[Abstract]
The purpose of this research is to conduct comprehensive analyses of the impact of information technology on Japan’s business cycle and economic growth. To better comprehend and measure technology’s influence we employed several types of analyses: business cycle, input-output, growth accounting, and production function. These analyses yielded four observations: First, IT producing sectors have led the Japanese business cycle over the last decade and these same sectors have been sliding into a rather deep recession since early 2008. Second, IT producing sectors, especially application service providers such as software developers, information providers, and content producers have turbo-charged the economic expansion. Third, IT using sectors, however, seem to continue to fumble the benefits of IT innovation in terms of intensive investment and effective use of the technology. Fourth, it is feasible that the economy will grow at a clip of around two and half percent annually if intensive investment and effective use of technology grows across industries.

Keywords: information technology, productivity, Japanese economy, business cycle, input-output analysis, growth accounting analysis, production function model

JEL classification number: E22, L16, O47, O53
Executive summary

Due to the demographic trends of an aging and decreasing population, pessimistic perspectives abound about Japan’s long-term economic outlook. Because of diminishing demographics, innovation is a key factor in overcoming workforce constraints and turning the economy prosperous. Information technology plays an important and promising role in innovation today and we need to thoroughly investigate the comprehensive effects of information technology on the Japanese economy. For this purpose we conducted several empirical analyses of the impact of information technology on Japan’s business cycle and economic growth, employing business cycle analysis, input-output analysis, growth accounting analysis, and production function analysis to grasp and measure the influence of technology.

In Part I, using IT-related economic indicators developed from government statistical data we analyzed changes in business activities in IT producing sectors and their impact on the Japanese business cycle. This analysis revealed that the growth rate of IT production was greater than aggregate industrial production over the last two decades. Moreover, IT producing sectors led the Japanese business cycle as the contribution of IT producing sectors to the aggregate industrial growth rate notably increased after 2000. Finally, although their cycles were somewhat smaller from 2002 to 2007, IT producing sectors have been going into a rather deep recession since early 2008 as their inventory cycles demonstrate well.

In Part II we present the results of our input-output analysis of the IT industry in the broad sense from 1990 to 2005 including application service sectors such as software developers, information providers, and content producers. This analysis reveals that induced production and induced value-added of the IT producing sectors have increased overall since 1990. Although
they both dipped from 2000 to 2005 due mainly to the shrinking IT hardware sector, induced value-added of the IT industry was still greater than that of the automobile industry. Analysis using disaggregated data reveals that an increase in imports in the hardware sector caused a decrease in economic ripple effects, while the application service sectors expanded in the IT producing industry. We can therefore conclude that IT producing sectors, especially software developers, information providers, and content producers, rather than hardware manufacturers, are the main sectors in the expansion of the economy.

In Part III we conducted a growth accounting analysis of the last 30 years, reviewing information technology’s contribution to economic growth. This analysis yielded two observations. First, Japan experienced a massive IT investment boom in the late 1980s with a resultant productivity surge in both aggregate labor productivity and total factor productivity (TFP). Second, the investment boom, however, ended abruptly in the early 1990s when new types of open-network technology surged throughout the world. Since then, information technology has not contributed to changes in productivity growth. Therefore, it can be concluded that there is neither a “Solow paradox” nor a “new economy” in Japan.

In Part IV we show the results of our estimation and simulation of production function models that incorporated IT capital stock and network effects explicitly, exploring whether it is realistic to assume that information technology can indeed contribute to and accelerate Japan’s future economic growth. These analyses yielded two observations. First, estimation of the production function model proves that IT capital stock and network effects markedly influenced the economy, which suggests that the sluggishness IT investment plunged the economy onto a lower growth path after the 1990s. Second, simulations of the production function model
demonstrate that the economy has the potential to grow at a higher rate than the consensus of less than two percent. Consequently, it can be argued that the Japanese economy still has room to accelerate if it can somehow maximize the benefits of innovation, which for the last decade the economy has so far failed to do.

To sum up these analyses, we conclude that first, IT producing sectors led the Japanese business cycle over the last decade but these sectors have been going into a rather deep recession since early 2008; second, IT producing sectors, especially application service providers such as software developers, information providers, and content producers, turbo-charged the economic expansion; third, IT using sectors, however, seem to have fumbled the benefits of IT innovation in terms of intensive investment and effective use of the technology; fourth, it is feasible to expect that the economy will grow at a clip of around two and half percent annually if intensive investment and effective use of technology expand across all industries.
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Part I. Analysis of the IT Producing Sector Business Cycle

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Masato NOGUCHI

Abstract

In Part I, using IT-related economic indicators developed from government statistical data, we analyzed the business cycle of IT producing sectors and the impact of these sectors on the Japanese business cycle. This analysis revealed that the IT production growth rate has been larger than total industrial production since the mid 1980s. Moreover, the contribution ratio of IT production to the industrial production growth rate has increased notably since 2000. IT producing sectors have led the Japanese business cycle over the last decade. Finally, although the size of the IT inventory circle decreased from 2002 to 2007, it might prove to be larger starting with early 2008, when IT producing sectors started going into a rather deep recession.

1. Introduction

Since government statistical data for IT producing sectors are scattered, quantitative analyses of these sectors are difficult. It is very important, however, to measure quantitatively how vital IT producing sectors are to the Japanese business cycle and to analyze the contributory factors of IT producing sectors to the business cycle. However, we need to develop a database for the demand side in order to analyze these contributory factors. Thus, using government statistics, we developed IT-related economic indicators that include supply side and demand side data to enable us to analyze the impact of IT producing sectors.

With these indicators we conducted a business cycle analysis. First, we analyzed the
fluctuation of IT production and the impact of IT producing sectors on the Japanese business cycle since 1985. Using demand side data, we also analyzed the underlying factors of business cycles in IT producing sectors. Finally, we conducted an inventory cycle analysis from which we were able to see changes in inventory cycles that were caused by IT producing sector cycles.

2. Analytical framework

To analyze business cycles, we used IT-related economic indicators, culled from government statistical data, including both supply and demand side data. For the supply side, we developed production and service indicators and for the demand side, indicators corresponding to each component of the GDP were created using proxy data (the data is not completely consistent with the GDP).

Our analysis used IT-related economic indicators subdivided into three parts. First, we employed the average of the year-over-year growth rate for the IT-related production indicator and the industrial production indicator by business cycle. Second, we applied contributions of IT-related economic indicators to the year-over-year growth rate of the corresponding economic indicators to analyze the impact of IT producing sectors on the Japanese business cycle. Third, we used the IT inventory chart that was developed from the year-over-year growth rate of the IT-related production indicator and the IT-related inventory indicator.

1 A report using IT-related Economic Indicators is published quarterly. See InfoCom Research, Inc. (2008).
2 Based on the Working Group of Indexes of Business Conditions, the ESRI (Economic and Social Research Institute) has determined the peaks and the troughs of business cycles.
3 As for production and service data before 1997, the IT-related economic indicator was developed from linked indices, which were developed from indices for the new base year from revisions of the base year. The sum of contributions for each item does not equal the year-over-year growth rate of the corresponding economic indicator. The contribution of non-IT to the year-over-year growth rate of the corresponding economic indicator is calculated using the equation year-over-year growth rate – the contribution of IT. This value does not equal the contribution calculated from 1995 base year data.
3. Dataset and overview of IT-related economic indicators

As for the IT-related economic indicators, each indicator is the sum of the value of IT items or the sum of weighted indices of IT items. Table 1-1 shows the IT items used to develop the IT-related economic indicators.

(Table 1-1)

Production⁴ and service are in real-base⁵ and others are in nominal-base. As mentioned above, demand side indicators corresponding to each component of the GDP were developed using proxy data. To be specific, demand side indicators consist of private investment, consumption, public investment, exports, and imports. Figures from orders received for machinery were used for investment. Private investment indicators were developed using figures from private-sector demand. Furthermore, public investment indicators were developed from government figures for demand. It is important to note that the number of orders received for machinery is the leading investment indicator and we primarily used the IT-related production indicator to analyze the business cycle.

To compare the degree of fluctuation, we calculated the average year-over-year growth rate for the IT-related production indicator and the industrial production indicator for each business cycle since 1986. To simplify the chart, we developed an index in which industrial production and IT production were normalized to 100 in each trough of a business cycle⁶.

Furthermore, we calculated contributions of IT-related economic indicators to the

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⁴ 2005 base indices of industrial production data was developed after 2003. The IT-related production indicator before 2002 was developed to meet the condition that the contributions of IT items equal that which was calculated from 2000 base data. See Yamamoto (2008).

⁵ The base year of the production index is 2005 and the base year of the service index is 2000.

⁶ We do not use the original IT-related production index because of the shift caused by the revision of the base year. We use the IT-related production index developed from a year-over-year growth rate that does not include the impact of the revision of the base year.
year-over-year growth rate of corresponding economic indicators. For example, the production indicator (economic indicator corresponding to the IT-related production indicator) is the industrial production index. For value data such as consumption, the economic indicator is the sum of the value of all the items. However, for private investment, the economic indicator is the sum of the values excluding volatile orders (ships and electricity suppliers). The point is that degrees of contributions were calculated by excluding the impact of revisions. If IT items were included or excluded because of revisions, contributions were calculated applying other items that could be used over two periods. The growth rate of the IT-related economic indicator was calculated the same way. Table 1-2 illustrates the growth rates and contributions of IT-related economic indicators.

(Table 1-2)

As for the IT inventory chart, the IT-related inventory indicator was developed using the inventory indices from *The Indices of Industrial Production*, as was the IT-related production indicator. The vertical axis shows the year-over-year growth rate of the inventory indicator, and the horizontal axis shows the year-over-year growth rate of the production indicator. The upper left area of the forty-five degree line shows economic expansion, and the lower right area shows recession. The point on the chart moves counterclockwise and describes a circle.

4. Results of the business cycle analysis

4-1. An average IT production growth rate according to the business cycle

Figures 1-1 to 1-4 show the IT-related production indicator and the industrial production indicator normalized in each business cycle.
All IT-related production indicators were higher than the industrial production indicators. It is clear that IT production moved significantly in each business cycle after 1986.

It is important to note that the difference is caused by the IT production indicator in between business cycles. Table 1-3 shows an average of a growth rate of the IT-related production indicator and the industrial production indicator according to the business cycle. The IT-related production indicator ranges from –18.0 to 20.8, which is more than twice the industrial production indicator (from –7.4 to 5.7). The maximum value is found in the 13th business cycle (from 1999/1-3 to 2000/10-12), which is about double the value of the others. The increase in IT production was significant in this period, however, IT production growth moderated during the 14th business cycle. We can conclude that the IT production growth rate was higher than the whole of industrial production.

4-2. The contribution of IT production to the growth of industrial production

Figure 1-5 shows the long-term trend of IT production and causal factors of the IT business boom. The line graph shows the year-over-year industrial production growth rate and the bar graph illustrates the contribution of the IT-related production indicator and non-IT production to

\[\text{Note that a number of data varies by business cycle and is small in several business cycle.}\]
the year-over-year industrial production growth rate.

(Figure 1-5)

Figure 1-5 shows how IT production triggered the increase in industrial production. Though the ratio of IT production contribution to the growth of the industrial production was low prior to 1999, it increased after 2000. Before 1999, the average contribution ratio of IT production was at most 30% (30.7% from 1987I to 1989IV and 18.9 from 1990II to 1991III). On the other hand, after the year 2000, the average IT production contribution ratio was at least 40% (70.2% from 1999III to 2000IV and 41.19% from 2005IV to 2008II\(^8\)). From 1999III to 2000IV (IT bubble in the U.S.A.), the contribution ratio of IT production to the growth rate of industrial production was very high because of the increase in IT investment goods bound for the U.S. Though the 2001 recession was severe, consumer demand for cell-phones and TV-centric digital consumer electronics, precipitated by events such as the FIFA World Cup and the Salt Lake City Olympics, etc., increased IT production after the second half of 2002. The contribution ratio of IT production decreased but still remained relatively high. IT production decreased in 2005 due to a worldwide IT inventory adjustment, but the decline was not serious because it was much smaller than the 2001 recession. Since 2006, the Apple i-Pod boom, MNP (mobile number portability), and the launch of Windows Vista, etc. increased IT production. In 2008III, IT production declined for the first time in 13 quarters due to the fall in foreign demand caused by the worldwide economic recession.

To better understand the IT production trend mentioned above, it is important to analyze the disaggregated data. Figure 1-6 shows the contribution of each IT-related item to the

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\(^8\) We calculate an average in the period that both a growth rate of the IT-related production indicator and the index of
year-over-year industrial production growth rate. The line graph illustrates the contribution of the IT-related production indicator and the bar graph shows the contribution of each item.

(Figure 1-6)

In 2000, the contributions of integrated circuit, electric parts, semiconductor and flat-panel display manufacturing equipment were substantial. On the other hand, since the contribution of flat-panel display manufacturing equipment was not significant in 2003, we can conclude that the increase in production did not affect equipment production during this period. The contributions of integrated circuits and electric parts were high in all periods. The point is that intermediate goods are at the core of Japanese IT production and are affected by final demand.

As for the IT boom in 2000, Table 1-2 shows that the growth rates of the IT-related consumption indicator, the IT-related investment indicator (private-sector), and the IT-related export indicator were all positive. In particular, the growth rate of the IT-related export indicator was at its highest from 1999 to 2007. It is reasonable to assume that the growth was caused by the increase in exports of investment goods shipped to the U.S. (which was experiencing an IT investment boom). Both domestic and foreign demand were strong in 2000. The growth rates of the IT-related consumption indicator and the IT-related investment indicator (private-sector) were positive in 2003. The IT-related export indicator, however, was negative that year. As mentioned above, consumer demand for cell-phones and TV-centric digital consumer electronics increased IT production. It is often said that the business boom after 2003 was export-driven. The IT business boom, however, was certainly not export-driven.

These differences in the IT booms are significant. Table 1-3 shows the IT business booms
by type of final demand. The lower right cell in the table shows the 2000 IT business boom, which was driven by foreign corporate investment. Furthermore, the upper left cell shows that the type of IT boom seen in 2002-2003 was spurred by domestic personal consumption. As for controllability, foreign demand, as a rule, is more difficult to control than domestic demand since there is little influence from domestic economic policies. Concerning fluctuation, investment fluctuation is greater than that of consumption. So it is possible to say that these two factors (foreign demand and corporate investment) caused the massive growth of IT production in 2000. On the other hand, the growth of IT production caused by domestic personal consumption after the second half of 2002 was moderate.

4-3. An IT production inventory chart

Figure 1-7 (IT inventory chart) shows the inventory cycle of IT production and industrial production from 1999I to 2008IV.

(Figure 1-7)

The IT production inventory cycle can be subdivided into four circles. The first (from 1999I to 2002IV) was very large and corresponds to the IT investment boom in the U.S. As mentioned previously in 4-2, the IT production fluctuation was substantial and IT inventory fluctuation was also significant. It is not surprising that the adjustment to production was sizeable because the production increase was considerable.

The second circle (from 2002IV to 2005IV) is smaller than the first. There is a small irregular circle under the forty-five degree line caused not by one event but several events (FIFA World Cup, Salt Lake City Olympics, etc.) as mentioned above. The point is that when the
driving force of one event subsided, the push of another event intensified.

The third circle (from 2005IV to 2007IV) is smaller than the second. It is important to note that several events caused a slight boom and IT production did not decrease during this period. From 2002IV to 2007IV, the circle of the IT inventory cycle was reduced in size.

In 4-2, we show which type of final demand (foreign or domestic demand or personal consumption or corporate investment) influenced the IT business boom. Using the IT inventory chart we verified the influences of the type of final demand. Though the circle of the IT inventory cycle was reduced in size, it was still larger than that of the industrial production. It is essential to note that IT production decreased in 2008III, and the decrease was greater than in 2005II, in the second circle. Furthermore, the decrease in 2008IV was substantial. This decline was caused by the worldwide business recession triggered by the subprime crisis in the U.S. Since the domestic economic policies of one country do not usually affect a recession in another country, the fourth circle (from 2007IV) might be larger than the first circle (from 1999I to 2002IV). We can conclude that even though the circle of the IT inventory cycle shrank from 2002 to 2007, an increase in size could be seen in early 2008. So the recession in place since early 2008 in IT producing sectors appears to be rather severe.

5. Conclusion

In this research, using the IT-related economic indicators, we examined business cycles of IT producing sectors and the impact of IT producing sectors on the Japanese business cycle. Our analysis is divided into three parts. First, the analysis used the average of year-over-year growth rate of the IT-related production indicator according to the business cycle. This revealed that the
growth rate of IT production was larger than industrial production as a whole since the mid
1980s. Second, contributions of IT-related economic indicators revealed that the contribution
ratio of IT production to the industrial production growth rate increased significantly since 2000
and IT producing sectors led the Japanese business cycle over the last decade. Third, the IT
inventory chart revealed that though the circle of the IT inventory cycle was reduced in size from
2002 to 2007, inventory growth has been evident since early 2008 and the IT producing sectors
appear to be falling into a rather severe recession.
References


## Tables and Figures

Table 1-1. IT items used to develop IT-related Economic Indicators

<table>
<thead>
<tr>
<th>IT Production</th>
<th>IT Service</th>
<th>IT Capital Investment</th>
<th>IT Consumption</th>
<th>IT Export and Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Indicator</td>
<td>(private, public)</td>
<td>Indicator</td>
<td>Indicator</td>
</tr>
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<td>Original</td>
<td>Statistics</td>
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<td></td>
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<td>Indices of</td>
<td>Indices of</td>
<td>Survey of Orders</td>
<td>Family Income</td>
<td>Trade Statistics,</td>
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<td>Tertiary</td>
<td>Received for</td>
<td>and Expenditure</td>
<td>Ministry of Finance</td>
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<td>Production</td>
<td>Industry Activity</td>
<td>Machinery, Cabinet Office</td>
<td>Survey, Ministry of Internal Affairs and Communications</td>
<td></td>
</tr>
<tr>
<td>Ministry of</td>
<td>Ministry of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economy, Trade and Industry</td>
<td>Economy, Trade and Industry</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Electric wires and cables※1</td>
<td>Fixed Telecommunications</td>
<td>Electronic computers</td>
<td>Telephone charges</td>
<td>Office machines※13</td>
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<tr>
<td>Semiconductor and flat panel display manufacturing equipment※2</td>
<td>Mobile Telecommunications</td>
<td>Communication equipment※6</td>
<td>Mobile telephone Charges※7</td>
<td>Computers and units※14</td>
</tr>
<tr>
<td>Other industry machinery※3</td>
<td>Custom software services※5</td>
<td>Semiconductor making equipment</td>
<td>Mobile telephone※8</td>
<td>Parts of computers※14</td>
</tr>
<tr>
<td>Electrical measuring instruments※1</td>
<td>Package software services※5</td>
<td>Other communication equipments※9</td>
<td>Telephony, telegraphy※15</td>
<td></td>
</tr>
<tr>
<td>Communication equipment</td>
<td>System management on commission, etc.※5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic computers</td>
<td>Other data processing and information services※5</td>
<td></td>
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<td>Electronic parts</td>
<td>Information related equipment lease</td>
<td></td>
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<tr>
<td>Semiconductor devices</td>
<td>Information related equipment rental※5</td>
<td>Other recreational durable goods</td>
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<td>Integrated circuits</td>
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<td>Audio video disc※11</td>
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<td>Semiconductor parts</td>
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<td>Batteries※4</td>
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<td>Pre-recorded recording media※12</td>
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<td>sum up weighted indexes</td>
<td>sum up value</td>
<td>sum up value</td>
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<td>note</td>
<td>※1: Excluded after 2003</td>
<td>※5: Included after 1988</td>
<td>※6: We use two-or-more-person households (excluding agricultural, forestry and fisheries households) data.</td>
<td>※13: Excluded after 2005</td>
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<td></td>
<td>※2: Special industrial machinery before 2002</td>
<td>※7: Included after 2000</td>
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<td>※14: Included after 2005</td>
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<td></td>
<td>※4: Included after 2003</td>
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<td>※10: Included after 1980</td>
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<td>※11: Excluded after 2005</td>
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<td>※12: Included after 2005</td>
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Table 1-2. Growth rates and Contributions of IT-related economic indicators

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Capital investment (private-sector)</th>
<th>Consumption</th>
<th>Capital investment (government)</th>
<th>Trade</th>
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<td>Industry and service</td>
<td>growth rate</td>
<td>year-over-year growth rate</td>
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<td>2007/1Q</td>
<td>4.9</td>
<td>1.8</td>
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<td>3.2</td>
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<td>2007/2Q</td>
<td>4.7</td>
<td>1.6</td>
<td>0.9</td>
<td>0.0</td>
<td>3.2</td>
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<td>1.5</td>
<td>0.9</td>
<td>0.0</td>
<td>3.2</td>
</tr>
<tr>
<td>2007/4Q</td>
<td>4.8</td>
<td>1.7</td>
<td>0.9</td>
<td>0.0</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Source: Author’s calculation from *Industries of Industrial Production, Indeces of Tertiary Industry Activity, Ministry of Economy, Trade and Industry, Survey of Orders Received for Machinery, Cabinet Office, Family Income and Expenditure Survey, Ministry of Internal Affairs and Communications, Trade Statistics, Ministry of Finance.*
Figure 1-1. The IT-related production indicator and the industrial production indicator in the 11th business cycle

![Graph showing the IT-related production indicator and the industrial production indicator in the 11th business cycle.]

Source: Author’s calculation.

Note1: Indices are normalized to 100 in each trough of the business cycle.

Note2: I - IV show quarters of calendar year.

Figure 1-2. The IT-related production indicator and the industrial production indicator in the 12th business cycle

![Graph showing the IT-related production indicator and the industrial production indicator in the 12th business cycle.]

Source: Author’s calculation.

Note1: Indices are normalized to 100 in each trough of the business cycle.

Note2: I - IV show quarters of calendar year.
Figure 1-3. The IT-related production indicator and the industrial production indicator in the 13th business cycle

Source: Author’s calculation.

Note1: Indices are normalized to 100 in each trough of the business cycle.

Note2: I - IV show quarters of calendar year.

Figure 1-4. The IT-related production indicator and the industrial production indicator in the 14th business cycle (current)

Source: Author’s calculation.

Note1: Indices are normalized to 100 in each trough of the business cycle.

Note2: I - IV show quarters of calendar year.
Table 1-3. The average growth rate of the IT-related production indicator and the industrial production indicator by business cycle

<table>
<thead>
<tr>
<th>Business Cycle</th>
<th>Turning Points (quarter)</th>
<th>Number of quarter</th>
<th>Industrial year-over-year growth rate</th>
<th>IT year-over-year growth rate</th>
<th>IT contribution</th>
</tr>
</thead>
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<tr>
<td>The 11th, Peak</td>
<td>1986/10-12</td>
<td>17</td>
<td>5.7</td>
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<td>The 11th, Trough</td>
<td>1991/1-3</td>
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<td>-3.3</td>
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<td>The 12th, Peak</td>
<td>1993/10-12</td>
<td>14</td>
<td>2.7</td>
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<td>1.2</td>
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<td>1997/4-6</td>
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<td>-0.2</td>
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<td>The 13th, Peak</td>
<td>1999/1-3</td>
<td>7</td>
<td>4.0</td>
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<tr>
<td>The 13th, Trough</td>
<td>2000/10-12</td>
<td>5</td>
<td>-7.4</td>
<td>-18.0</td>
<td>-3.4</td>
</tr>
<tr>
<td>The 14th, Trough</td>
<td>2002/1-3</td>
<td>27</td>
<td>2.2</td>
<td>6.9</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: Author’s calculation.

Figure 1-5. Long trend of IT-related production and causal factors of the IT business boom

Source: Author’s calculation.

Note: I - IV show quarters of calendar year.
Figure 1-6. The contribution of each IT-related item to the year-over-year growth rate of industrial production

Source: Author’s calculation.

Note: I - IV show quarters of calendar year.

Table 1-4. IT business booms by type of final demand

<table>
<thead>
<tr>
<th></th>
<th>Personal consumption</th>
<th>Corporate investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic demand</td>
<td>2002-03 type</td>
<td>1995 type</td>
</tr>
<tr>
<td></td>
<td>(cell-phone unit</td>
<td>(PC • mobile</td>
</tr>
<tr>
<td></td>
<td>• digital consumer</td>
<td>communication</td>
</tr>
<tr>
<td></td>
<td>electronics)</td>
<td>base station)</td>
</tr>
<tr>
<td>Foreign demand (Export)</td>
<td>Early 1980’s</td>
<td>2000 type</td>
</tr>
<tr>
<td></td>
<td>(automobile • home</td>
<td>(Worldwide IT boom)</td>
</tr>
<tr>
<td></td>
<td>electronics)</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1-7. The IT inventory chart

Source: Author’s calculation.

Note: I - IV show quarters of calendar year.