

# **The Seventh 18-Month STP Economic Forecast – Information Technology, the Kondratieff Wave, and Restrained Optimism –**

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## **1. Sustained Recovery is Possible Under Restrained Optimism**

### (1) Bottom Registered in April 1999

Since bottoming in last April 1999, the economy has grown at an approximately 1% rate led by the financial sector as it regains its composure, and firming public demand and personal consumption. As with residential investment, personal consumption has benefited from policy measures including income tax cuts in fiscal 1999 (¥1.4 trillion larger than in fiscal 1998 due to timing factors), and a boost to consumer confidence from higher loan guarantees from credit guarantee corporations.

Meanwhile, signs of a sustained recovery are emerging. In particular, external demand from Asia has helped boost production since last summer, while the BOJ *Tankan* survey registered a strong improvement in business sentiment. Moreover, the propensity to consume has returned from depressed levels back to its trend line.

However, uncertainties in the fourth quarter of 1999 once again clouded the picture. The main component contributing to growth shifted from public demand, which contracted sequentially, to external demand. Meanwhile, two key components — non-residential investment and personal consumption — remain on the sidelines.

The future of the economy rests on three key points: (1) whether personal spending can be sustained amid corporate restructuring; (2) whether private capital investment will resurface; and (3) how to characterize the year 2000 in the long-term context.

### (2) Personal Consumption Remains Steady Despite Restructuring

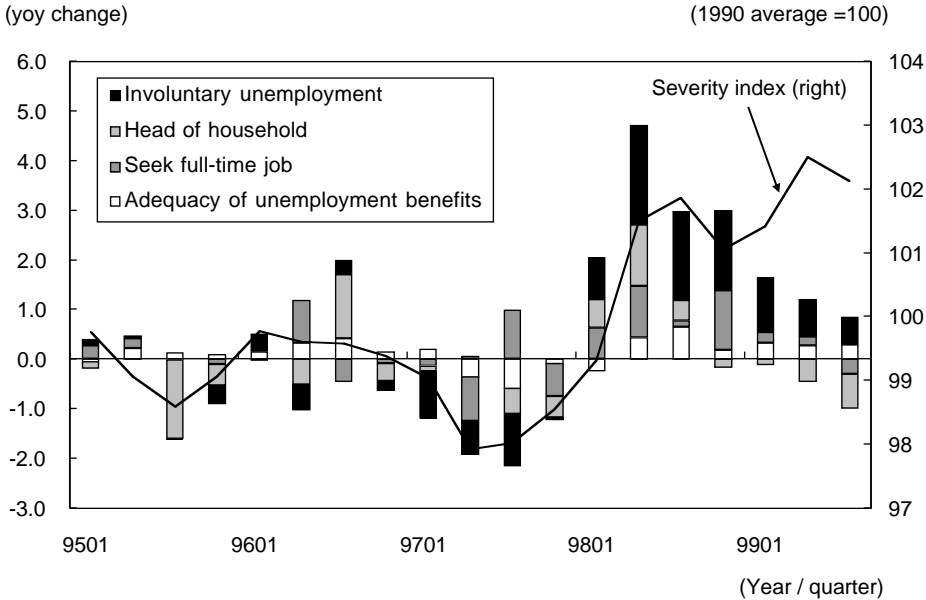
Consumer behavior appears to be unbalanced: in the autumn *Household Survey*, weakness in household spending was accompanied by growing consumer confidence not only in single-

person households but all households. Moreover, from 2000 income tax cuts will no longer mitigate the decline in nominal income. Low inflation and an improving propensity to consume will not be enough to sustain personal spending, causing it to decline at some point.

Meanwhile, corporate earnings will recover quickly. But given the extent of corporate restructuring, can we expect employment and income to improve after the usual six-month to one-year time lag? Or will there be a jobless recovery as in the U.S.?

Three trends are evident in the employment situation: (1) rising production is creating jobs apart from restructuring, and overall employed workers (including part-time workers) have increased to year-ago levels; (2) employment is shifting from manufacturing and construction industries — where restructuring activity is most pronounced — to tertiary industries, and (3) while the jobless rate remains high, qualitative aspects of unemployment — such as unemployment among heads of households and involuntary unemployment — have abated since the third quarter.

**Figure 1 Unemployment Severity Index**

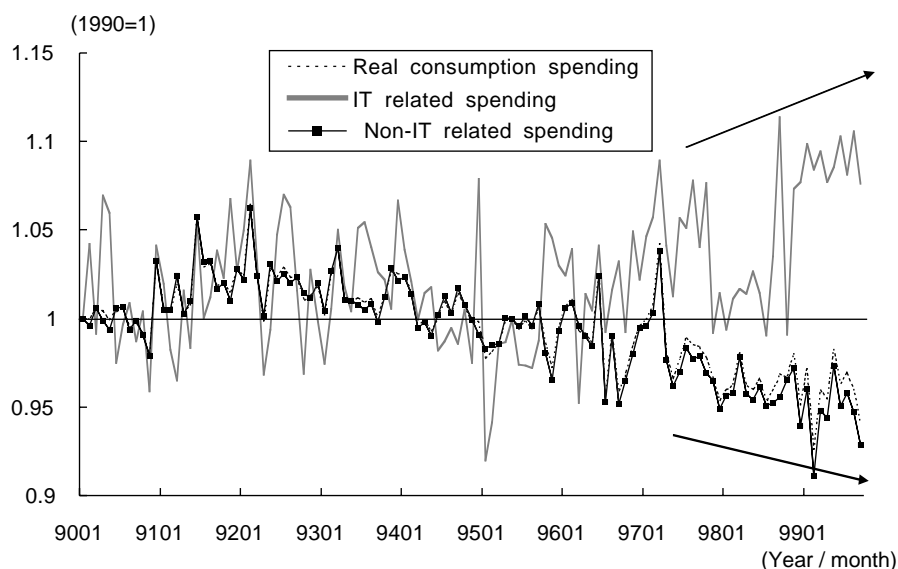


Note: The bar graph shows the change in contribution of components from the previous year.

In the second half of 1999, corporate restructuring occurred through natural attrition of regular employees, while part-time labor was expanded to accommodate increased orders and demand. This trend will help sustain incomes and boost consumer confidence in the future. Moreover, households are not reducing consumption so much as dynamically changing its composition by spending more on information technology (IT) related consumption while reining in other discretionary consumption. In the future, while earned income growth will be

restrained, we expect consumption to play an important role in supporting the economy.

**Figure 2 Steady Growth in IT Related Spending**



Notes: Data is seasonally adjusted and adjusted for inflation using the consumer price index. IT related spending includes durable goods and services for communications, education and entertainment.

Source: MACA

### (3) Recovery in Capital Investment

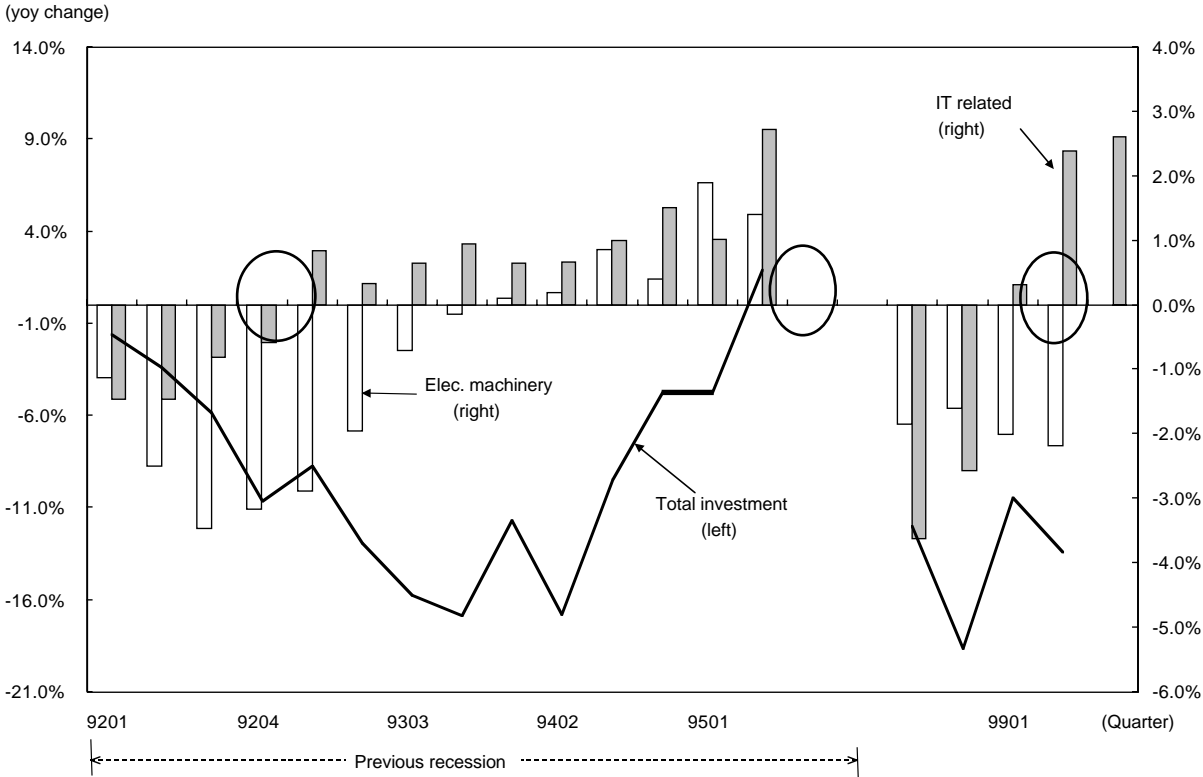
Capital investment is unlikely to recover immediately due to the following factors: (1) excess production capacity theoretically estimated at ¥40 trillion, (2) correction of the extremely high investment-to-GDP ratio relative to the U.S., (3) shift from identical to company-specific investment strategies targeting selected areas, and (4) increased direct investment abroad in pursuit of a global strategy. However, depreciation of the excess capacity is limited by the constraints of corporate balance sheets and income statements. In addition, as corporate earnings and capacity utilization rates improve, companies confronting deregulation and international competition are not likely to refrain from new investment. In fact, the negative growth rate of capital investment has been steadily shrinking.

Investment activity is already showing signs of perking up. Previously in 1995 and 1996, the recovery in investment first appeared in basic investment in information related areas (semiconductor production equipment, etc.). This was followed after three to four quarters by investment in electrical machinery, and approximately one year later by other industries. Considering that 40% of the robust investment spending in the U.S. is now IT related, similar investment activity in Japan is an even more promising indication today than in 1995.

In the first quarter of 1999, basic IT related investment was already positive compared to a

year earlier, and toward the second half of fiscal 2000, investment is likely to pick up in electrical machinery and followed by other industries. In addition, experience tells us that investment accelerates sharply when the capacity utilization rate exceeds 104 (1990 = 100). As external demand compensates for weak domestic demand, production and manufacturing orders will increase, causing capacity utilization to surge from its present level of 98. Thus capital investment will slowly turn positive while overcoming obstacles.

**Figure 3 Electrical Machinery Investment as a Leading Indicator for Investment**



Notes: 1. IT related investment, consisting of semiconductor manufacturing equipment, applied electronic equipment, and electrical measurement instruments, is compiled from *Machinery Orders Statistics*.  
 2. Electrical machinery and overall investment data are compiled from the *Quarterly Financial Statements of Incorporated Businesses*.

(4) Viewing Fiscal 2000 from a Longer Perspective

Fiscal 2000 is characterized as the start of the “digital decade.” At the same time, a massive amount of postal savings time deposits will reach maturity from fiscal 2000 to 2001.

The digital decade refers to five innovative new information services coming online between 2000 and 2010: (1) digital BS broadcasting, (2) terrestrial digital broadcasting, (3) next-generation cellular phones (IMT-2000), (4) automated highway electronic toll collection (ETC), and (5) a nationwide optical fiber network. These will not only transmit video and audio data, but enable the processing and transmission of massive amounts of information. For example,

ETC, which was contained in the Policy Measures for Economic Rebirth in November 1999, will spend ¥200 billion over three years in infrastructure investment, and start off with one-half million trucks equipped with onboard terminals. An interesting point is that the price of ¥80 million per toll booth initially projected by electrical makers was reduced to one-sixth due to bidding by large companies from other industries. The onboard terminals will not only pay tolls, but provide information related to traffic conditions, operational management, fuel prices of nearby gasoline stations, and so on. If these terminals merge with the present VICS (vehicle information and navigation system) system and become available for well below ¥100,000, they may spread to the mass market as well. Moreover, together with the next-generation cellular phone system's broadband transmission capability for high quality audio, video and other data, automobiles offer promise as new information base stations. This alone will have very large implications for the economy.

While Japan's information infrastructure is said to lag significantly behind the U.S., personal computers have surpassed the threshold for accelerating proliferation (30% of households), while the number of cellular phones in service has already reached 52.5 million units. Vast new business opportunities and activities are opening up for providers of advanced information services. Obviously, the induced investment from this will reach far beyond the electrical machinery industry.

The second issue concerns the maturation of postal savings time deposits. From fiscal 2000 to 2001, time deposits reaching maturity are valued at ¥60 trillion in principal and ¥40 trillion in interest. Most of this ¥100 trillion in cash is expected to be put back into savings, but it is not unreasonable to assume that 3% will be spent on consumption (based on U.S. spending patterns for capital gains), contributing 0.8% to GDP growth. Considering the distribution of maturity dates and time lag for asset income to be consumed, the contribution will begin to appear in the second half of fiscal 2000, and become full-fledged in 2001.

#### (5) Minor Business Cycle in Fiscal 2000

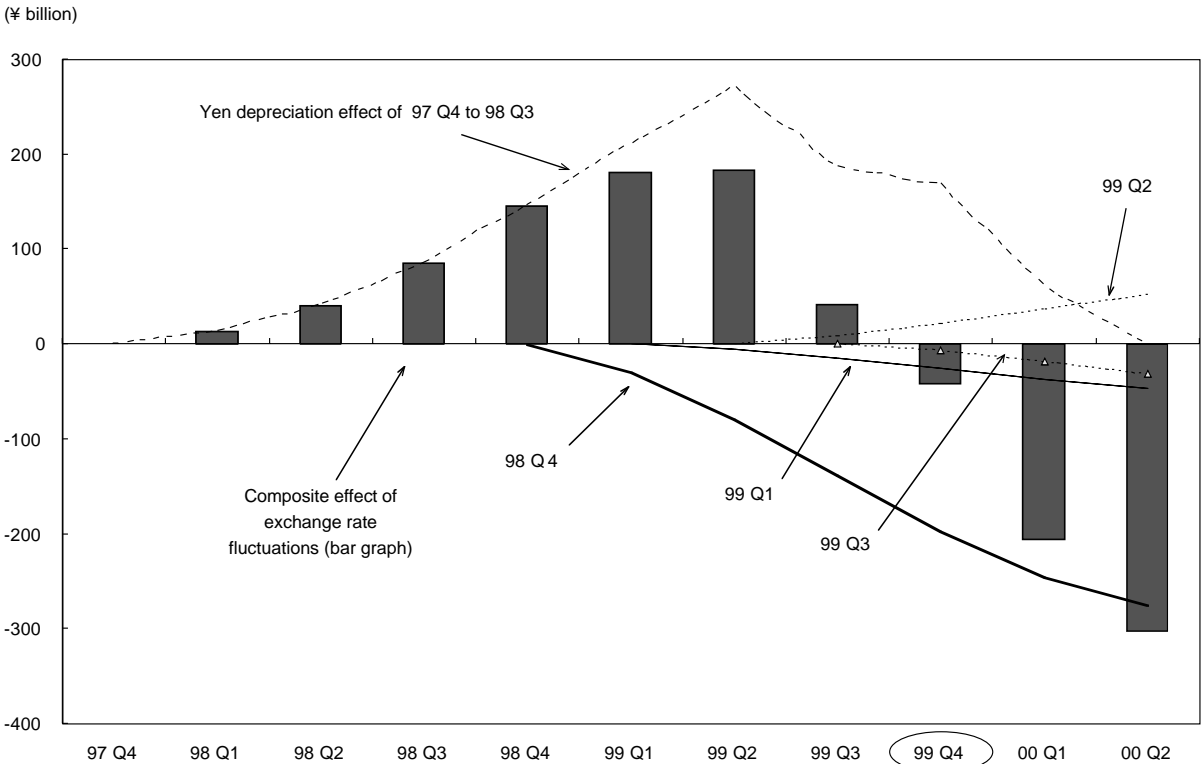
Due to the confluence of long-term and short-term factors, and structural and cyclical factors, a minor business cycle will occur during fiscal 2000.

The economy will slump in Q2 2000 (April-June) due to: (1) absence of the leap year effect from Q1, and (2) the latent effect of the strong yen from fiscal 1999. As a result, a minor adjustment phase will occur peaking in Q1 2000. However, the third quarter will be flat, and thus not enough to confirm a contraction.

A remaining concern is the peculiar optimism that the strong yen will not dampen corporate

investment intentions. Companies must not use the increase in external demand as an excuse to ease up on restructuring efforts.

**Figure 4 Exchange Rate's Effect on External Demand to Turn Negative from Q4 1999**



Notes: 1. Shows effect of exchange rate on (real) external demand using estimated export and import coefficients, with Q3 1997 as base quarter (\$1 = ¥117; numbers denote divergence from base quarter).  
 2. While the above estimation assumes all other factors to be constant, in reality many factors affect exports and imports.

The second half of fiscal 2000 will see a long-awaited economic recovery led by domestic demand as consumption is boosted by rising employment and maturing time deposits, and investment is driven by greater capacity utilization and IT related investment.

As in fiscal 1999, the economy will grow at 0.7% in fiscal 2000. However, if excessively optimistic expectations are eliminated, the recovery will become more perceptible: (1) adjusted for exceptional quarterly growth, the growth rate is 0.1% for fiscal 1999 compared to 0.7% for fiscal 2000, and (2) the sequential growth rate will be 0.1% in the first half of fiscal 2000, and 1.5% in the second half.

To summarize the economy's course, after bottoming out in April 1999 and expanding for approximately one year, the economy will undergo minor adjustments for four to six months, and then enter a full-scale recovery. The government's economic forecast for fiscal 2000 will be realized in the second half, but the government needs to inform the public about the eco-

conomic adjustments in the first half, and at the same time take measures to minimize the decline. This calls for a policy mix that emphasizes not fiscal measures, but monetary measures including quantitative easing.

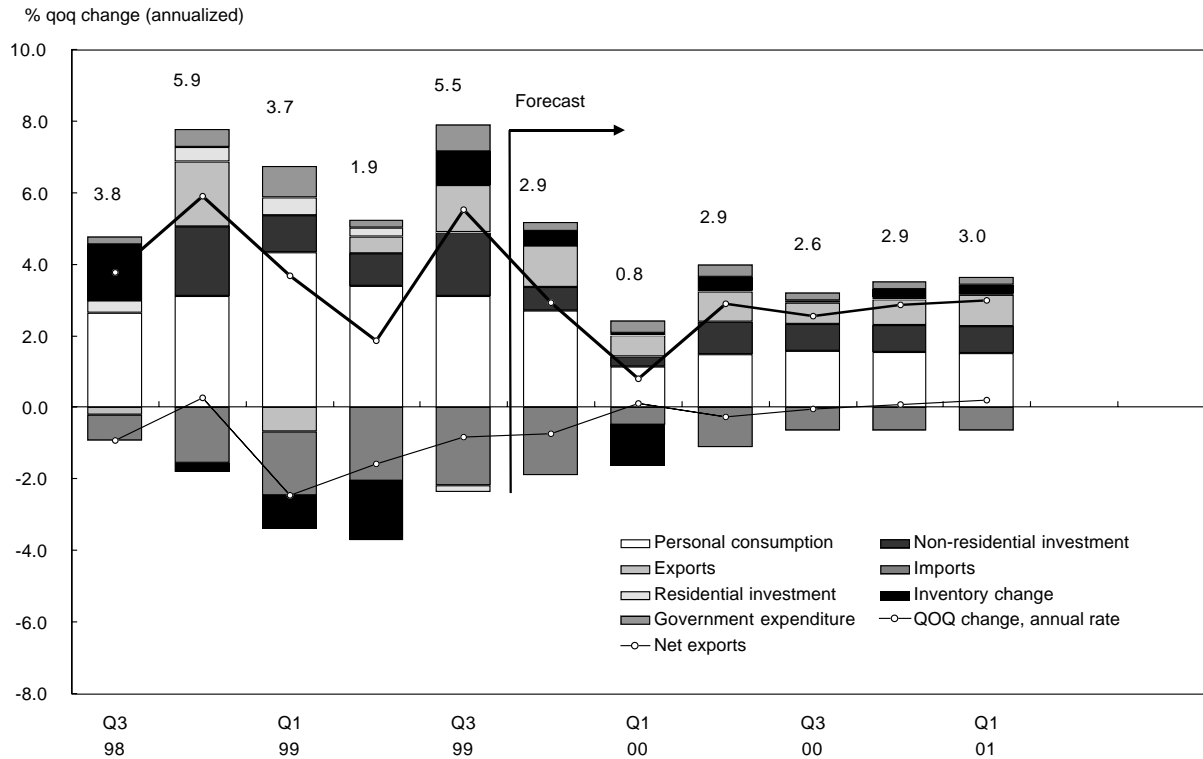
The Kondratieff wave theory defines four long-term periods centered around emerging industries: (1) spinning and steel, 1790-1848 (58 years), (2) steam engine, 1848-1896 (48 years), (3) automobile, 1896-1948 (52 years), and (4) electronics and semiconductors starting in 1948. Since the average wave duration is 52 years, a new wave could be starting in 2000. Alternatively, we can think of having gone through Schumpeter's plus sum, zero sum, and global adjustment phases, and entered a new 50-year period driven by information technology. The rise of Japan's vaunted management style, which temporarily enjoyed global appeal, also occurred during the past 50 years. While of the next wave appears to be starting at a difficult time for the economy, it also presents an opportunity to create a new form of Japanese style management from scratch.

## **2. U.S. Economy's Role to Diminish as Engine of World Growth**

The U.S. economy has sustained a 4% growth rate since 1997, due partly to the revision of GDP data and to the Y2K one-time factor. Factors working to reduce NAIRU (non-accelerating inflation rate of unemployment) since the mid 1990s have reached their limit, meaning that future job growth will directly lead to upward wage pressure. With jobs growing faster than the labor force, if the increase in non-farm employees continues to exceed 150,000 per month, additional interest rate hikes will be unavoidable.

In fiscal 2000, the economy will gradually slow down centered around personal spending and private capital investment due to the following: (1) a gradually rising inflation rate, (2) the effect of three interest rate hikes since June 1999, and (3) voluntary adjustment of accumulated stock. Due to the Y2K factor, IT related investment will stabilize from the third quarter of 1999, while personal spending will stabilize in early 2000 after being propelled by the Christmas season and Y2K preparations. The economy will return to a cruising speed near its potential growth rate of under 3%.

**Figure 5 Interest Rate Cuts Cool Down Domestic Demand and Curb External Imbalances**



Source: U.S. Dept. of Commerce

### 3. Asia Maintains Bipolar Expansion

Due to low-interest rate and fiscal spending policies, and to the stable global economy, Asia is experiencing a general recovery in which export growth spurs production and domestic demand. However, a bipolarization is occurring between economies with strong recoveries such as Korea, and those with weak recoveries such as Indonesia. The difference can be traced to the strength of export recovery. The real growth rate of nine major Asian countries including China recovered from -0.4% in 1998 to 5.8% in 1999, and will achieve 5.6% in 2000.



**Figure 6 Economic Forecast for Asia (% change yoy)**

	% of Asian economy	1997 (a)	1998 (a)	1999 (f)	2000 (f)
China	37.3	8.8	7.8	7.2	6.8
Korea	18.0	5.0	-5.8	8.8	5.0
Taiwan	11.5	6.8	4.8	5.3	6.0
Hongkong	7.1	5.3	-5.1	1.0	2.0
Singapore	3.9	9.0	0.3	5.0	5.5
Thailand	6.2	-1.3	-9.4	3.5	5.0
Indonesia	8.7	4.7	-13.2	1.0	4.5
Malaysia	4.0	7.5	-7.5	4.0	5.0
Philippines	3.3	5.2	-0.5	3.0	4.5
<b>All 9 countries</b>	<b>100.0</b>	<b>6.4</b>	<b>-0.4</b>	<b>5.8</b>	<b>5.6</b>
Excl. China	62.7	5.1	-4.7	5.0	4.9
NIES 4	40.4	6.0	-2.1	6.2	4.9
ASEAN 4	22.3	3.5	-9.3	2.6	4.7

Note: Economy size is based on nominal GDP in 1997.  
Sources: Government data, Asia Development Bank, others.

#### **4. Europe Bottoms Out and Heads for Recovery**

The sluggish U.K. and German economies bottomed out in the second half of 1999. Both domestic and external demand have been recovering moderately due to monetary easing at the beginning of the year, the effect of the weak euro, stabilization of the global economy, and completion of adjustments in the corporate sector.

Looking ahead, Europe's recovery will strengthen as the real growth rate rises from 2.0% in 1999 to 2.8% in 2000. Meanwhile, inflation has already started to edge up due to the weak euro and high oil prices. Since wage negotiations culminating from February to April 2000 (involving Germany's IG Metal union with 3.3 million members, etc.) are generally expected to result in a modest 2 to 3% increase, inflation will basically rise moderately in step with the recovery. Following the ECB's policy rate hike from 2.5% to 3.0% on November 4, additional hikes are expected in the first half of 2000 to preempt inflation.

**Figure 7 Economic Forecast for Europe (% change yoy)**

	1997 (a)	1998 (a)	1999 (f)	2000 (f)
<b>Real GDP</b>	2.5	2.6	2.0	2.8
Germany	1.5	2.2	1.2	2.4
U.K.	3.5	2.1	1.6	2.8
<b>Consumer price index</b>	1.7	1.3	1.2	1.5
Germany	1.9	1.0	0.6	1.1
U.K.	2.8	2.7	2.2	2.4
<b>Current account bal.</b>	1.4	1.2	0.9	1.0
Germany	-0.1	-0.2	-0.2	-0.1
U.K.	0.8	0.2	-0.5	-1.0

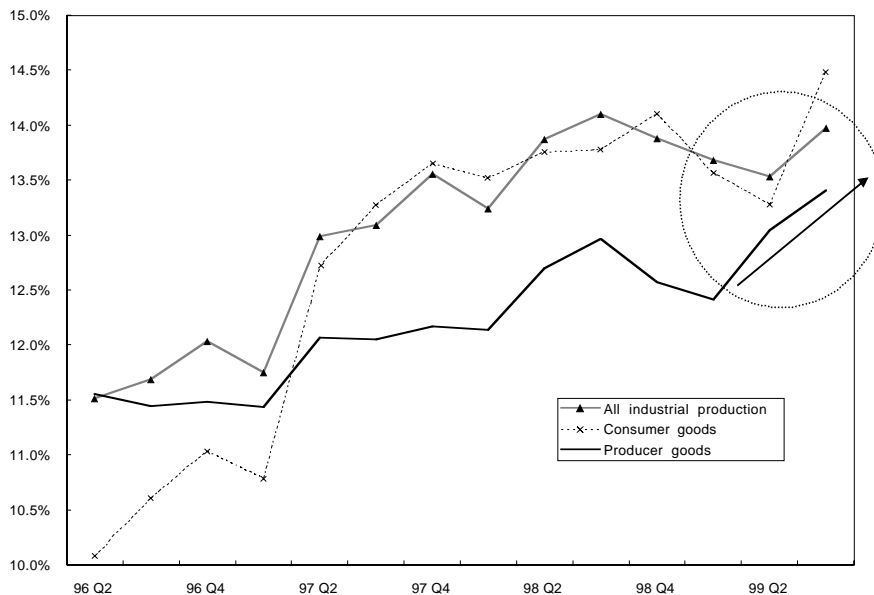
Notes: For 15 EU countries. Current account balance is expressed as GDP ratio. Consumer price inflation for U.K. excludes mortgage interest payments

## 5. Six Key Points of the Economic Forecast

### (1) Clear Leading Role of External Demand

The lead role in the economy has changed since the start of the recovery. While economic policies are mitigating the sharp decline in policy effects, the role of exports (particularly IT related exports and exports to Asia) in driving the recovery is becoming increasingly clear.

**Figure 8 Dependence of Production on Export Demand**



Notes: Export dependence is calculated from MITI's *Itemized Mining and Manufacturing Shipment Table* as follows: (Export shipment index x Export ratio) ÷ (Total shipment index x Itemized shipment ratio)

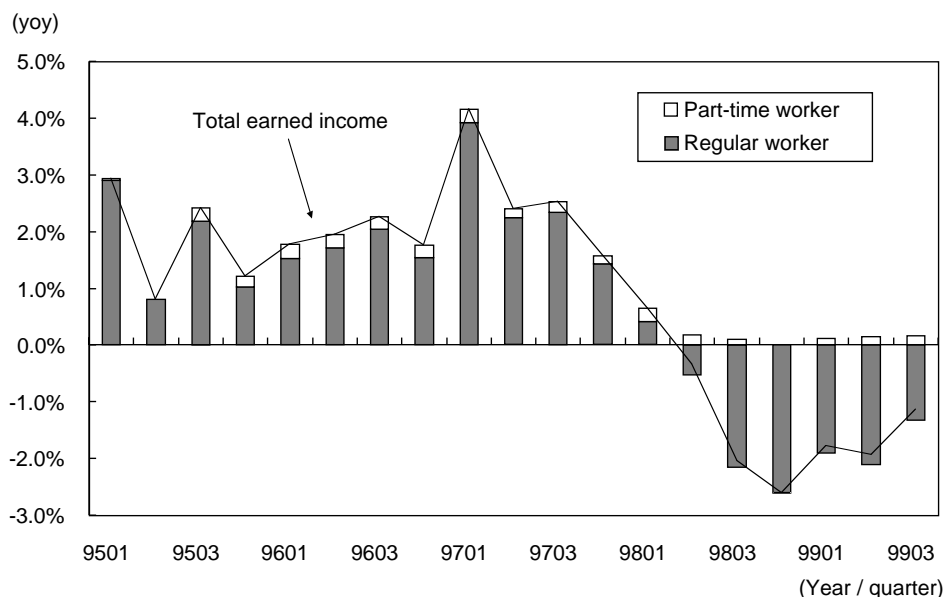
## (2) Impact of Y2K and the Leap Year on GDP

While the Y2K effect has yet to be extracted from the statistics, news reports indicate increased stockpiling and inventory building. Although the extent of such activity is not accurately known, estimates based on the news reports suggest a boost of 0.2% to consumption and 0.1% to inventories (on a GDP basis). The leap year effect will add 0.5% to GDP in Q1 2000.

## (3) Part-time Workers Boost Earned Income 0.2%

The recession beginning in January 1997 has brought about the first full-fledged employment reduction in Japan. However, while regular workers are being significantly reduced, part-time workers have continued to be added in large numbers. According to the *Wage Census* and *Survey of the General Status of Part-time Workers*, part-time workers earn 50% the wages of regular workers and also work shorter hours (approximately 60%). The increase in part-time workers contributes little to earned income: in Q3 1999, it contributed 0.2%. What it will do is mitigate the decline in employed workers, and thereby prop up consumer confidence.

**Figure 9 Contribution of Part-time Workers to Growth in Earned Income**



Note: Bar graph shows contribution breakdown.

Sources: Ministry of Labor, *Monthly Labor Statistics*; *Wage Census*; *Survey of the General Status of Part-time Workers*.

## (4) Capital Investment Calls for Prudence but not Pessimism

From a macroeconomic perspective, the problems of excess capacity and employment show

no signs of improvement thus far. Corporate finances also indicate that managers' perceptions of excess capacity have improved slightly, but continue to remain high.

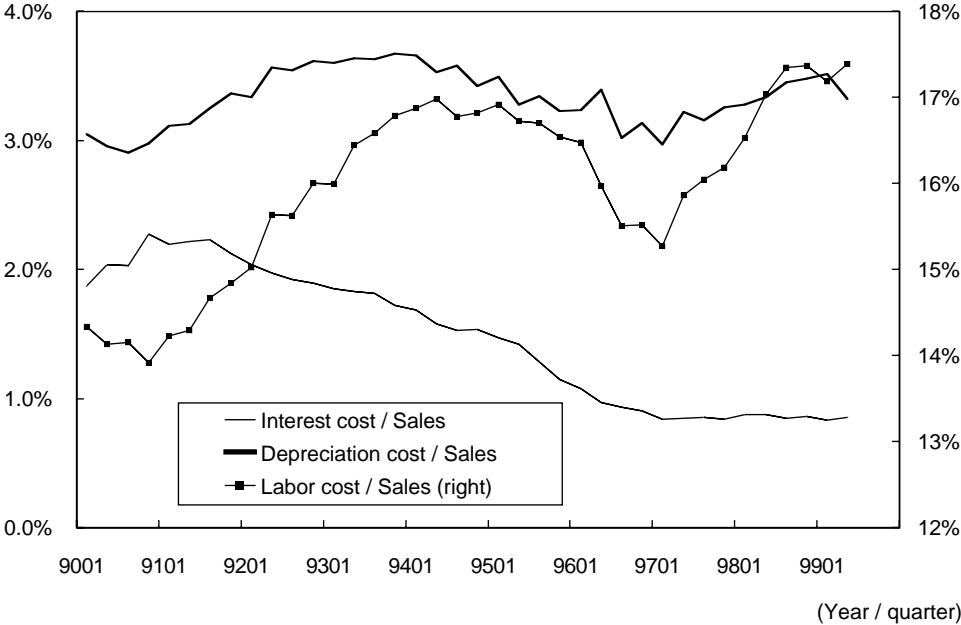
In addition, large companies have aggressively cut costs, while small and mid-sized companies lag visibly behind. As in the previous recovery from October 1993, large companies are likely to recover first in investment spending.

Meanwhile, latent incentives exist for companies to invest in new capacity, including the positive trend in corporate earnings and aging of current facilities.

Capital investment in the IT related industries was negative in 1999. However, from the second half of fiscal 2000, IT related investment will drive other investment as companies invest to ramp up new services and resume spending delayed by the Y2K problem.

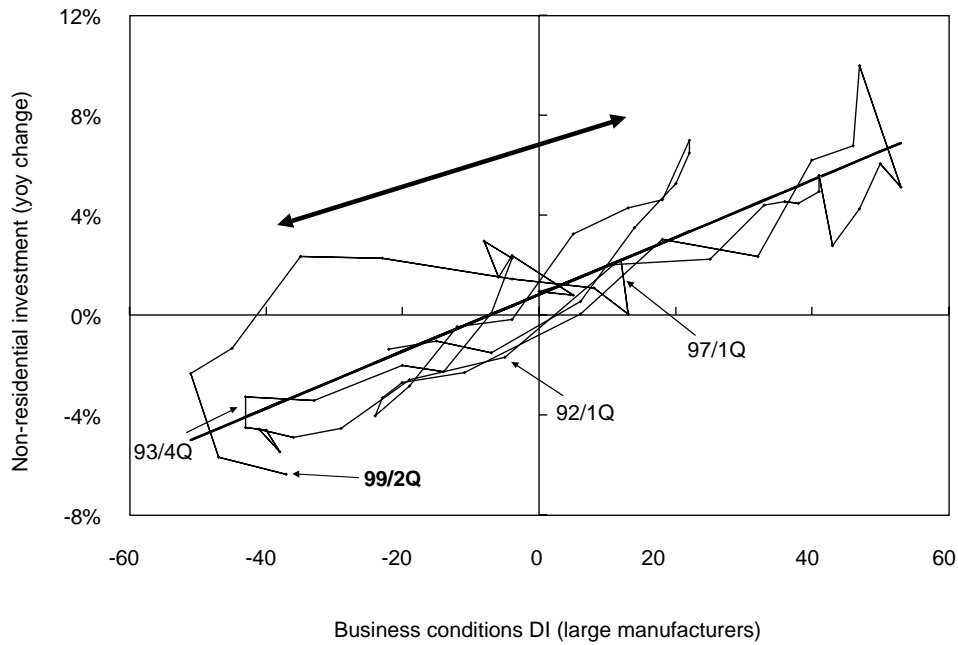
Since the pace of economic recovery will fall short of the average pace in the past, the same is likely to hold true for investment. Led by IT related investment, capital investment will turn positive in Q1 2000, and reach a growth rate in the mid 2% range for the fiscal year.

**Figure 10 Excess Capital Stock, Employment, and Debt (Manufacturing)**



Note: Numbers are seasonally adjusted.  
 Source: MOF, *Quarterly Financial Statements of Incorporated Businesses*.

**Figure 11 Business Confidence Diffusion Index and Capital Investment (Manufacturing)**



Sources: BOJ, *Tankan Survey* ; MOF, *Financial Statements of Incorporated Businesses*.

**(5) Long-term Care Insurance to Contribute 0.3% to GDP**

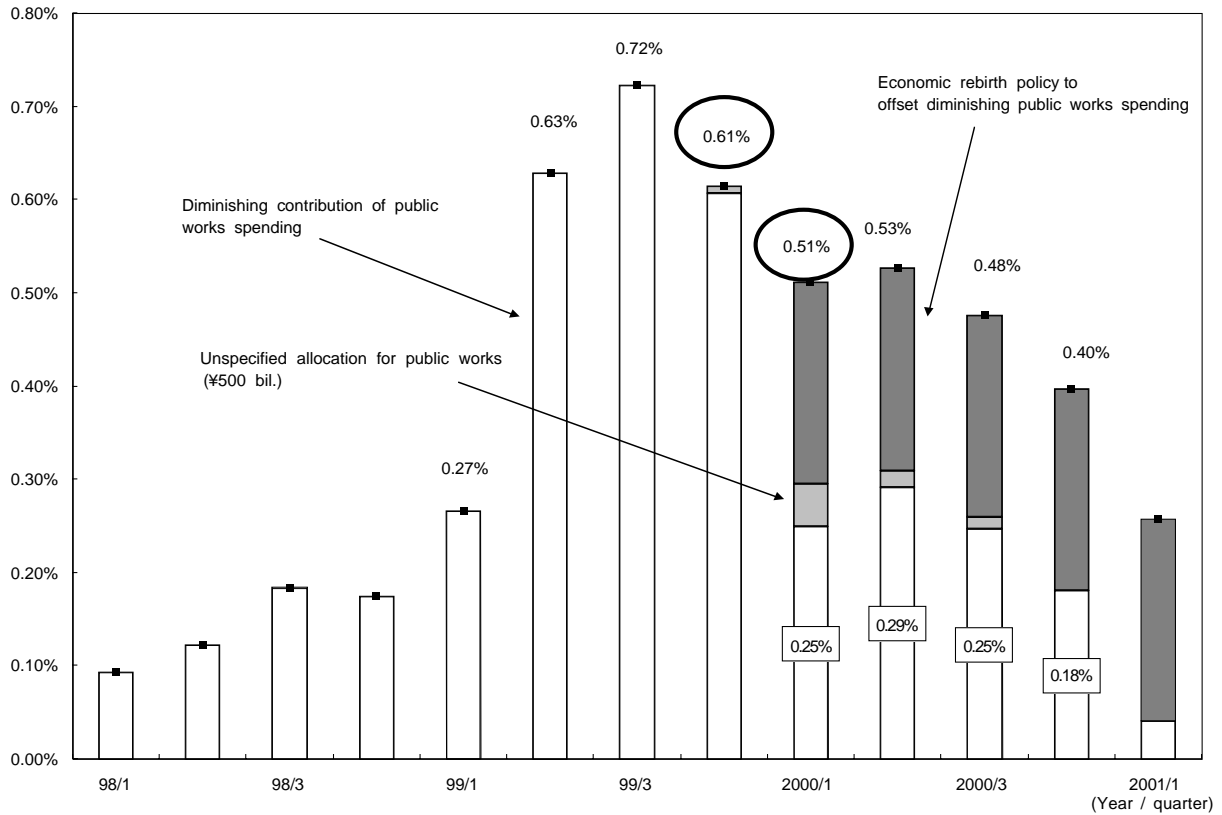
The introduction of public long-term care insurance will contribute to economic growth in two ways: (1) by creating new demand for long-term care services, and (2) by replacing care services provided by family members (and thus omitted from GDP data) with market-based services, which are included in GDP data.

**(6) Fiscal Policy Effects Decline in Fiscal 2000**

Two key fiscal measures that used to drive the recovery recede — public works spending and tax cuts — will make a diminishing contribution in fiscal 2000.

The Policy Measures for Economic Rebirth (passed November 11) mitigate the worrisome sharp decline in policy effects in the second half of fiscal 1999. However, in view of the economy and fiscal factors, the initial fiscal 2000 budgets of both central and local governments will have a neutral rather than expansionary effect. Due to smaller budget carryovers, actual outlays are expected to drop slightly from the previous year.

**Figure 12 Diminishing Contribution of Fiscal Policies**



Notes: (1) Graph shows only the economic effects of income/corporate tax cuts and additional policy investments. Numbers show contribution to GDP growth rate. Numbers in rectangular boxes show contribution prior to implementation of Economic Rebirth Policy. Sequential change in contribution can be obtained by subtraction (i.e., for Q1 2000, 0.51% - 0.61% = -0.1%).  
 (2) The effect of the Economic Rebirth Policy has been averaged out over five quarters.

## 18-Month Economic Forecast for Japan

	FY 98	FY 99	FY 2000	6-month GDP forecast		(% sequential change)			
	actual	forecast	forecast	10-12	00/1-3	4-6	7-9	10-12	01/1-3
Real GDP	-1.9	0.7	0.7	-0.3	0.3	-0.3	0.4	0.8	1.2
Contribution of:				-1.1	1.1	-1.2	1.8	3.4	4.7
Domestic demand				1.2	-0.0	-1.0	0.1	1.3	2.3
Private sector demand	(-2.2)	(0.7)	(0.4)	(-0.3)	(-0.3)	(-0.2)	(0.5)	(0.8)	(1.2)
Public sector demand	(-2.4)	(0.3)	(0.5)	(-0.2)	(-0.1)	(-0.1)	(0.3)	(0.7)	(1.0)
External demand	(0.2)	(0.3)	(-0.1)	(-0.1)	(-0.2)	(-0.1)	(0.2)	(0.2)	(0.2)
Private final consump. exp.	(0.3)	(0.0)	(0.3)	(-0.0)	(0.5)	(-0.1)	(-0.1)	(-0.0)	(-0.0)
Residential investment	0.6	1.5	0.5	-0.1	0.3	-0.4	0.4	0.7	0.8
Non-residential investment	-10.9	3.2	-6.3	-6.1	-2.8	0.6	-1.0	-0.8	1.4
Public fixed capital form.	-9.5	-6.2	2.8	-1.5	0.6	0.8	1.2	2.0	2.8
Exports	1.5	3.0	-1.7	-1.0	-2.2	-1.0	1.6	2.1	2.8
Imports	-3.8	3.0	2.1	-2.4	1.5	0.2	0.3	0.7	0.8
Nominal GDP	-7.0	3.6	0.2	-2.8	-2.9	1.6	1.1	0.9	1.4
	-2.0	-0.5	-0.0	-0.7	-0.1	-0.4	0.6	0.7	1.0

Notes: (1) For real GDP, top number is sequential change, middle number is annualized sequential change, and bottom is yoy change.

(2) Forecast assumptions: Exchange rate: ¥110.2 for FY 99 and ¥102 for FY 2000 ODR to stay unchanged at 0.5%;

Official discount rate: Unchanged at 0.5%

Crude oil: \$19/barrel in FY 99, \$20.20 in FY 2000

Tax cuts: ¥4 trillion tax cuts in FY 99 & 2000 (permanent tax cut in FY 2000)

Social security premium: Freeze until FY 2000

Long-term care insurance system: Begins in April-June 2000 quarter

### < Major economic indicators >

(%)

	FY 98	FY 99	FY 2000	10-12	00/1-3	4-6	7-9	10-12	01/1-3
Industrial product. (seq. chg.)	-7.1	2.6	1.3	1.5	-0.9	-0.4	0.3	0.6	0.8
Wholesale price index (yoy)	-2.1	-1.1	-0.3	-0.7	-0.6	-0.4	-0.3	-0.3	-0.2
Consumer price index (yoy)	0.2	-0.4	0.1	-0.9	-0.3	-0.0	0.1	0.2	0.1
Current account bal. (¥ tril.)	15.2	12.6	13.1	11.2	13.1	13.6	13.5	12.9	12.2
(ratio to nominal GDP)	(3.1)	(2.5)	(2.6)	(2.3)	(2.7)	(2.8)	(2.7)	(2.6)	(2.4)
Unemployment rate	4.3	4.8	4.8	4.7	4.9	5.0	4.9	4.7	4.6
Housing starts (1,000)	1181	1207	1127	1166	1172	1138	1129	1122	1119