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## Some Recent Changes in Economic Growth, Cycles and Volatility

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## **Some Recent Changes in Economic Growth, Cycles and Volatility**

by

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### Abstract

Countries and periods that benefit from higher economic growth trends are likely to enjoy additional gains from more moderate business cycles; with less frequent and/or milder recessions. Correspondingly, where and when growth gets to be disappointingly low, business cycles are likely to get less moderate, with recessions becoming more frequent and/or more severe. This association may have its source in changes in either the longer growth trends or intermediate cyclical movements.

This paper illustrates this broad relationship with two examples from the recent economic history of Japan and the United States. The Japanese case is a dramatic shift from high growth and cyclical stability to stagnation and a succession of booms and busts. The U.S. case, while more moderate, shows similar trend/cycle interactions. The last part of the paper sums up the necessary qualifications and conclusions. It addresses the changes over time in how people perceive the cycle-to-trend (and vice versa) connections, and how the economy reacts to the shocks and imbalances that may cause cyclical fluctuations.

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## 1. Strong Trends and Moderate Cycles as Twin Desiderata

Higher economic growth trends benefit people by creating more and better jobs, and raising income and overall wealth. This statement seems readily acceptable – perhaps even self-evident, but needs some qualifying. The gains that matter most are in real terms. Inflation harms many by producing spurious nominal gains and, worse, reducing the effectiveness of market signals produced by relative price changes.

If sustained over long stretches of time, high growth clearly offers another important advantage. Favorable upward trends in aggregate supply and demand – overall employment, real income and output, expenditures and sales – act in combination to moderate business cycles. Expansions are longer and stronger, while contractions are fewer and less severe. Some episodes of weakness that would have been recessions – absolute declines in total economic activity – in less favorable trends, are reduced to mere slowdowns – declines in the rate of growth but not the level of activity – in the higher, but sustainable, trends.

This happened time and again in several countries. For example, the two decades between the first and the second world wars witnessed a widespread interaction of weak growth trends and high cyclical instabilities. In the 1920's, there were huge bouts of deflation and inflation, particularly in Germany but elsewhere as well. In the 1930's, the Great Depression was virtually everywhere. Fluctuations in money and credit, price levels, and exchange rates were much too large and frequent for comfort. True, World War I itself was a terrible international disaster, and so was the way it was settled. Its aftermath was marked by sharp political conflicts and extremism, and many unusually large policy errors. But the interplay of economic trends and cycles was still an important factor as such, and at the time generally adverse.

The woeful results of these economic and political upheavals are made all too clear by history. They culminated in the attacks on their neighbors by the totalitarian communist and fascist regimes, World War II, and the Holocaust. But some lessons have

been learned, at least, and the aftermath of the second World War was much better than the aftermath of the first. After the war, the Allies helped Germany and Japan, the defeated aggressor nations, politically with democratization and economically with liberal market reforms. Both Germany and Japan, starting in 1945 from wartime destruction and impoverishment, made successful transitions to democratic societies and flourishing private market economies. Both achieved high, but not excessive, growth rates that proved reasonably stable for decades. Germany had its first postwar recession in the mid-1960s; Japan had its first in the mid-1970s.

With the help of free international trade, economic and financial (market, currency) reforms, and subsidies (Marshall Plan), many re-developing market economies saw growth cycles (fluctuations in generally positive growth rates) temporarily replace business cycles (fluctuations in the level of economic activity). In the largest and globally dominant economy, that of the United States, business cycles continued but moderated markedly, while the prevailing longer trends tended to favor more moderate but relatively stable growth as well.

## 2. From High and Stable Growth to Stagnation and Recessions

The recent history of Japan serves as a near-perfect quasi-laboratory test of the strong destabilizing power attributable to a drastic slowing in the aggregate economic growth trend. Growth of the Japanese economy after World War II was remarkably strong and persistent, as demonstrated by both the quarterly real gross domestic product (GDP) and the monthly composite index of coincident indicators (CEI).<sup>2</sup> After the recession of 11/1973 – 3/1975, which was brought about in part by the external shock of a large oil price hike, the growth rates of both GDP and CEI declined visibly for the next dozen years, then picked up again over the following three years through 1991. Between 1965 and 1991, Japan's GDP increased tenfold, CEI more than fivefold. (Table 1)

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<sup>2</sup> GDP is part of Japan's official national income and product accounts. CEI is assembled by The Conference Board from selected Japanese statistics. For data and detailed information, see Zarnowitz and Luk, (2005), pp. 2-4.

**Table 1 Japan  
Percent Growth Rates, Selected Variables, 1959 - 2005**

	(1)	(2)	(3)	(4)	(5)	(6)
	No. of years	LEI	CEI	GDP	CPI	Productivity
Period	Average Percent growth (%)					
1965-1973	9	9.15	4.39	12.55	9.07	—
1974-1991	18	1.85	2.59	5.58	6.37	3.75
1992-2005	14	0.81	0.20	1.30	0.15	2.78
1965-2005	41	3.96	2.66	9.72	7.59	3.25

- Column (2) LEI -- Japan Leading Index  
 (3) CEI -- Japan Coincident Index  
 (4) GDP -- Real Gross Domestic Product  
 (5) CPI -- Consumer Price Index as a measure of inflation  
 (6) Productivity -- Labor Productivity in Manufacturing  
 \* Because labor productivity is available only since 1973, growth calculations are for the entire period are for 1973-2005

However, at the same time, big and accelerating increases occurred in the credit and asset price inflation. In the last two years of the 1980's, both stock prices and land prices rose more and more rapidly at rates defying rational explanation and suggesting irrational exuberance. Indeed, the stock market bubble burst in 1989, the land price bubble in 1990. For a time, excessively large drops in asset prices replaced exorbitant rises.

The bubbles put an end to the lengthy period of prosperous recovery and were followed in 1992-2005 by a period that had some unique features. The most adverse of these was the turn from high and stable upward trend to very little growth. This "Great Stagnation" saw as many as three business cycles in as few as about ten years, all weak and short contractions followed by weak and short expansions.

Chart 1 shows Japan's coincident index consisting of four monthly indicators in real terms (physical units or constant prices), namely an industrial production index, number of employed, labor income, and manufacturing and trade sales. Total gross

domestic product (GDP) is plotted separately (bottom curve) and included in the broadest aggregate, together with the coincident index (COIN+GDP, the middle curve). The Conference Board uses the latter to identify and date Japan's recessions, of which there were four in 1965-2005, as marked by the shaded columns in Chart 1. All three series plotted show sharp declines in their upward trends between the periods before and after the 1973-1975 recessions. (As a general rule, output grows faster than employment due to technology and productivity gains, so GDP grows faster than CEI.) After 1991, CEI and GDP flattened dramatically and three recessions followed each other quickly within a decade.

Chart 1  
Composite Index of Coincident Indicators and Real Gross Domestic Product,  
Japan, 1965-2005

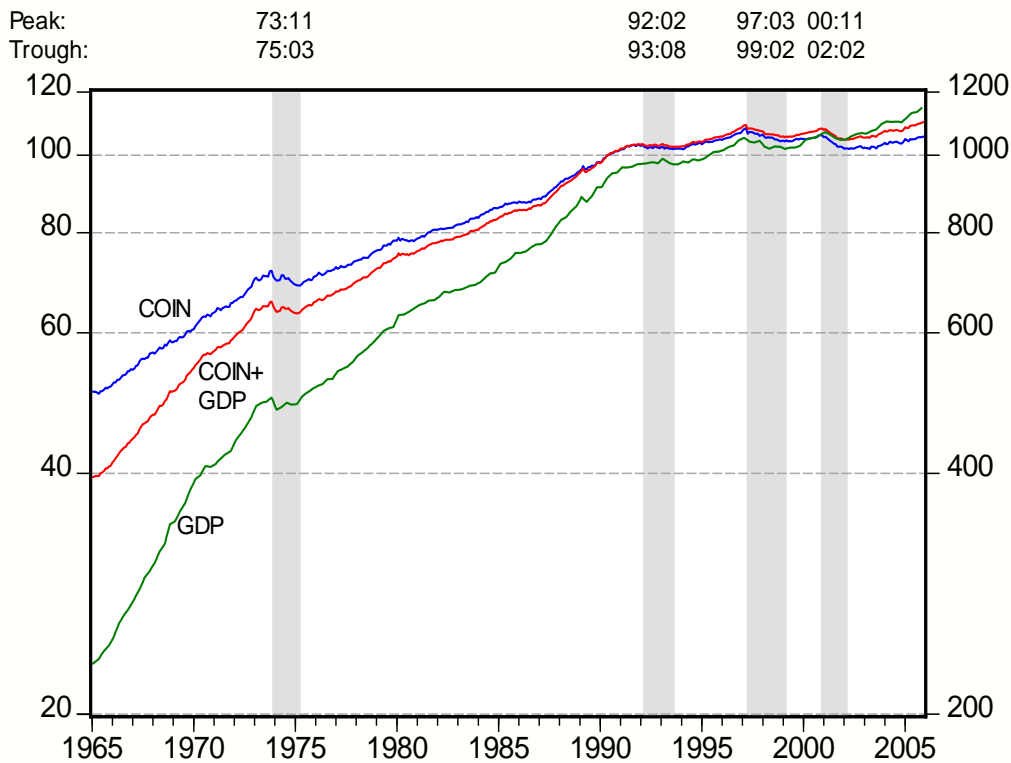


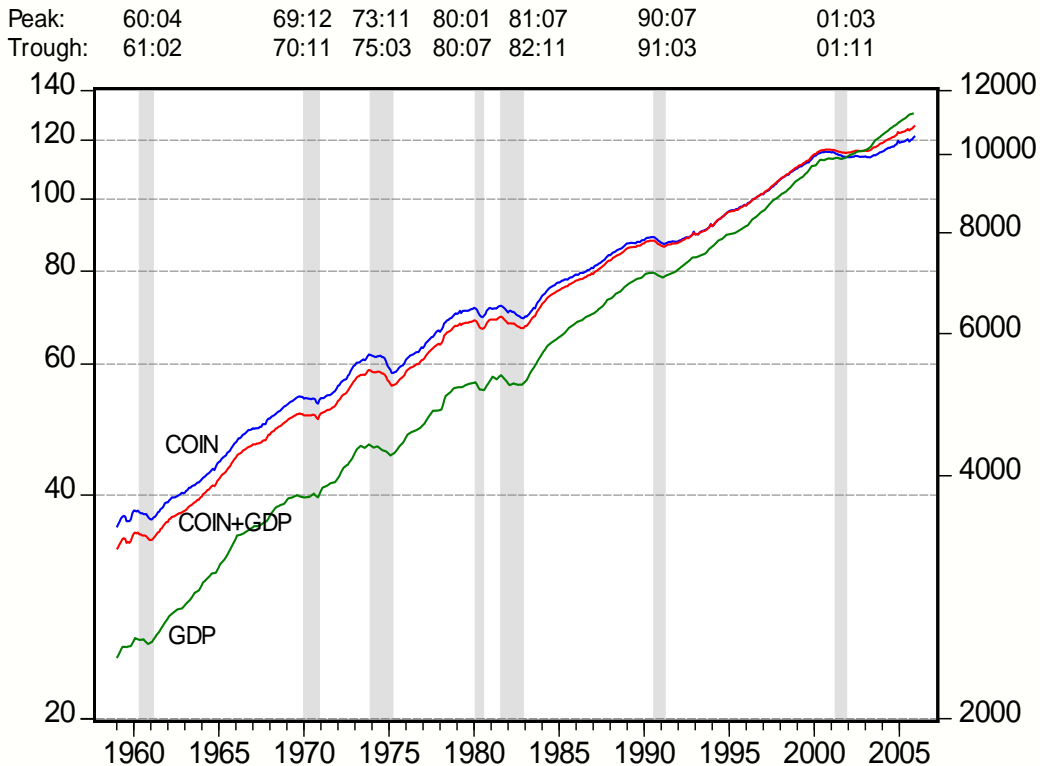
Table 1 shows that Japan's leading composite index rose at a rapid rate of more than 9 percent annually in the last decade before the country's first post-World War II recession, then dropped to less than 2 percent in the next eighteen years (column 2). In

the following period of 1992-2005, the Japanese LEI declined further to show little growth (0.8 percent annually). The coincident index (CEI) followed much the same pattern, rising 4.4 percent per year in 1965-1973, 2.6 percent in 1974-1991, and 0.2 percent in 1992-2005 (col. 3). Real GDP, very similarly, lost more than half of its strength after 1973 and more than two-thirds of the rest after 1992 (col. 4). Inflation declined dramatically as well, eventually approaching zero if not less, while the labor productivity rate lost about a quarter of its strength around the turn of the millennium (cols. 5 and 6).

### 3. A Less Dramatic Example of the Trend/Cycle Relationship

The United States economy experienced much more moderate changes in the past half-century than Japan did, but trends and cycles interacted in much the same way in both countries. Chart 2 shows for the U.S. monthly CEI and quarterly GDP in 1959-2005 that both series had very similar timing in that they declined in each of the seven recessions covered and dated in the chart, and only on those occasions. As expected, GDP grew faster than CEI but fluctuated less. All principal components of CEI are highly cyclical with coincident timing, whereas not all of the major income or expenditure components of GDP are. But on the whole, GDP and CEI seem to have had relatively stable and similar movements in this era, both over longer and shorter intervals

Chart 2  
Composite Index of Coincident Indicators and Real Gross Domestic Product,  
United States, 1959-2005



However, it is well known that important developments occurred at the time that differed significantly in some of the sub-periods covered. In particular, the 1970's and early 1980's witnessed greater inflationary pressures, tighter monetary policies, and higher interest rates than either the periods before or after the 14 years between 1969 and 1982. The latter have been labeled a period of "Great Inflation".

Given the adverse macroeconomic effects of accelerated rises in the overall price level and interest rates, we would expect business conditions to deteriorate in the U.S. during the seventies and early eighties, and they did. This is shown in Table 2, which shows the percent growth rates in five selected variables for four selected sub-periods of the recent era. The variables, in addition to the U.S. GDP and CEI, are the composite index of leading indicators (LEI), inflation as measured by PCE, the deflator for personal



consumption expenditures, and labor productivity as measured by, output per hour in the nonfarm business sector.

Inflation rose sharply, from 2.1 to 10.4 percent, between 1959-1968 and 1969-1982, then dropped to 3.9 percent in 1983-1994 and 2.2 percent in 1995-2005. Over the entire period 1959- 2005, PCE rose about 13.4 percent (see Table 2, column 5). Economic activities declined correspondingly in the 1970's and early 1980's, as shown by drops in each of the three variables, LEI, CEI, and GDP (cols. 2-4). Labor productivity growth dropped, too, from 3.2% to 1.5% (col. 6). It improved in 1983-1994 and, more strongly yet, in 1995-2005, contributing to large successive increases in LEI, CEI, and GDP.

**Table 2 U.S.  
Percent Growth Rates, Selected Variables, 1959 - 2005**

	(1)	(2)	(3)	(4)	(5)	(6)
	No. of years	LEI	CEI	GDP	PCE	Productivity
Period	Average Percent growth (%)					
1959-1968	10	4.33	4.56	5.43	2.08	3.18
1969-1982	14	0.29	2.19	2.74	10.43	1.48
1983-1994	12	4.60	3.17	4.28	3.93	1.97
1995-2005	11	6.17	3.41	3.68	2.17	3.14
1959-2005	47	4.99	5.04	13.05	13.36	5.86

- Column (2) LEI -- U.S. Leading Index
- (3) CEI -- U.S. Coincident Index
- (4) GDP -- Real Gross Domestic Product
- (5) PCE -- Personal Consumption Expenditure deflator as a measure of inflation
- (6) Productivity -- Nonfarm Business Sector Labor Productivity

These are remarkable changes, but what may be even more striking are the corresponding changes in cyclical instability. The U.S. economy became much more cyclical and volatile during the years 1969-1982. There were four recessions in that period (in 1970, 1973-1975, 1980, and 1981-1982), the same number as during the

almost twice as long period right after World War II. In 1946-68, the recessions occurred in 1948-1949, 1953-1954, 1957-1958, and 1960.

Inflation flare-ups as well as growth and productivity slowdowns tend to be more seriously disturbing factors than the inventory accumulation and liquidation, which were important determinants of cyclical activity during the early postwar period. A significant decline in the local economic growth trend may matter more than a short and mild recession.

These are among the main lessons to be drawn from some of the recent concurrent changes in economic growth trends and business cycles.

#### 4. Qualifications and Conclusions

The preceding discussion emphasized the effects of economic growth on fluctuations: strong upward trends moderate, weak trends aggravate, the cycle. While at times important indeed, this influence must not be seen in isolation or be overstated. Trends affect cycles, but cycles affect trends as well. The long tendencies interact with shorter movements in many economic time series, which is precisely why it is difficult to separate the two elements cleanly to begin with.<sup>3</sup>

Actually, people who act in the economy and observe it in real time are likely to perceive the cycle-to-trend connection well before the opposite linkage. This is because trends take more time to develop in fact and in the data than the events and changes involved in the short and intermediate-run movements. It probably was not before the early 1930's that most people could realize the severity of the ongoing recession; but it was not before the late 1930's that it became clear that the normal process of economic growth had been disrupted by a depression of unprecedented depth and scope.

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<sup>3</sup> See Zarnowitz and Ozyildirim, (2002). Also note how common in economics are complex relations that run in both directions rather than be well defined in terms of causes and effects.

Similarly long lags of perception are likely to exist on the other end of macroeconomic fortunes, too. The absence of disastrous financial crises and major depressions after 1938 has long suggested to some economists that business cycles have become more moderate, with longer expansions and shorter and milder recessions. Several likely reasons for this evolution have been proposed, including changes in the economy's structure from more to less cyclical industries and products; the rise of automatic fiscal and monetary stabilizers; improvements in discretionary policies; deposit insurance and last-resort lending; less volatile changes in money supply; and strengthened consumer and business confidence (see Stock and Watson, 2002, 2003; Zarnowitz, 1999). The last of these factors, in particular, depends on recognizing that cyclical instability lessened and growth prospects improved. This requires learning and time, and so it is a gradual process. In an analogous way, long expansions like those of the 1960's, 1980's, and 1990's do foster confidence and outlook for continuing growth. Eventually, an upward tilt in the overall upward trend is perceived, which is valid temporarily but sometimes misjudged as the end of the business cycle and onset of an endless era of recession-free prosperity.<sup>4</sup>

Historically, growth in modern market-oriented economies, at least since the great industrial revolutions, has proceeded through sequences of business expansions and contractions. High profit expectations from investments in new markets, industries and products inspired by various innovations (in technology and productivity, etc.) are often sources of the booms. The resulting imbalances – in investment vs. savings, prices vs. costs, expectations vs. outcomes – are often sources of the busts. But a variety of unforeseen adverse or favorable events, and reactions to or propagation of such “shocks,” account for some cyclical episodes and contribute to many others. No compelling reasons have been found so far why these long-observed processes may not continue.

The economy's vulnerability to both the endogenous imbalances and exogenous shocks varies over time, depending on the changing conditions at home and abroad, in several spheres, social and political as well as economic and financial. The overall

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<sup>4</sup> See Zarnowitz (1999).

economic growth trend, however, is likely to have a very important role in influencing this vulnerability.

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