political, not economic. In the midst of the great civil rights struggle; the assassinations of John and Robert Kennedy, Martin Luther King, and Malcolm X; the tragedy of Vietnam; and the persistent underlying fear of nuclear obliteration, few worried about the overall strength of the economy. Growth seemed assured and the nation was at least trying to address the question of social inequality.

Then, quite suddenly, the bottom fell out. The end of the Glory Days began with the 1973 oil embargo, but even after gas and oil prices stabilized and then fell, the economy continued to suffer. Over a period of more than three decades, the nation’s growth rate would trend inexorably downward, from 4.4 percent in the 1960s and 3.2 percent in the 1970s, to 3.0 percent in the 1980s, and finally only 2.3 percent in the early 1990s.

Unemployment would rise as growth slowed.

The level of average wages and family incomes stopped growing and, for many, declined. Inequality in earnings, income, and wealth – the gap between the best and the worst off among us – intensified without letup.

The top fifth of all families continued to see their incomes rise by 1.3 percent a year, but the
Experts, while never quite understanding why the Glory Days came to such an abrupt end, worried that we had lost our competitive edge and wondered if we could ever catch up with the Europeans, let alone the Japanese. American productivity growth had slipped to less than one percent a year. Ordinary people told journalists and pollsters, and whoever else would listen, of their growing sense of insecurity and of their fears for the future – if not for themselves, then for their children.

By the early 1990s, many had come to the conclusion that we Americans had better get used to slow growth for it was now going to be, more or less, a permanent condition of life for most of us. We would do well to learn to accept modest improvements in the economy, counseled M.I.T.’s distinguished economist Paul Krugman in his popular tract »The Age of Diminished Expectations«. The much admired journalist Jeffrey Madrick admonished us to begin to deal with »The End of Affluence«.

And, then, just when we were on the verge of accepting slow growth as our inevitable fate, the economy surged again. The first inkling of a revival was felt in the mid-1990s and for the rest of the decade we enjoyed a renaissance economy that bordered on giddy exuberance. The nation’s Gross

America was undergoing a »Great U-Turn« in living standards by almost any relevant measure – hourly, weekly, and annual individual earnings; household income; the racial income gap between African-Americans and whites; the incidence of poverty; and the distribution of personal wealth. No other market economy, not even in the newly-developing world, and no socialist country, underwent such a sudden and dramatic surge in inequality. By the 1990s, the richest one-tenth of American households had a median income more than six times the income of the poorest tenth. No European country evinced such high degree of inequality (see figure 5).

1. Edith Rasell, Barry Bluestone, and Lawrence Mishel, The Prosperity Gap (Washington, D.C.: Economic Policy Institute, 1997), pp. 9, 13, 15. In addition, a recent study by the Washington-based Center on Budget and Policy Priorities reports that in New York State, where inequality is the highest among the fifty states, an average family with children in the top fifth of the income distribution now receives 19.5 times the income of the average family in the bottom fifth, up from 12.6 times in the mid-1980s (which was bad enough!). See Kathryn Linar and Elizabeth C. McNichol, Pulling Apart: A State-by-State Analysis of Income Trends (Washington, D.C.: Center on Budget and Policy Priorities, December 16, 1997), Table 2.
Domestic Product (GDP) expanded by 3.7 percent in 1996 and then turned in spectacular back-to-back 4.5 and 4.6 percent performances in 1997 and 1998. By 1999, growth was beginning to be reminiscent of the post-war Glory Days, continuing at better than 4 percent. With rapid growth, unemployment began to fall, reaching 4 percent at the beginning of the new century.

In President Clinton’s famous phrase, »we are growing the economy« once more – at a pace considerably faster than any expert or policy maker could have expected, predicted, or counseled, even a few years ago. At the very root of all of these improvements was a recovery in productivity growth – output per worker – far beyond what anyone could have imagined would again be feasible.

**The Conventional Wisdom**

The mechanics of this virtuous growth cycle – what the late Bennett Harrison and I call the »Wall Street model« – have been elucidated best by Alan Greenspan, Chairman of the Federal Reserve Board. It all begins with what is now seen as

the successful government-led war against inflation and ensuing low interest rates. As Greenspan testified before the Joint Economic Committee in mid-1998, »The essential precondition for the emergence, and persistence, of this virtuous cycle is arguably the decline in the rate of inflation to near price stability« – which, in turn, provides the precondition for a stock market boom.7

Bringing inflation under control and augmenting aggregate savings by running fiscal surpluses allows interest rates to fall. This stimulates more capital investment, but most importantly provides a huge incentive for wealth holders to invest in equities. As the value of financial portfolios increases, owners of stock feel wealthier. This leads to more discretionary spending, mostly by those of means, given their disproportionate ownership of stocks and mutual funds. Increased spending then leads to expanded output, higher employment, and further investments in productivity-enhancing capital – more machines, more factories, more office towers. In turn, more productive capital means higher corporate profits. These ratify the higher stock prices and send them soaring even higher. And so it goes. In the process, workers and families on Main Street get a share of the growth as higher employment levels and higher productivity permit faster wage growth and rising family incomes.

What we might term the Wall Street/Pennsylvania Avenue Policy Accord gets the credit for this wonderful turn of events. The most important

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element of the new Accord was the balancing of the federal budget. The White House and the Congress committed themselves in principle and then in practice to bringing government spending into line with government revenue – and, having done this faster than expected, moved on to accruing a large budget surplus. This, according to the new conventional wisdom adds to the national savings rate, reduces competition for consumption goods (reducing upward pressure on prices), and reduces competition for investment funds (by taking the government out of the borrowing business). This combination of factors keeps inflation under control, drives down long term interest rates, and presumably stimulates growth.

But the Accord’s anti-inflation mission involves more than a balanced budget. A second front in the war on inflation was a renewed and heightened commitment to free trade. This took the form of passing the North American Free Trade Agreement (NAFTA) with Canada and Mexico and legislating a host of other bilateral and multilateral tariff reductions as well. While these were enacted ostensibly to increase U.S. exports, their real objective was to keep downward pressure on wages and prices by spurring even more global competition.

Increasing »flexibility« in the labor force became the third element in the Accord. Arguing that strong trade unions, periodic hikes in minimum wage laws, and overly generous welfare programs coddle labor and drive up wages, the Accord frowned on any form of labor law reform that might help unions organize more workers. Minimum wages were increased, but by a trivial amount. Welfare reform focused on forcing millions into the paid labor force. These policies were sold to the White House and the Congress with different rationales, but the single underlying theme behind all of them was to encourage growth by increasing labor market »flexibility« and thereby undermining inflation.

Reinforcing all of this was the Federal Reserve’s commitment to backstopping all the fiscal side effects at controlling inflation. The Federal Reserve Board gained the confidence of Wall Street by demonstrating its vigilance at maintaining price stability, raising short term interest rates in 1994 and again in 1995 as an inoculation against inflation. Since then, and until earlier this year, the Fed refrained from raising interest rates even as the unemployment rate came down below a level considered unsafe just a few years ago. Now it is considering a series of short-term rate hikes to slow the economy, even with little sign of serious inflation in sight.

This new Accord – based on balanced federal budgets, free trade, flexible labor markets, and a firm monetary policy – seems to have worked like a charm. As America continues to pull ahead of Europe and Japan in terms of growth and employment, the wisdom of the Wall Street model is being trumpeted by an increasingly large and vocal chorus of economists, policy makers, pundits, and journalists alike not only in the U.S. but abroad. As acceptance of the new paradigm grows, we are being cautioned that any deviation from its precepts or the government policies that support it could be fatal to continued prosperity. Keeping Wall Street happy is not only a road to prosperity; it is now seen as the only road. All others are detours to economic stagnation.

The Real Sources of Long Run Growth

So have we finally discovered the true path to sustained growth and renewed prosperity in fiscal and monetary conservatism and »flexible« labor markets? All the signs look positive. But impressions can be deceiving. Contrary to what has become nearly universal opinion, there is mounting evidence that America’s economic renaissance has had little to do with the Wall Street model or all of the accommodations the government has made to conform with it. Here, in summary, is my brief against the new conventional wisdom.

First, the underlying theory behind the Wall Street model is itself badly flawed and it has cause and effect reversed. Low inflation no doubt contributes to faster growth by providing a stable financial base for investment. But low inflation did not come about because we balanced the federal budget, passed NAFTA, refused to pass labor law reform, or raised short term interest rates early in the decade. What caused inflation to disappear in the late 1980s and throughout the 1990s was a return to high productivity growth that was long in coming, augmented by extraordinary low oil
prices and a labor force numbed by years of employment insecurity.\textsuperscript{8}

Understanding the path of productivity growth during the past half century and what caused it is crucial to this story. Just as productivity growth seemed to instantaneously vanish at the beginning of the 1970s, it seems to have magically returned by the mid-1990s. Rising productivity, and not Wall Street per se, has permitted businesses to enhance their profits without having to raise prices. This has been the main reason that stocks have soared in value and the key reason why inflation has vanished. Similarly, faster growth based on revived productivity has been the chief reason that federal budget deficits have disappeared, improving the national savings rate. The much acclaimed balanced budgets and vigilant Fed action provide little more than the felicitous incantations over an already recovering economy. Even if we had not so quickly reduced budget deficits, even if we had not passed NAFTA, even if we had legislated labor law reform and hiked the minimum wage more aggressively, and even if the Fed had practiced restraint in boosting short-term interest rates in the early 1990s, we would have had pretty much the same economic growth spurt we have experienced since the middle of the 1990s.

If renewed productivity growth is the real root cause of economic growth, where did it come from? If Wall Street did not establish the preconditions for a productivity renaissance, what did?

The major reason for the surge in growth can be found in the long awaited coming of age of the information revolution, which is now spreading from one sector of the economy to another and finally boosting productivity and growth in its wake, even in the long-stagnant service sector.

The newest productivity data indicate that companies have been working their way down the »learning curves« of a host of new technologies, gradually introducing organizational and other complementary institutional changes needed to take fuller advantage of the new hardware and software. All of this predates balanced budgets, NAFTA, welfare reform, and the Fed’s vigilant anti-inflationary policy. It predates the implementation of the Wall Street model. Indeed, productivity growth bottomed out in the 1970s and began to improve during the 1980s – when federal deficits were still mounting and before NAFTA and welfare reform were passed.

The history of technological innovation teaches us that what is happening now is not at all unusual and that it can take decades for ideas to be translated into practical applications and diffuse throughout the economy, generating improved productivity and faster growth. When revolutionary new technologies are first introduced into an economy, they actually reduce productivity and growth for decades. The process of technological innovation does not run in only one direction, from the laboratory to the workplace. There are frequent feedbacks from the need to solve problems and make applications work back into the design stage, eventually improving what had

Figure 8:
Annual Productivity Growth in the American Non-Farm Business Sector, 1960–1999


8. We might add that another link in the Wall Street Model’s virtuous cycle might also be questioned. According to the model, low interest rates – the legacy of price stability – are responsible for the explosion in stock market valuations. But new research suggests that the stock market might have reached ever new highs for a very different reason: simple demographics. With the baby boom generation reaching prime age in the 1990s, one would expect a torrent of investment in the stock market and that is what we got. Boomers are behind the massive expansion in pension-fund assets which doubled to $5.2 trillion in 1999 from its 1992 level. Over the next five years, boomers are expected to account for $9 trillion of the $10 trillion growth in total investment funds. See Kimberly Blanton, »Baby Boomers Index,« The Boston Globe, April 23, 1999, p. E1.
begun as practical tinkering. Such lags and feedbacks are the norm, not the exception. The point is that the always-promised, but seemingly elusive, productivity premium from information technology is finally being realized, and would have been forthcoming even if fiscal and monetary policies had not been focused so completely on price stability and raising savings rates.

It is important to recognize what initiated the information revolution in the first place. One might think that it was the brainchild of scientists and engineers toiling away in their university laboratories and in the research facilities of private business. This is generally true, but the initiative for this research and a good part of the funds that underwrote it came from the government. It was the need for massive computing power to run modern defense systems that helped lead to the construction of powerful mainframe computers. It was the need for miniaturized guidance systems for ICBMs and NASA rockets that led to the development of microprocessors and the software that they use. It was the federal government’s investment in the ARPANET that led to the modern day internet and the World Wide Web. In the private sector, firms believed they had to invest in the new technologies even though the payoff was unsure and perhaps many years away. Being left behind in the technology derby, corporate leaders feared, could leave a company out of the race altogether.

Without these investments, today’s ubiquitous E-commerce would never have come about – or would have been delayed by perhaps decades. It is no wonder that the U.S. is doing so well today in computers and information technology relative to even our most advanced trading partners. The federal government’s investments in these technologies, mainly through the Department of Defense, have put American firms from Intel and Microsoft to Sun, Dell, Apple, Hewlett-Packard, and Compaq well ahead of the race altogether.

Even Europe has learned this lesson. For a long time, U.S. government investments in military aircraft provided the basic and applied research for American dominance, indeed even hegemony, in commercial aircraft. Europe answered with large-scale government subsidies to the French-German-British-Spanish Airbus consortium and to fly-by-wire technologies. As a result, Airbus is now winning sales away from Boeing at an accelerating rate. Economists have found that each dollar of federal basic research leverages an estimated $3 of private investment leading to faster economic growth. This has been good for the U.S. historically and has been good for Europe.

While historians have been responsible for helping us to understand technology’s role in economic growth and government’s role in technology, a group of young economists has been taking these historical insights and creating a rigorous new model of growth which rejects many of the notions in the Wall Street model. Instead of seeing economic growth coming mainly from piling up larger and larger stocks of factories,

Figure 9: Investment of the US Government in Non-Defense Physical Capital, Education and Research (as percent of GDP)


the New Growth Theory sees technological innovation as the primary engine of growth. This alternative growth theory is consistent with a very different set of government policies.

As Paul Romer, one of the originators of the New Growth Theory has written, if we subscribe to the new model, »We will be able to rejoin the ongoing policy debates about tax subsidies for private research, antitrust exemptions for research joint ventures, the activities of multinational firms, the effects of government procurement, the feedback between trade policy and innovation, the scope of protection for intellectual property rights, the links between private firms and universities, the mechanisms for selecting the research areas that receive public support, and the costs and benefits of an explicit government-led technology policy.«

It is precisely such public intervention in the economy – more federal spending, more tax

Figure 10:
Total Discretionary Spending of the US Federal Government (as percent of GDP)

Source: U.S. Congressional Budget Office.

Figure 11:
The 21st Century Main Street Model Virtuous Cycle
incentives for research, more private-public sector ventures, and more guidance of technology policy – that the proponents of the Wall Street model vociferously oppose, in the interest of balancing the federal books and sending reassuring signals to the financial markets.

Failing to heed this lesson, America may now be on the verge of sabotaging its future growth. To build up massive budget surpluses, the federal government has been cutting its funding of basic research, public infrastructure and even education and training, as a share of GDP. Bill Clinton’s recent announcement of more money for the National Science Foundation and DOD research hardly puts a dent in this downward trend in government funding of basic research.

Since 1979, the share of federal investment in public non-defense infrastructure, education, and research has fallen steadily. And such investments are destined to decline further in the new millennium under the Clinton budget and the Congressionally imposed spending caps. This spending is part of what the government calls «total discretionary federal funding» – that is the budget excluding Social Security, Medicare, Medicaid, and interest on the federal debt. Back in 1968, discretionary funding was 13.6 percent of GDP. Even as late as 1986, it amounted to 10 percent of GDP. Twelve years later, it was down to 6.6 percent and is scheduled to fall to only 5.3 percent by 2004 according to the latest budget estimates. Hence, by the middle of the next decade, the federal government’s role in underwriting economic activity will have declined by more than half. The steepest declines in the budget are for precisely what has been so important to growth in the past. According to the National Science Foundation (NSF), the federal share of support for the nation’s R&D first fell below 50 percent in 1979, and it remained between 45 and 50 percent until 1988. After then, it fell steadily, dropping from 44.9 percent in 1988 to less than 27 percent in 1999. This is the lowest it has ever been since the start of the time series in 1953.

We may not see the impact of this neglect of public investment for a number of years to come, but if history has anything to say on the subject, we will pay for our fiscal conservatism dearly. What technological innovations might be missed or postponed, we will never know. But it is clear from an increasing amount of economic research that the single most important factor behind long cycles of prosperity is the level of technological advance – not whether we balance the federal budget.

Moreover, if growth does slow down, inequality will grow even worse. In the immediate postwar period, the gap between the rich and the poor was kept in check by strong unions, higher real minimum wages, and weak global competition. In the U.S. today, the only factor that is keeping the gap between the rich and everyone else from exploding is a red-hot economy. Hence, if we fail to sustain growth as a consequence of our fatal obsession with conservative fiscal and monetary policy, we will surely sabotage equity along with prosperity.

The Key Role for Demand

The need for an enlightened fiscal and monetary policy is critical for another reason: technology by itself can never bring about more growth. The New Growth Theorists have focused almost all of their attention on the supply side of the economy. They are concerned with promoting productivity growth by boosting the chances of accelerating technological innovation. But attention is also needed on the demand side of the market. Without the expectation of growth, innovation will be slow to evolve. Low expectations become self-fulfilling prophesies.

In direct contrast to the Wall Street model, the government has a positive, activist role to play in stimulating aggregate demand. It can do this by encouraging wage growth through stronger trade unions, regular increases in the minimum wage, and deliberate anti-poverty programs. Spending more on education, on highways, on health care can help as well. Only with the anticipation of sufficient sales of new goods and services is there adequate incentive for private sector innovation and investment to take place at levels sufficient to maintain faster growth. By marrying the New Growth Theory’s passion for technology with the older Keynesian Theory’s admonition that government can help sustain aggregate demand, we have the building blocks for a 21st Century «Main Street» model of growth with equity – growth based on improving the lives of those who live on
main street, not just those who gain their fortunes from Wall Street.

A combination of innovative investment plus a commitment to running the economy as hot as possible – amounts to a viable alternative to the Wall Street model. If we can make the transition from Wall Street to Main Street, we can sustain three percent or better economic growth and assure that this faster growth is more equitably shared.

Will following this new Main Street model of growth ultimately permit us to repeal the business cycle, providing year-in and year-out improvements in our standard of living? That would be too much to ask. Volatility in the economy is here to stay, for successful innovation does not flow smoothly but comes in spurts. We cannot expect that every time the economy begins to slow some new invention will come along in the nick of time to buoy productivity and enhance aggregate demand. What the new Main Street model will do is lift the nation’s average growth rate so that periodic softness in the economy represents a decline from loftier heights and promises to make both the highs and the lows more fairly shared.

**Summing Up**

What we need in America and in Europe is a full-scale, broad-ranging debate over policies that contribute to growth with equity. Overly cautious monetary policies; fiscal policies that shortchange R&D, infrastructure investment, and education and training; and the neglect or active undermining of laws and regulations that could improve wages and labor standards have been at the center of the new Wall Street model. Rather than equipping people with the means and the undergirding institutional supports for coping with a world of hypermobile capital and chronic uncertainty about the future, government has been promoting the low road of ever more brutally competitive capital and labor markets. The illusion that this has contributed to prosperity rather than threatened its sustainability needs to be fully understood and challenged.

The Main Street model focuses on public and private investment and the sustaining of aggregate demand through wage growth rather than the wealth effects of a booming, but volatile, stock market. It places both growth and equity concerns at center stage and attempts to find ways to assure that we have rising prosperity, more equitably shared. The potential for maintaining growth at 3 percent or better is now available to us because of the information revolution. Whether we can continue to match potential with performance will depend very much on whether we are willing to take a long hard look at what motivates growth and determines how growth is shared.

Barry Bluestone, The Battle for Growth With Equity in the 21st Century