Will the Sun Also Rise?  
Five Growth Strategies for Japan  
Yoko Takeda

1 - Introduction
The “most trite yet crucial question” in the field of economic growth and development is: why are some countries much poorer than others?²

Japan has undergone two full-fledged political, economic, and institutional reformations since the 18th century. The first was prompted by the Meiji restoration in 1867, and the second occurred during Japan’s post-World War II reconstruction. As Glenn Hubbard and Tim Kane note, three decades after the Meiji restoration/reformation, Japan’s gross domestic product (GDP) per capita had grown by 70 percent, and by 1913 it had doubled outright.³ By 1938, it had doubled again. Daron Acemoglu, Simon Johnson, and James A. Robinson emphasize the institutional aspects behind the early phase of the Japanese growth story, noting that “by 1890, Japan was the first Asian country to adopt a written constitution, and it created a constitutional monarchy with an elected parliament, the Diet, and an independent judiciary.”⁴

In the postwar era, Hiroshi Yoshikawa identifies the fifteen years from 1955 to 1970 as the Japanese economy’s high-growth period.⁵ I largely follow Yoshikawa’s definition of the high-growth period in this paper, but sometimes extend it to cover 1954 to 1973. A few numbers are worth noting: on average, Japan’s real GDP per capita grew by 8.7 percent annually from 1955 to 1970 (see Chart 1.1). Debate is still underway as to the precise factors that enabled this rapid growth. Most existing studies consider the prime factors to have been demographics (even if per capita GDP is taken into consideration), the so-called “catching-up” hypothesis, and innovation. Section 2 of this paper examines these issues in greater detail.

Since the mid-1990s, Japan has been mired in the so-called “lost decades” – a protracted period of economic stagnation. It has struggled with problems in the financial sector, illustrated by massive stocks of non-performing loans (NPLs), and the challenge of long-lasting deflation (Chart 1.2).

The remainder of this paper looks briefly at Japan’s rise and fall in the postwar period and discusses what has been “found and lost” since the 1950s. It then focuses more extensively on what Japan “lost” in the mid-1990s. In some cases, factors that aided Japan’s development earlier in the postwar period became entrenched and turned into weaknesses. Acemoglu and Robinson’s

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¹ Yoko Takeda is Chief Economist at the Mitsubishi Research Institute, Tokyo. In 2015, she was a Visiting Scholar with the Japan and Simon Chairs at the Center for Strategic and International Studies in Washington, D.C.
⁴ Acemoglu, Johnson, and Robinson.
“dead hand of vested interests” began to hamper the process of innovation and change. Along with this issue, I raise seven turning points for considering why Japan lost its strength over the lost two decades. After considering what was “found and lost,” this paper then presents a policy package for reinvigorating the Japanese economy composed of “Five Ds”: dynamic labor markets; diversity; destructive innovation; decentralization (or disinvestment from Tokyo); and deleveraging.

Chart 1.1: Japan’s GDP and Per Capita GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP (millions of $)</th>
<th>Population</th>
<th>Per Capita GDP (1990 Int$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>3,000</td>
<td>120</td>
<td>2,000</td>
</tr>
<tr>
<td>1990</td>
<td>3,600</td>
<td>125</td>
<td>2,800</td>
</tr>
<tr>
<td>1995</td>
<td>4,200</td>
<td>130</td>
<td>3,000</td>
</tr>
<tr>
<td>2000</td>
<td>4,800</td>
<td>135</td>
<td>3,500</td>
</tr>
<tr>
<td>2005</td>
<td>5,400</td>
<td>140</td>
<td>4,000</td>
</tr>
<tr>
<td>2010</td>
<td>6,000</td>
<td>145</td>
<td>4,500</td>
</tr>
</tbody>
</table>


Chart 1.2: Japan’s Real GDP Growth Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP (% change)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>4.5</td>
</tr>
<tr>
<td>1990</td>
<td>2.0</td>
</tr>
<tr>
<td>1995</td>
<td>1.5</td>
</tr>
<tr>
<td>2000</td>
<td>0.5</td>
</tr>
<tr>
<td>2005</td>
<td>0.0</td>
</tr>
<tr>
<td>2010</td>
<td>-0.5</td>
</tr>
</tbody>
</table>

Sources: Cabinet Office “SNA (National Accounts of Japan)”

2 - Why Japan Lost its Strength over the Lost Two Decades: Seven Turning Points

2.1 - Japan’s Peaking and Soon-to-Be-Declining Labor Force

Chart 2.1 presents an estimate of the past and future of Japan’s population from the National Institute of Population and Social Security Research (NIPSSR). The solid line shows Japan’s population steadily increasing from the Meiji era through 2012, when it peaked at 127 million. Japan’s population subsequently begins the slow process of falling back to the level of that in the Meiji era. By 2060, NIPSSR projects Japan’s population will decrease to 87 million – a level comparable to that of the 1950s. Given that Japan’s birth rate is expected to remain at the current ultra-low level, the rest of the world could well find Japan a tiny country in 2100, much the way it appeared when the world discovered it at the start of the Meiji era. This is the quiet warning posed by the Institute’s projection.

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Japan’s working-age population peaked in 1995 and started declining thereafter (Chart 2.2). In general, long-term economic growth depends – albeit not necessarily equally – on three factors: labor input, capital input, and technological progress. More workers and capital accumulation contribute to more production. On the flip side, a declining labor force reduces output (Chart 2.3). Labor input depends on the size of the total working-age population. While the definition of working-age population varies slightly across jurisdictions, a popular measure is the number of individuals between the ages of 15 and 64.

Two factors have led to the decline in Japan’s working-age population: (i) a declining birth rate and (ii) population aging. In 1950, the ratio of over 65 year-olds to the total population was less than 5 percent. By 1970, this ratio had risen to 7 percent, and reached 14 percent in 1994. By this point, the notion of a “graying society” was well-established. In 2013, 25 percent of Japan’s population was over the age of 65.

As noted earlier in this section, policymakers were struggling with NPLs in the mid-1990s. It took time for their efforts to materialize, leading to more than ten years focused on financial sector reforms. Meanwhile, problems stemming from the ultra-low birth rate went unnoticed. Demographic issues should have been prioritized earlier, but serious discussion did not start until the 2000s. A prime illustration is the shortage of childcare centers. As this shortage has intensified in recent years, it has drawn increasing attention, but policy responses have emerged slowly. This shortage has contributed to a further decline in the birth rate and impeded women’s participation in the labor force. Due to the confluence of these trends, the labor force in Japan has been quietly decreasing. In my view, the tapering of the labor force was one of the most important factors that “turned” during Japan’s two lost decades.
2.2 - End of Two Catch-up Attempts

The rapid growth of the Japanese economy in the post-WWII period – as well as the modernization of its national economic system and the technological advancement of its private sector – is partly due to Japan’s “catching up” with the U.S. and western European economies. Japan’s per capita GDP, which was 20 percent of the U.S. level in the 1950s, rose to 70 percent by the end of the so-called “high-growth era” in the 1970s. Hubbard and Kane describe a Japanese “supermodel” characterized by (i) elite bureaucrats, politicians, and bankers working together in pursuit of a common goal as part of “Japan Inc.” and (ii) highly educated, diligent workers willing to save for tomorrow rather than consume today. Hubbard and Kane further argue that the supermodel had operated in pursuit of a single national objective since the Meiji restoration: catch up with the United States and Western Europe. This remained unchanged for a long time and was supported by broad popular enthusiasm. In a nutshell, the process of catching up with frontrunners promoted Japan’s productivity growth.

In the early 1990s, Japan’s per capita GDP reached almost 90 percent of the United States’. That was the end of the catching-up story. Japan not only failed to outgrow the United States, it failed to fully catch up. The explanation Hubbard and Kane provide is that Japan’s “managed capitalism” was a great model for catching up with the frontier, but moving beyond that frontier required replacing Japan Inc. with entrepreneurial capitalism. Japan Inc. had succeeded in providing secure jobs to a massive labor force, but, precisely because it was so successful, there was little incentive for an entrepreneurial spirit to develop. Japan’s model did not generate pioneering innovation, which is one of the main characteristics of the American

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8 Hubbard and Kane.
9 Hubbard and Kane.
economy. The lack of entrepreneurship may be affecting (and affected by) other issues discussed later in this paper.

*Chart 2.4: Per Capita GDP*

Japan demonstrated a model that a number of countries followed, including South Korea since the 1990s and China since the 2000s. Korea’s GDP per capita increased from 56 percent of Japan’s in 1990 to almost 90 percent in 2013. China’s GDP per capita is currently around 30 percent of Japan’s, but has grown rapidly from 8 percent in the 1990s (Chart 2.4). Based on Hubbard, Kane, and others, I suggest the following hypothesis on the rise and fall of the Japanese economy: Japan was successful in establishing a supermodel in pursuit of the frontier, but it could not evolve into a new model to push the frontier outward.\(^\text{10}\) As a result, while Japan was dawdling a few steps from the frontier, Korea successfully caught up with Japan.

The International Institute for Management Development (IMD) world competitiveness ranking provides some insights in line with this hypothesis.\(^\text{11}\) In the mid-2000s, Japan’s IMD rank improved somewhat, and has been climbing since the second Abe administration took power in late 2012. However, taking a longer perspective, Japan’s IMD ranking has been lackluster for years (Chart 2.5). By comparison, the United States has, by and large, kept the top rank since 1994. Germany, whose rank fell in the mid-2000s, has ranked within the top 10 following a remarkable comeback. In the meantime, Korea and China have been steadily climbing the charts. Back in the early 1990s, Japan ranked above them by a margin of 30 percent. More recently, these three East Asian countries have been engaged in a rivalry with thin margins.

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\(^{10}\) Hubbard and Kane.

The IMD ranking is computed by integrating multiple sub-measures, such as economic performance, government efficiency, business efficiency, infrastructure, and so forth. The 2014 results rate Japan second (after the United States) in terms of scientific infrastructure, which consists of total national expenditure on research and development, scientific articles, Nobel Prizes, patent applications, and other related metrics. A key implication of the 2014 results is that Japan’s high competitiveness in scientific infrastructure does not translate into business efficiency, in which Japan ranks 19th. Business efficiency is a combination index, and Japan’s evaluations measured by the sub-components of this index are markedly low. For example, Japan ranks 42nd in adaptability of companies to market change, 54th in flexibility and adaptability, and 55th in entrepreneurship (Chart 2.6). In sum, Japan has highly valued technologies in basic and theoretical research areas, but such valuable technologies are not well-applied to practical uses. Accordingly, the key challenges for Japan are two-fold: (i) for researchers, possibly with help of business experts, to learn entrepreneurship so that their valuable technologies can be better marketed; and (ii) for existing firms to better apply newly invented technologies to their business. For both challenges, better marketing skills are needed to translate in-laboratory technologies into business competitiveness.

### 2.3 - Low Turnover, Turnaround, and Small Number of Start-Ups

It has been widely said that the low productivity of the Japanese corporate sector – and the service sector in particular – stems from low business turnover. As mentioned in section 2.1, the decline in the working-age population has hampered economic growth since the mid-1990s, but labor input is not the entire reason. Other factors held constant, the marginal products of both labor and capital have been experiencing decreasing returns, just as articulated in production theory in microeconomics textbooks. Accordingly, as an economy grows with labor and capital, total factor productivity (TFP) increasingly becomes the important factor for sustained growth.
Relatedly, Yoshikawa points out that Japan’s high growth rates during the 1960s could be attributed to innovations rather than simple catching up with the frontrunners. Yoshikawa’s view is, at least in part, in contrast to that of Hubbard and Kane outlined in section 2.2. Yoshikawa points to two empirical findings. First, Japan has achieved the highest productivity of any advanced industrial nation in machinery and material industries, such as electrical machines, automobiles, iron and steel, non-ferrous metals, pulps, and papers. Second, from 1945 to the 1960s, a number of well-known Japanese firms were born that later invented/created new ideas, innovations, and technologies. For example, Tokyo Communication Industry Ltd., which later came to be known as Sony, was founded in 1946. Honda Ltd. and Sanyo were established in 1948 and 1950, respectively.

Bearing this in mind, some may identify low turnover and very few start-ups in the current Japanese economy as the key impediments that hamper economic growth and contribute to the declining trend in TFP (Chart 2.7). Old firms with low productivity tend to remain in the market, while new entrants with high productivity are rarely observed. As a result, average productivity declines. Takeo Hoshi and Anil Kashyap argue that, although firms with low profitability/productivity should discontinue their business and leave the market, creditors and governments support these low-performing “zombie” firms:

Deterioration of macroeconomic efficiency stems from misallocation of labor… lower lending standards in the post-bubble period in the 1990s quickly spawned the zombie firms, which hoarded sizable amounts of skilled labor...If such support measures (e.g., low lending standards, generous accounting rule changes) had not been deployed, the zombies would have discontinued their businesses in earlier phases.

If that had been the case, highly skilled labor could have been reallocated more smoothly and quickly from the zombie firms to high-profitability firms. Misallocation of labor due to excessive support for zombie firms undermined labor productivity. At the minimum, I can point to two data points that support Hoshi and Kashyap’s view.

First, data on corporate entry and exit rates in Japan show that the entry rate has been on a downward trend, while the exit rate has remained broadly steady at a low level (Chart 2.8). Until the 1980s, the entry rate was above 5 percent. Since the 1990s, the entry rate has declined to around 3.5 percent. More puzzling is that the exit rate did not rise in the 1990s even as the non-performing loan issue was drawing significant attention. In the 2000s, when public bailouts were engineered for some firms, the exit rate rose slightly. Most surprisingly, the exit rate

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12 Yoshikawa.
15 In a similar context, Foster, Grim and Haltiwanger show that firms with high TFP growth expand employment more quickly than those with low TFP growth rates. More specifically, firms with low TFP growth tend to cut employment, and over time, close their business with high probability. Given their findings, more new entrants, replacing zombies, would raise TFP and increase employment. Lucia Foster, Cheryl Grim, and John Haltiwanger, “Reallocation in the Great Recession: Cleansing or Not?,” US Census Bureau Center for Economic Studies Paper, No. CES-WP-13-42, 2013.
remained steady from 2007-2009 during the global financial crisis. One reason for this is a public assistance policy known as the Small and Medium Enterprises (SMEs) Finance Facilitation Act, under which cheap money was provided to certain SMEs regardless of their profitability/productivity. In the meantime, as already mentioned, the entry rate remained low. Hence, there is some evidence that potentially promising start-ups were crowded-out by the zombies.

**Chart 2.7: Japan’s TFP Growth**

**Chart 2.8: Japan’s Trends in Company Entry and Exit Rates**

**Chart 2.9: Total Early-stage Entrepreneurial Activity (TEA)**

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Note: Percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business.

Source: Global Entrepreneurship Monitor (GEM) “GEM 2013 Global Report”
Second, the level of entrepreneurial activity in Japan is low. The Global Entrepreneurship Monitor (GEM) indicates that Japan ranks 69th in total early-stage entrepreneurial activity among 70 countries (Chart 2.9). Looking into the key indicators of the GEM reveals that Japan is ranked 70th out of 70 countries in terms of both perceived opportunities and perceived capabilities. Similarly, Japan ranks 64th (among 65 countries) in entrepreneurship as a desirable career choice and 60th (among 66 countries) in high status successful entrepreneurship (Chart 2.10). These indicators are not another useless statistic. A cross-country regression confirms a significant positive correlation between this GEM index and per capita real GDP. This evidence suggests that Japan’s low productivity, or stagnant productivity growth, can be partly explained by the low activities of entrepreneurs.

In Japan’s post-bubble period, researchers observed the absence of the aforementioned replacement mechanism and the low activities of entrepreneurs, which can explain the steady declines in productivity growth rates.

**Chart 2.10: Global Entrepreneurship Monitor (GEM) Key Indicators: Japan’s Rank**

<table>
<thead>
<tr>
<th>Key Indicators</th>
<th>Ranking / All Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Opportunities</td>
<td>70th / 70 Countries</td>
</tr>
<tr>
<td>Perceived Capabilities</td>
<td>70th / 70 Countries</td>
</tr>
<tr>
<td>Entrepreneurship as Desirable Career Choice</td>
<td>64th / 65 Countries</td>
</tr>
<tr>
<td>Media Attention for Entrepreneurship</td>
<td>40th / 65 Countries</td>
</tr>
<tr>
<td>High Status Successful Entrepreneurship</td>
<td>60th / 66 Countries</td>
</tr>
</tbody>
</table>

Source: Global Entrepreneurship Monitor (GEM) “GEM 2013 Global Report”

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17 Kyoji Fukao and Hyeog Ug point out that manufacturers, raw material firms, and wholesalers and retailers, all of which led Japan’s rapid economic growth before the 1980s, were founded before 1974. The ratio of such old survivors amounts to 40-50 percent of all existing firms. Given their findings, they highlighted two characteristics of capital investment (capex) by firms: namely, (i) relatively younger firms have actively accumulated capital while old-aged firms and their subsidiaries and sub-contractors (i.e., ko-gaisha) tended to invest less. (ii) Among old firms, large manufacturers ramped up R&D investment and embarked on new projects in pursuit of globalization. A big caveat is that those large manufacturers did not expand domestic production while maintaining high productivity growth. Putting all these findings together, they concluded that the roles undertaken by young firms would be the biggest factor in predicting Japan’s future employment, capital accumulation and, ultimately, productivity growth down the road. Kyoji Fukao and Hyeog Ug Kwon, “Nihon Keizai Seicho no Gensen wa Dokoni Arunoka: Micro Data niyoru Jisso Bunseki,” RIETI Discussion Paper Series, 11-J-045, 2011 (in Japanese).
2.4 - Deteriorating Human Capital

In this section, I will discuss issues revolving around human capital, which affects GDP per capita. I will examine two aspects of human capital development: (i) issues regarding the tertiary and secondary education system; and (ii) intra-firm underinvestment in human capital.

2.4.1 - Decaying Educational Infrastructure

Until the late 1990s, there was growing criticism of the then-prevailing cramming education system. Against this backdrop, the curriculum in Japanese public high schools and junior high schools was diluted from the early 2000s. The new system was sarcastically dubbed “the pressure-free curriculum education system” (or “yutori education”), and later provoked backlash due to significant deterioration of students’ abilities in various subjects. In the pressure-free system, the overall curriculum, together with class hours, was downsized by 30 percent. The downsizing of the curriculum may have taken pressure off of students, but it simultaneously took away opportunities to gain knowledge and develop human capital during their school days. Some negative outcomes of the pressure-free system can be found, for example, in Japan's worsening performance on the Programme International Student Assessment (PISA) measures published by the OECD (Chart 2.11).

Chart 2.11: Programme for International Student Assessment (PISA): Japan’s Rank

<table>
<thead>
<tr>
<th>Year</th>
<th>Reading</th>
<th>Mathematics</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>8th / 32 countries</td>
<td>1st / 32 countries</td>
<td>2nd / 32 countries</td>
</tr>
<tr>
<td>2003</td>
<td>14th / 41 countries</td>
<td>6th / 41 countries</td>
<td>2nd / 41 countries</td>
</tr>
<tr>
<td>2006</td>
<td>15th / 57 countries</td>
<td>10th / 57 countries</td>
<td>6th / 57 countries</td>
</tr>
<tr>
<td>2009</td>
<td>8th / 65 countries</td>
<td>9th / 65 countries</td>
<td>5th / 65 countries</td>
</tr>
<tr>
<td>2012</td>
<td>4th / 65 countries</td>
<td>7th / 65 countries</td>
<td>4th / 65 countries</td>
</tr>
</tbody>
</table>

Source: OECD “Programme for International Student Assessment (PISA)”

Following the introduction of the new system, the PISA results showed noticeable deterioration in the quantitative literacy, reading comprehension, and scientific literacy of Japanese children at the age of 15. The PISA evidence contributed to the backlash against the pressure-free system, which was eventually replaced by a more intense curriculum similar to the old system. Following
this shift, the 2012 PISA results showed some signs of Japan recovering its global ranking. Nonetheless, Japan ranked 1st in mathematic performance in 2000, but 7th in 2012. Some lost capital has yet to be replenished.

For a long time, the Japanese primary and secondary education system has aimed at achieving “no children left behind” (NCLB), rather than sorting and screening elites for tertiary education. While this NCLB policy facilitated Japan’s development of a high-quality mass labor force, its dark side has increasingly been gaining attention. As discussed in section 2.2, during Japan’s catching-up process, the NCLB approach was an ideal way to build a high quality labor force capable of undertaking core roles in mass-production industries. On the other hand, in the era of information technology (IT), the knowledge-based economy has increased the need for innovators, highly skilled creators, scientists, well-trained engineers, and highly capable managers. These professionals are competitive individuals in global markets. Investing in human capital leads to successful business, and more profit attracts more human capital: a virtuous cycle now regarded as an essential practice in a number of growing industries.

Japan’s tertiary education system is also facing serious challenges from changing global competitors. While Japan’s corporate sector is considered top-ranked in terms of productivity, the country’s universities perform poorly in global rankings. For example, the 2013-2014 Times Higher Education survey ranks Japan’s best university, the University of Tokyo, 23rd globally. However, in terms of number of patent applications, reported by the World Intellectual Property Organization (WIPO), Japan ranks 2nd after the United States, which clearly shows its high performance by global standards. Looking at this data in more detail reveals the problem of Japanese educational institutions: among corporations, Panasonic ranks first for patents, and a number of other Japanese manufacturers are also ranked within the top 50. On the other hand, the top five spots for educational institution patent applications are all occupied by U.S. universities, while the University of Tokyo is ranked 15th. As Chart 2.12 illustrates, the total share of Japanese universities’ patent filings has also decreased. Meanwhile, some Asian countries (such as Singapore) are encouraging top U.S./European universities to establish satellite campuses in their countries. This is, again, in sharp contrast to the case of Japan. Japan is losing ground on educational infrastructure.

Because of the declining birth rate since the end of the second baby boom (1971-1974), the number of applicants to universities in Japan has also been decreasing. Given this trend, maintaining a high quality of freshmen would require proportionally downsizing admissions. Japanese universities have not scaled back admissions, which may have resulted in the deterioration of the quality of students’ abilities (Chart 2.13).

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Chart 2.12: University Share of Patent Cooperation Treaty (PCT) Filings


Chart 2.13: Numbers of Universities per Million People in Japan

Sources: Ministry of Education, Culture, Sports, Science and Technology “School Basic Survey,” Ministry of Internal Affairs and Communications “Population Estimates”
2.4.2 - Intra-Firm Underinvestment in Human Capital

Japan’s educational infrastructure has declined not only in relative terms, as its external competition has strengthened, but in absolute terms. Inside Japanese firms, there are also indications of declining investment in human capital. For example, Japanese firms have long traditions of providing financial support for their employees to study abroad, often at top U.S. universities. Many firms would pick a few employees per year and send them to U.S. universities – frequently funding all or part of their expenses – with the expectation that they would return to the firm with new knowledge and upgraded human capital. However, this tradition has been eroding across Japanese firms over the course of the lost two decades. Some survey data indicates that the lack of globally competitive human capital is hampering Japanese firms’ efforts to extend their business overseas and, hence, they are missing business opportunities.\(^{20}\)

A more serious issue in the context of intra-firm underinvestment in human capital is the rapid increase in non-regular workers (Chart 2.14). This issue is also known as labor market polarization, or the “hiseiki” problem. A number of studies, particularly those by Japanese labor economists, have repeatedly drawn attention to the repercussions of the steady and sizable increase in non-regular workers in Japan’s labor market.\(^{21}\) From the mid-1990s to mid-2000s, labor demand was weak due mainly to the adverse environment surrounding Japanese firms (e.g., intensifying domestic non-performing loan problems and the Asian currency crisis). During this period, many Japanese firms scaled back their business. By international standards, Japanese firms tend to rely less on layoffs for workforce adjustments, preferring instead to reduce new hiring.\(^{22}\) The period between 1995 and 2005 is widely known as the “ice age” for job seekers, meaning that it was very hard for university graduates to find regular positions as Japanese firms scaled back hiring. The result was that the number of young non-regular workers markedly increased over the period. At that point, each firm likely thought they were adjusting the size of employment in accordance with the macroeconomic conditions. Later, however, the increase in non-regular workers collectively undermined Japanese firms’ competitiveness at the aggregate level. As section 2.5 will discuss in detail, Japanese firms have long emphasized intra-firm employee education, including on-the-job training and other study opportunities. However, these intra-firm training opportunities were provided to regular workers only. In the short-run, firms were successful in cutting labor costs without shedding employment, but, over the medium- to long-term, it is likely that hiring more non-regular workers (who subsequently received less training than their regular counterparts) has led to underinvestment in human capital and, over time, contributed to lower productivity among Japanese firms.

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22 I will discuss Japan’s labor market rigidity and why dismissals and lay-offs are rare in Japan in greater detail in section 2.5.
2.5- Labor Markets: (i) Illiquidity and (ii) Immobility

Since the 1990s, as globalization has progressed, firms have been required to reallocate their resources, both labor and capital, more flexibly. It is critical for multinational firms to shift their resources in a timely manner to places where market demand is high and/or production cost is low. This means that sometimes firms need to retreat from places where they can find no advantages. From a macroeconomic standpoint, high labor market mobility is essential for firms to reallocate their labor forces flexibly across firms and industries.

Japan’s labor market is well-known for its low mobility and illiquidity. The Japanese employment system combines synchronized recruitment of new graduates, a seniority-based wage system, and lifetime employment. Freshmen who join large firms as regular workers are generally expected to remain there until retirement. Most undergraduate juniors (third-year students) spend their time job hunting rather than studying. Students do not apply for specific positions, but for membership in a certain firm they wish to join. According to a survey by the Sanno Institute of Management, seven out of ten students aspire to join a firm that assures lifetime employment.

Japan’s employment system is rigid by international standards, but this status quo was established not that long ago. Yoshikawa points out that the lifetime employment system was the standard practice in the high-growth period of the 1950-60s. However, data on separation rates by industry from the 1960s shows that the then-expanding industries, such as the manufacturing sector, wholesalers, and retailers, had high employee turnover rates. Separation rates in those industries were higher than 20 percent. In the 1970-80s, the separation rate declined, followed by an even clearer drop in the 1990s (Chart 2.15). In the 2000s, the rate edged up as the first baby boomers began to reach retirement age.

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Yoshikawa.
Strict restrictions on the dismissal of workers, a pillar of the lifetime employment system, also remained intact even during the long period of stagnation. In Japan, case-law principles work as strict de facto regulations on dismissal. Dismissals for the purpose of restructuring a firm can be legitimate only if four conditions hold: proof of necessity of dismissal; fulfillment of obligation to make efforts to avoid dismissal; rationality of selection of personnel to be dismissed; and validity of the procedures.

From the viewpoint of management, scaling back unprofitable businesses and shifting to more promising fronts frequently requires some dismissals. However, under the four dismissal conditions, it is extremely difficult to make dismissals in one segment while expanding recruitment in other segments. Effectively, it is almost impossible for many large Japanese firms to flexibly adjust their labor force due to tight dismissal restrictions. Such labor market rigidity, both at the intra-firm and inter-firm levels, also undermines capital mobility, because shifting capital without shifting labor cannot keep businesses alive. Ultimately, labor market rigidity has impeded changes in the industrial structure by making mergers and acquisitions considerably more difficult.

Nonetheless, dismissal restrictions alone cannot explain all aspects of Japan’s labor market rigidity. While the lifetime employment system is underpinned by the dismissal restrictions, even the lifetime employment system is only a piece of the Japanese employment system. The system as a whole imposes labor market rigidity from both the demand and the supply side. These mutually reinforcing points – some institutional and others exogenous – are worth emphasizing for their impact on undermining Japan’s labor market liquidity.

2.5.1 – The Lifetime Employment and Seniority-Based Wage Systems
The combination of long-term employment conventions, the lifetime employment system, and the seniority based wage system has been applied by many firms voluntarily. The voluntary
application, rather than forceful regulation by law or through government instructions, implies that both firms and employees have benefited from this combination system. A widely held notion is that the combination of the lifetime employment and seniority-based wage system was effective in promoting firm-specific professional skills, through which individual firms were actively investing in their own human capital to enhance their unique strengths.

Opponents dispute the benefits of the status quo system. They emphasize that even if such benefits exist, they come with side effects that have increasingly hampered Japan’s economic growth. For example, some argue that, under the lifetime employment system and the seniority-based wage system, individual workers have less incentive to invest in their own human capital. This creates a problem of moral hazard, which has increasingly distorted workers’ incentives as the restriction on dismissals has been enhanced over time. In an extreme case, the status quo system is protecting those who shamelessly (by the Japanese standard) stick to positions in Gulliver firms, even if they are less motivated and the least productive. In this context, there has been momentum among Japanese Gulliver firms to review the status quo human resource (HR) management system.

This momentum has manifested in some tangible actions. In the mid-2000s, a number of firms replaced existing seniority-based wage systems with merit-based wage systems. However, it should be noted that all new systems, including this new wage system, have been applied to “next generations only.” In other words, current employees were grandfathered in and remain protected by the old (status quo) system. Grandfathering can in part explain why most of the new attempts to replace the status quo HR system have failed (at least from the viewpoints of incumbent managers). Other reasons include: (i) existing HR divisions and managers lack capacity, and/or are not experienced enough to evaluate individual workers’ professional skills; and (ii) the co-existence of grandfathering and over-competition within teams undermined teamwork.

More recently, some firms, such as Hitachi and Rakuten, have successfully established a globally uniform HR system, replacing the old status quo. The acute need to attract and manage human resources across countries was the main driver behind such shifts. However, whether those successful cases can prevail has yet to be seen.

2.5.2 - Difficulty of Reentrance into Labor Markets

Under the status quo system, reentrants into labor markets are subject to sizable handicaps. As mentioned above, Japanese corporate recruiting practices are heavily focused on new undergraduates and mid-career recruiting, and Japan’s secondary labor market remains underdeveloped. For a period, intra-firm investment in human capital through on-the-job-training was believed to be a source of the strength of Japanese firms, but this same strength could disadvantage an individual worker leaving their firm to take an outside option. Multiple characteristics of the status quo system strongly incentivize employees to remain in their first jobs, including immobile, firm-specific pensions; separation packages that geometrically increase along with the length of an employee’s term; and a lack of regular-worker positions that can be filled by a second job seeker. These create a negative cycle. Because the incentives

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embedded in the status quo system are well-recognized, the number of second job seekers is small, which results in an illiquid secondary job market where worker-job matching is difficult. Workers recognize the lack of job opportunities in the secondary market, and prefer to stay in their first jobs. To promote inter-firm/industry labor force reallocation, this vicious cycle must be ended.

2.5.3 - Policy Measures
Previous policy measures are a third factor in Japan’s illiquid and immobile job market. Many administrations have used employment adjustment subsidies to prevent firms from cutting employment. Given the recurring shocks that have hit the Japanese economy during the lost two decades, including the global financial crisis in 2008-09, policy measures aimed at securing jobs deserve some credit. The issue is whether the recipients of subsidies promoted labor market efficiency, especially as firms – not individual workers - were the recipients of these subsidies.

In the aftermath of the global financial crisis, the SME Financial Facilitation Act (FFA) may have kept many zombie firms alive for prolonged periods. The FFA created damaging incentives to hoard labor among firms that would otherwise have closed their businesses. If the FFA was successful in revitalizing the beneficiary firms, it would have promoted labor market efficiency. Conversely, if the zombies died after a certain length of time, the FFA was simply delaying labor market adjustment. Evidence suggests this latter scenario is closer to the truth. Subsidies were received by the oldest and least profitable firms rather than workers, and thus impeded workers from moving to more profitable and faster-growing firms or industries. As a result, workers lost opportunities.

2.6 - Slow Adjustment to Globalization
This section discusses the sluggish adjustment of the Japanese economy to globalization since the 2000s. Two notable aspects of Japan’s slow adjustment can be represented by (i) the delayed response to the rapid evolution of global value chains (GVCs), and (ii) the Japanese economy’s persistent low level of openness.

2.6.1 - Slow Adjustment to Global Value Chains
In keeping with the trends of globalization, Japanese firms – mainly large manufacturers – have been increasing their overseas plants and production sites (Chart 2.16). Reflecting this offshoring, the overseas-to-domestic ratio of investment capital expenditure (capex) has been steadily increasing. The domestic sales ratio has shown a downward trend, while sales outside of Japan have accelerated.

The offshoring trend started in the 1990s with the relocation of assembly plants overseas. This led to an increase in exports of capital goods and intermediate goods that were used in assembly sites. This pattern of offshoring and exports changed over time, and is noticeable in world export data. World trade collapsed in the wake of the global financial crisis from 2008 to 2009, but this was followed by a strong rebound to pre-crisis growth trends. Japan was an exception to this rebound, and its exports have been notably weaker than other countries’ since
the crisis. During the same post-crisis period, exports from Korea and Taiwan outperformed the rest of the world in terms of the real growth rate (Chart 2.17).

**Chart 2.16: Japan’s Production and Investment**  
**Chart 2.17: Volume of Goods Exports**

Ryo Kato and Saori Naganuma argue that Japanese firms have remained highly competitive in high value-added product markets, such as parts, capital goods, and intermediate products. Thus, Japanese firms once held an advantage in the GVC race. However, more recently in several markets where Japanese firms had a stronghold, the shares of new entrants from emerging market economies (EMEs) are growing. In some cases, firms in EMEs are making progress with their high value-added products replacing Japanese products. In other areas, Japanese firms are making slow progress in terms of research and development and are unable to produce new, upgraded products. In both cases, Kato and Naganuma argue that “the competitiveness of Japanese firms has been undermined recently.”

The catching-up by EME firms has already been mentioned in section 2.2 of this paper. A notable factor that facilitated this catch-up is the quickly evolving management technology of GVCs as a global network. In managing GVCs, focusing on the most advantageous and profitable production phase – rather than a single part or product – is essential. A number of firms in advanced economies focus on research and development (R&D), which is the earliest phase of production (sometimes denoted “upstream” in GVCs), and are making progress in innovating new materials and intermediate goods. On the other extreme, some firms concentrate on maintenance and service businesses – the farthest “downstream” – and establish large market shares. Many global firms quickly find multiple phases, some upstream and some downstream,

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26 Kato and Naganuma.
and locate business sites in places where they can exert their own strengths most efficiently. In accordance with such strategic positioning in GVCs, both in terms of production phases and geographic locations, globally competitive firms have developed flexible HR management systems. To this end, Japanese firms, as noted in section 2.5 in this paper, are left behind, as many of them are struggling with the “old-fashioned” HR system. Looking ahead, Japanese firms will need to upgrade their management system more quickly so they can evolve with GVCs, while keeping up with their competitors.

2.6.2 - Low Degree of Openness

The low openness of the Japanese economy is another factor that prevents Japan from benefiting from global economic growth as much as other economies.

Foreign direct investment (FDI) to Japan has remained low by international standards. Relative to other countries, Japan’s ability to attract inward FDI remained stagnant between 1990 and 2013 (Chart 2.18). The World Investment Report published by the United Nations Conference on Trade and Development (UNCTAD) indicates that Japan ranked 28th among the top 30 countries in 2013 for inward FDI. Inward FDI to Japan is 3.5 percent that of the United States and 20.1 percent that of Germany. If judged solely on FDI data, Japan would appear to be continuing its well-known “sakoku policy” of remaining secluded from the outside world.

Chart 2.18: Foreign Direct Investment (FDI) Stock by Country, Top 30

Source: UNCTAD “World Investment Report 2014”

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There are multiple channels through which inward FDI benefits recipient economies. First, it expands both capex and employment, even in the short run. Second, over the medium term, labor force diversity rises, which raises the probability of innovation. New ideas, technologies, and management skills can be incorporated, improving existing practices. In particular, if higher skills are introduced at management levels, inward FDI provides opportunities for domestic firms to evolve into global businesses. Conceptually, all of these positive inward spillover effects can be expected as inward FDI increases.

2.7 - Looming Uncertainty, Losing Appetite for Risk

This section discusses increasing uncertainty and the resulting weak incentives for consumption and investment. The issue of uncertainty affects both the corporate sector and the household sector.

2.7.1 - Abating Risk-Taking by the Corporate Sector

Until the early 2000s, Japanese firms muddled through balance sheet problems. Some were merged into a larger competitor, others merged with the help of taxpayer money, and some simply closed their businesses. In the aftermath of such painful adjustments, even sound survivors tended to invest less compared to the 1980s. Low investment (capex) continued as a long-lasting trend while those firms accumulated cash/deposits on the asset side and retained profits on the liability side (Chart 2.19). Clearly, Japanese firms became more risk-averse in the 2000s. Less risk-taking resulted in lower return on equity (ROE). Hence, the question here is whether businesses’ choice of low-risk, low-return strategies are in line with rational behavior.

From a macroeconomic viewpoint, three factors could have provided grounds for firms to move away from risk-taking. First, there was an across-the-board decline in expected returns on investment projects in almost all industries. Firms broadly perceived that the expected growth rate would continue to decline steadily from the mid-1990s to the 2000s, albeit with some fluctuation. The Cabinet Office’s survey provides evidence for this hypothesis (Chart 2.20). However, declines in the expected future growth rate may be a self-fulfilling explanation for low risk-taking. Because firms believe they will earn less, they invest less. The remaining question is why the firms shared this belief. Did they have good reason to believe in lower returns?

The second factor is that risks and uncertainty in Japan have been elevated since the mid-1990s. A sequence of adverse shocks, most of which can be considered exogenous to individual firms, have hit the Japanese economy since the mid-1990s. Instability in the Japanese financial system was sharply elevated in the late 1990s, which was the beginning of the long-lasting headwind spanning from the 1997 Asian currency crisis to the global financial crisis. The 2011 Great East Japan Earthquake left deep scars, which linger not only in the disaster-stricken areas but in other regions. The disaster destroyed much of Japan’s existing supply chain network. These sequential adverse shocks elevated the degree of firms’ risk aversion. All of the abovementioned events could be described as once-in-a-lifetime, but Japanese firms had to weather such rare storms every few years. Given that, their risk-averse decisions cannot be viewed as irrational. In a nutshell, bad luck reined in capex by Japanese firms with elevated risk aversion.
The third factor is deflation. Deflation means that the prices of goods and services fall as the value of cash rises. Under ongoing deflation and, more importantly, with low (or negative) inflation expectations, it is fully rational to find cash holding more profitable than investing in real activities, including capex.

Can macroeconomic conditions provide a complete and rational explanation for less investment by Japanese firms? That is highly unlikely. There are a number of different views that help explain the low investment and risk-taking by Japanese firms. As noted earlier, the turnover rate in both business entry and exit tends to be low in Japan. In particular, firms’ average ages in the material industry and manufacturing are remarkable high, and these “old” firms tend not to embark on new projects. Because these old survivors were successful in the past, it is even more difficult to restructure the status quo business segments, even if the market for the successful products/business has dissipated. Within old, once-successful firms, any new effort to go into a new market tends to provoke strong objections. Although one may think that this phenomenon is not unique to Japan, it is not that simple. In section 2.5, I emphasized the importance and overwhelming popularity of the lifetime employment system and seniority-based wage system. In typical old Japanese firms, management board positions are taken by senior executives who were successful in those firms in the past. Under this management structure, new business proposals can be submitted and approved only if the proposals were made as top-down decisions. There are some notable exceptions: Fuji Film, once a world class Gulliver in the film industry, completely changed its core business. They are now primarily running a medical and pharmaceutical business.

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28 The other possibility is that it is necessary for the old firms, which are facing an aging population, to hold cash for pension payments.
In sum, the comprehensive view that I propose here is as follows: until the 1980s, Japanese firms accumulated profits and capital (I will not delve into why they were successful then as there are many early studies on that issue). From the 1990s through the late 2000s, at the individual firm level, marginal profit from rent-seeking was higher than that expected from embarking on new risky businesses. Returns from rent-seeking could have declined more quickly if exogenous “bad luck” had not occurred so frequently. These events led to a protracted period that incentivized rent-seeking.

Since the mid-2000s, outside conditions surrounding Japanese firms have changed quickly, and the returns from rent-seeking have declined in parallel. Looking ahead, if the expected returns on new business outrun those from rent-seeking, Japanese firms may proceed to uncharted waters, taking more risks. This turnaround could have started earlier if, (i) there was less bad luck, (ii) management was more forward-looking, and (iii) deflation had ended earlier.

2.7.2 - Looming Uncertainty over Future Household Income

Consumption propensity data by cohorts indicates that people in their 30s and 40s consume less than the baby boomers when the latter were at the same ages (Chart 2.21). The declines in consumption propensity can be confirmed as a trend, meaning that working generations have cut spending over time. Here, I cite two reasons why that might have happened, both of which are related to elevated uncertainties over future income.

The first is the non-regular worker problem. The non-regular worker ratio started to increase in the mid-1990s. As a result, people who were hired for non-regular jobs (as their first jobs after leaving school) have now reached their 30s or 40s (Chart 2.14). As mentioned, early empirical studies indicate that those who were hired for non-regular jobs as their first jobs tend to remain in low-income brackets. Under the status quo Japanese labor market, young non-regular workers are given fewer opportunities for on-the-job training by their employers, and are thus disadvantaged in developing their careers later on. As also noted, the immature mid-career job market also places young non-regular workers at a disadvantage. Increases in non-regular workers, as they get older, have resulted in generations who are exposed to more income uncertainty. These groups tend to include low-income households that cannot afford to purchase homes and, given the high uncertainty over their future income, they tend to save rather than spend.

The second factor is the broad concern over Japan’s fiscal sustainability. Japan’s public debt to GDP ratio was much lower than 100 percent until the mid-1990s. Since then, taxpayers’ money was tapped to mop up the non-performing loan problem and expansionary fiscal policies, characterized by massive public construction projects, were repeatedly deployed in attempts to achieve economic revival. Consequently, Japan’s public debt to GDP ratio now stands at 210 percent, higher than that of Greece (170 percent). This is almost the same as the level of public debt in the 1940s (Chart 2.22).
Concerns over fiscal sustainability include the social security system. Japan’s advanced and efficient universal health care system is widely recognized. The system was introduced in 1961, and it has remained intact as national infrastructure. Very few critics raise objections to the contributions the system made in enabling the economy to achieve high growth in the 1960-1980s and improving life expectancies. Japan is also known as a country of longevity. At
present, the life expectancy of males and females are 80 and 86 years, respectively, greatly improved from 58 and 61.5 years in 1950. The Japanese can be proud of this achievement. At the same time, they have to deal with ballooning pension benefits and payments under the current social security system. Social security-related expenditures dramatically increased from 3.5 trillion yen in 1970 to 47.2 trillion yen in 1990. In 2014 it reached 115 trillion yen. Since the early 1990s, Japan’s inflation rate has been, by and large, zero or slightly negative. Therefore, those increases should be regarded in real terms.

Japan’s pension system is run using a pay-as-you-go (PAYGO) financing method. Like other countries with the same system, benefits are paid directly from current workers’ contributions. At present, ballooning benefit payments cannot be fully financed by current workers’ contributions and are thus paid for partly through tax revenues. As Japan’s population has aged rapidly, the top-heavy demographic structure has increased the burden on younger generations.

In the meantime, rapid aging, together with the rising cost of medical procedures and medication, is increasing total healthcare-related spending. Under the current social security system, a massive inter-generational transfer is underway. The Cabinet Office has estimated that, as of 2005, those who were born in or before 1943 are net beneficiaries, receiving 49 million yen, while people in their 20s (as of 2005) are net contributors, paying 17 million yen. Additional projections indicate that those under the age of 20 (as of 2005) will be subject to even larger (net) income transfers, to the tune of 46 million yen (Chart 2.23).

**Chart 2.23: Lifetime Net Income Transfers in Japan**

The dramatic increase in social security-related expenditure could have been predicted in the 1990s, when the ultra-low birth rate and declining population were already apparent. The super-aging society was quickly approaching. Everyone could have understood well what to do
in preparation for such demographic changes.

Politically, the top-heavy demographic structure assures a situation where the majority of Japanese voters favor the back-loading of burden in pension reform. Older generations make up the majority of voters, making the “spend now, pay later” option a natural choice. In this context, myopic political strategies taken by the government, albeit often criticized, may simply reflect the average voter’s preference in Japan.

3 - New and Old Challenges Ahead: Five D’s Needed

Section 2 discussed the seven turning points, all of which Japan experienced during the lost two decades. Shortly after World War II, Japan grew rapidly, catching up with the United States and European economies. But, later, Japan found itself in a position of being pursued by emerging Asian economies.

In the meantime, calls for fundamental reforms of industrial structures and other institutional reforms gathered strength as globalization, IT innovations, and rapid aging proceeded. However, fundamental reforms did not result. As a consequence, entrepreneurship failed to grow, labor markets remained rigid and illiquid, and firms lost their appetite for risk. The absence of reforms encouraged rent-seeking under the status quo: turnover was not stimulated; underinvestment in human capital continued; adjustment to globalization dawdled; and uncertainty regarding future income was elevated for both firms and households. All of these unfavorable developments contributed to undermining Japan’s productivity.

Bearing these turning points in mind, Section 3 proposes the five D’s that could reinvigorate the Japanese economy going forward.

3.1 - Dynamism of Labor Markets

The first policy priority should be to replenish and enhance Japan’s human capital. In World War II, Japan lost 86 percent of its capital stock (business equipment, housing, etc.). Despite this, the country began growing rapidly shortly after the end of the war, eventually becoming the world’s second-largest economy. The prime factors that enabled prosperity were (i) an ample labor force, previously pooled in rural provinces; (ii) the high quality of said labor force – which was broadly well-educated and diligent; and (iii) active entrepreneurial activities and innovation.

As discussed in section 2, after the GDP growth rate peaked in the 1970-1980s, labor market rigidity increased, impeding the smooth transition of the labor force to high growth firms/industries. Recently, the quality of Japan’s human capital has shown signs of deterioration. To reinvigorate the Japanese economy, rebuilding dynamic labor markets and promoting investment in human capital are of paramount importance.

To look in more depth into the reasons why labor market dynamics need to be spurred, one must examine the seven problems that Japan is confronting.

29 Masaaki Shirakawa, “The Transition from High Growth to Stable Growth: Japan’s Experience and Implications for Emerging Economies (Remarks at the Bank of Finland 200th Anniversary Conference in Helsinki, 5 May 2011)”
3.1.1 - Dynamic Labor Market: Seven Positive Outcomes

(i) *Adapting to globalization:* A dynamic labor market would help workers flexibly adjust to global changes in economies and industrial structures. For individual workers, it is frequently a matter of luck when a single firm or industry as a whole falls into a quagmire. A liquid labor market would provide a blanket for each worker to more easily seek a better job. Such a labor market could help reduce poverty.

(ii) *Encourage risk-taking by firms:* A dynamic labor market promotes risk-taking by firms. The costs of recruiting human capital that matches the project on which a firm wishes to embark would decrease. Lower recruiting cost is growth-enhancing and could indirectly encourage mergers and acquisitions (M&A), as appropriate human resources can be found and allocated more smoothly.

(iii) *Stimulating FDI to Japan:* A dynamic labor market is compatible with global business, and non-Japanese firms and multi-national firms could ramp up FDI to Japan. As discussed in section 2, the existing Japanese employment system tends to invest in firm-specific skills. If a dynamic labor market can provide more diverse human capital, inward FDI to Japan would be stimulated as the labor force, together with capital (FDI), moves back and forth across borders in a less costly manner.

(iv) *Promoting start-ups:* A dynamic labor market would also promote start-ups and provide fertile ground for entrepreneurs. Over time, an increase in entrepreneurs will generate innovation. Section 2.5 articulated the reasons that second job seekers are subject to significant handicaps in Japan. If a dynamic market removes such frictions, it effectively provides a blanket for failed risk-takers. With such a blanket, re-entering the labor market is less costly, so those who have innovative ideas have more incentive to let their ideas materialize. If unsuccessful, they can try another idea in the same or a different career.

(v) *Revitalizing regional economies:* In the status quo Japanese employment system, membership in large firms – often lifetime membership – is overemphasized. In contrast, modern IT businesses are more compatible with the skill-based job system. With a dynamic labor market up and running, workers would choose professions rather than membership in a certain firm. With professional skills, workers could move to more profitable firms with less friction. Consequently, there would be less reason to work in large cities – particularly in Tokyo, where the headquarters of Gulliver firms are agglomerated. On the flip side, there will be more job opportunities in local provinces as long as each worker keeps his or her own skills and local firms are compatible with such skill-based job matching.

(vi) *Increasing senior labor participation:* A dynamic labor market naturally increases labor participation by senior workers. With a dynamic labor market, retirement is not the end of a career. Under a skill-based job matching labor market, senior workers, if they wish, can work in their neighborhood – without time-consuming commuting. Those job opportunities may not be well-paid, but they are more flexible in terms of working schedule and locational choices.

(vii) *Increasing female labor participation:* A sizeable and essential benefit from a more dynamic labor market is an expected increase in female labor participation, both quantitatively and qualitatively. The quantitative argument needs little explanation. What is more important in
this proposal is that a dynamic labor market would help female workers continue developing their careers during and after their childcare period. Reentrants and second job seekers in the Japanese labor market are subject to significant handicaps. As such, female reentrants, after maternity leave and ensuing nursing leave, often choose to work as non-regular workers, typically part-time, and in different jobs/firms from their first employment. A more liquid labor market, would reduce such involuntary career choices for non-regular positions.

Labor market reforms sound like the elder wand of Harry Potter lore. However, this most powerful magic wand cannot be acquired easily. To obtain and use the wand – labor market reforms – multiple changes must be made through concerted efforts. Those changes would affect complicated labor market institutions, uncodified conventions, and the broadening of the Japanese society’s mindset as a whole.

3.1.2 - What is Required to Create Dynamic Labor Markets

Status quo employment practices and conventions need to be rebuilt entirely. The status quo systems to be reformed include: (i) the lifetime employment system and its dismissal restrictions; (ii) the seniority-based wage/retirement and allowance/pension systems, which incentivize employees to remain in their first jobs; (iii) simultaneous recruiting of new graduates; and (iv) the resulting polarization of regular and non-regular workers. Ultimately, the basic idea is to change the regime from a membership-based employment system to a skill-based job system. Diverse choices in the labor market must be generated. All choices should be brought to the table for workers: where to work, how to work, how long to work, and whether to join firms or start a business.

During Japan’s catching-up era, the membership-based employment system worked in Japan’s favor, as discussed in Section 2. To prepare an environment in which innovators and entrepreneurs can flexibly pursue their goals, a regime change is required. With ongoing globalization and a decreasing labor force, Japanese firms must consider applying some sort of skill-based job system.

In addition, the current education system needs a full-fledged review. At tertiary levels, the current system is distorting incentives. Despite the rapidly decreasing number of youths, the number of universities and colleges has increased. To estimate returns from tertiary education, the OECD has calculated the ratio of the lifetime income earned by an average college graduate to the college tuition fee plus lifetime income earned by an average high-school graduate. The OECD’s calculations show that the return on educational investment at tertiary levels is lower in Japan than elsewhere (Chart 3.1). The oversupply of tertiary schools and the resulting deterioration in the quality of the average college graduate must be rectified.

As discussed in Section 2, given the membership-based employment system (combined with mass production manufacturing), the current NCLB-focused system promoted Japan’s economic growth during the catching-up period. However, the benefits from complementarities between the status quo employment system and the education system have since been lost. In this regard, Masayuki Morikawa suggests that to raise Japan’s TFP, Japan must keep abreast with the

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world’s top-level students.\textsuperscript{31} To a certain degree, this calls for more concentration in human capital investment, such as elite screening system and incentives for highly capable young talents.

\textit{Chart 3.1: Internal Rate of Return to Investment in Tertiary Education from Perspective of Lifetime Earnings (Male)}

One idea worth considering is to separately foster global competitors and contributors to the local economies. Two different pools can be created with different curricula. Equal opportunities in education must be provided to everyone, but equal opportunity does not necessarily mean that every student takes the same classes. More customized curricula, while they may not be exactly equal, could raise the probability that everyone will obtain a better job. Singapore has applied an early-phase sorting system as a national investment strategy. Children are classified into two groups: top elites and the rest at pre-tertiary phases. The former group is given special curricula with the explicit purpose to become national and global leaders. The latter group is expected to acquire professional skills in different programs. The case of Singapore is in sharp contrast with Japan’s system in terms of human capital investment.

Thirdly, matching efficiency needs to be enhanced to achieve labor force reallocation without unemployment. To this end, the policy agenda could include (i) more practical vocational training within industries, (ii) reinforcing interactions between industries and universities, and (iii) revising the tax and subsidy systems to encourage higher rates of labor force participation.

The German experience of broad labor market reform taken up by the Schroeder administration provides useful lessons in this regard. Enhanced matching was perceived as a key

to the reduction of the unemployment rate. For example, if people lost their jobs, they received unemployment allowances and the chance to take vocational education. On the other hand, if they rejected a job offer without an “appropriate reason,” they were penalized through reduction of their unemployment allowances. Furthermore, the German attempts included more concerted efforts for better job matching with the private sector (private recruiting companies). The German practice provides a number of lessons for Japanese labor market reforms.

3.2 - Diversity

Japan ranks 104th of 142 countries in the World Economic Forum’s 2014 Global Gender Gap Report (Chart 3.2). As noted, Japan’s working population ratio peaked in the early 1990s. Around that time, lawmakers enacted bills such as the 1986 Equal Opportunity Act and the 1999 Basic Act for a Gender Equal Society, which aimed to promote female worker participation. However, female worker participation has remained low – particularly among those in their 30s and 40s – compared to other advanced economies.

On the other hand, the gender gap has been diminishing among students enrolling in four-year universities. In 2013, the ratio of males to females was 54 percent to 46 percent, respectively, a significant improvement over the 30 point gap in 1975. In addition, two-year colleges are popular among female high school students and, taking the two-year colleges into calculation, the tertiary education enrollment rate of females exceeds that of males. Those statistics mean that both males and females are paying high tuition fees for tertiary education. By and large, tertiary education does not pay. Human capital investment via the Japanese tertiary education system does not tend to translate into successful career and business achievements.

Charts 3.2: Japan’s Gender Gap Index

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<thead>
<tr>
<th></th>
<th>Economic Participation</th>
<th>Political Empowerment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>104th</td>
<td>129th</td>
</tr>
<tr>
<td>142 countries</td>
<td>142 countries</td>
<td>142 countries</td>
</tr>
</tbody>
</table>


Chart 3.3: Female Labor Force Participation Rate (by age group)

<table>
<thead>
<tr>
<th>Age 25-44</th>
<th>Japan</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Participation Rate of Labor Force</td>
<td>72.9%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Female Employment Rate</td>
<td>69.8%</td>
<td>74.5%</td>
</tr>
</tbody>
</table>

Source: OECD “Labour Force Statistics”

32 The full name of the law is “Act on Securing, etc. of Equal Opportunity and Treatment between Men and Women in Employment.”
The bright side is that there is room for improvement in terms of labor participation in Japan. The Abe administration declared its policy target of raising the female labor participation rate among workers 25 to 44 from 68 percent in 2012 to 73 percent by 2020. With this target in mind, I estimated the growth-enhancing effects of a rise in female labor participation. My estimations indicate that, if Japan’s female labor participation rate were to gradually rise to that of Sweden by 2030, Japan’s potential growth rate would increase by 0.2 percent each year (Chart 3.3).

Aside from female workers’ impact on the labor supply, more fundamental benefits could arise from adding diversity to inflexible Japanese organizations. Increased diversity could generate the momentum to change stubbornly outdated Japanese organizations from within. Female managers in Japanese organizations are about 10 percent of the total employees, which is much lower than the United States’ and European standards of 30-40 percent (Chart 3.4). This implies that 90 percent of Japanese firms are run only from the viewpoint of male workers.

A study by Hirokatsu Asano and Daiji Kawaguchi points to a positive correlation between female labor participation and labor productivity in advanced economies. Two hypotheses are suggested: (i) diverse views and ideas reflected in economic activities raise productivity and (ii) countries with a highly liquid labor markets tend to enjoy high labor productivity as a benefit. As noted earlier, a liquid labor market facilitates female labor participation (Chart 3.5).

Regardless of which hypothesis better explains the facts, any under-utilized factor should

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be reinforced. In this case, encouraging female labor participation would raise potential GDP. What policy measures are needed to facilitate greater female labor participation? The agenda must include: (i) measures to increase daycare supply to achieve a zero-waiting list, and (ii) pro-work (or at least neutral in terms of labor supply) tax and social security system reforms. Under the current Japanese tax and public pension system, most at-home wives and workers in the lowest income bracket are eligible for tax deductions and pension benefits. The current system effectively incentivizes certain workers and non-workers, typically at-home wives and female part-time workers, to work less or not work at all. In terms of tax deductions, if one’s spouse earns less than 1.03 million yen per year, the spouse’s income is basically tax-free, even if one is in a higher income bracket (thus, one’s household may not belong to the low-income class). As a result, the spouse is incentivized not to earn more than 1.03 million yen per year. With regard to the public pension system, if the spouse earns less than 1.3 million yen per year, they are eligible for pension benefits without contributing to the fund. Those who benefit from this system are officially called the “type-3” beneficiaries of the public pension system. Behind this is an ideology: an ideal family should consist of a single male breadwinner and a stay-at-home mother who concentrates on nursing and house-keeping.

The income distribution of females clearly shows that such incentives are effective. In the distribution, twin peaks can be observed at around 1.03 million yen and 1.3 million yen (Chart 3.6). The twin peaks are called the “1.03/1.30 million yen hurdles” for female workers. Because of the hurdles, voluntary adjustments in hours worked are frequently made by female workers. Such voluntary adjustments are confirmed by a number of surveys asking women the reasons for not working more and not pursuing other careers (Chart 3.7). Based on these facts, structural reform of the distortionary tax and social security systems is needed.

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**Chart 3.6: Japan’s Married and Working Females Income Distribution by Age Bracket**

![Chart 3.6: Japan’s Married and Working Females Income Distribution by Age Bracket](image)
Diversity goes beyond female labor supply. The Abe administration is promoting the hiring of highly-skilled non-Japanese workers. By 2025, a labor shortage of 300,000 workers is projected in daycare and nursing industries. To fill this shortage, the Technical Intern Training Program is being reviewed to increase immigrant workers. As noted in section 2, if inward FDI were to be stimulated, together with progress in corporate governance reforms, non-Japanese workers and entrepreneurs would increase as a natural consequence.

Chart 3.7: Reasons that Japan’s Women Adjust their Working Hours (Household Survey)

In a separate vein, it is important for the younger generation to learn diverse views and ways of thinking by studying abroad. Despite the trend toward globalization, the number of Japanese students studying abroad peaked in 2004 and has since declined to early 1990s levels (Chart 3.8). The rate of decline is disproportionately rapid compared to total population declines. A more detailed inspection of the data reveals that Japanese students studying in the United States decreased the most. What are the possible impediments?

According to multiple studies and surveys, respondents suggest three major reasons: (i) studying abroad would be disadvantageous for employment prospects – Japanese firms post job openings only for a few months in a concerted manner, as noted in section 2; (ii) shortage of funding; and (iii) incompatibility with the domestic university system (credits cannot be transferred to Japanese universities). Based on the survey results, the following items could be listed on a reform agenda aimed at enhancing human capital via promoting diversity: (i) enhancing financial assistance for studying abroad; (ii) harmonizing Japanese university systems with foreign systems, including changing academic years to start in September; and (iii) labor market reform to replace simultaneous recruiting of new graduates in April with a year-round recruiting system in keeping with international practices.
3.3 - Destructive Innovation

Promoting innovation is likely to be the linchpin of policy measures to spur economic growth. From the mid-1990s up until 2007, Japan’s per capita GDP grew by three percent annually on average. During this period, Japan’s growth was the lowest among the ten major industrialized economies (Chart 3.9). By and large, Scandinavian countries have performed well, but even compared with the major European economies, such as France and Germany, Japan’s growth rate was around one percentage point lower.

As discussed in section 2, over the medium- to long-term, sustainable economic growth requires increases in TFP. Ultimately, only innovation can raise productivity over the long run, as shown by a number of studies. The critical question here is what is preventing, impeding, or discouraging innovation in Japan? In this regard, the Index of Economic Freedom,\(^{34}\) published jointly by the Heritage Foundation and the Wall Street Journal, gives some clues to thinking about the crux of the issue.

Even a cursory observation suggests a positive correlation between the levels of per capita GDP, based on purchasing power parity (PPP), and overall scores in the Index of Economic Freedom (Chart 3.10).\(^{35}\) Additionally, high correlations were detected between the per capita GDP (PPP) growth rates (shown in Chart 3.11) and (i) trade freedom (+0.83), (ii) freedom from corruption (+0.53), and (iii) business freedom (+0.53), respectively. As noted, Japan ranks

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\(^{35}\) A formal econometric analysis confirms that Business Freedom, Freedom from Corruption, Labor Freedom, and Trade Freedom have statistically significant positive effects on per capita GDP growth. See Appendix for details of the panel regression.
lowest in terms of per capita growth rates among the ten countries. Therefore, the high correlations of those indicators mean that Japan is given very low scores in each measure.

**Chart 3.9: Per Capita GDP Growth Rate**

![Chart showing per capita GDP growth rate](image)

Source: The Heritage Foundation “2014 Index of Economic Freedom”

**Chart 3.10: Index of Economic Freedom and GDP Per Capita Correlation**

![Chart showing correlation between economic freedom and GDP per capita](image)

Note: The size of each bubble represents the size of the population.
Source: The Heritage Foundation “2014 Index of Economic Freedom”

**Chart 3.11: Correlation between Index of Economic Freedom and Per Capita GDP Growth Rate**

<table>
<thead>
<tr>
<th>Index</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Score</td>
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</tr>
<tr>
<td>Property Rights</td>
<td>0.41</td>
</tr>
<tr>
<td><strong>Freedom from Corruption</strong></td>
<td><strong>0.53</strong></td>
</tr>
<tr>
<td>Fiscal Freedom</td>
<td>-0.45</td>
</tr>
<tr>
<td>Government Spending</td>
<td>0.44</td>
</tr>
<tr>
<td><strong>Business Freedom</strong></td>
<td><strong>0.53</strong></td>
</tr>
<tr>
<td>Labor Freedom</td>
<td>-0.56</td>
</tr>
<tr>
<td>Monetary Freedom</td>
<td>-0.08</td>
</tr>
<tr>
<td><strong>Trade Freedom</strong></td>
<td><strong>0.83</strong></td>
</tr>
<tr>
<td>Investment Freedom</td>
<td>-0.61</td>
</tr>
<tr>
<td>Financial Freedom</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Note: Correlation between the per capita GDP growth rates and the changes in 11 components consisting of the overall score Index of Economic Freedom from the 1990s to the 2000s.
Source: The Heritage Foundation “2014 Index of Economic Freedom”
On trade freedom, NAFTA contributes to the high scores given to the United States and Canada, and the European Union benefits European countries. By contrast, as discussed in section 2.6, Japan’s openness has remained low in various measures. Against this backdrop, the low score on trade freedom given to Japan has a clear policy implication: more effort should be made to conclude the Trans-Pacific Partnership (TPP). In a similar vein, Japan has made some progress in negotiating a few bilateral Economic Partnership Agreements (EPAs) and Free Trade Agreements (FTAs), which would also help the economy. More broadly, lifting barriers preventing inward FDI could stimulate not only cross-border trade but also domestic economic activity.

The low score on freedom from corruption should be viewed with serious concern among Japanese policymakers and incumbent businesses. This indicator does not necessarily mean that bribery and extortion are daily practices in Japan. Rather, the problem suggested by this indicator is that there are a number of sheltered sectors to which new entrants are effectively blocked. The Heritage Foundation notes that “corruption” takes into account the presence of “special interest-groups.” In Japan, there are a number of industries, such as agriculture, daycare services, and medical services, in which the “dead hand” of vested interests stops innovation, as discussed in Acemoglu and Robinson.

By and large, the low score on business freedom is reflected in the lack of start-up businesses and low turnover in Japan, as discussed in section 2.3 of this paper. It should also be noted that the low scores on business freedom and freedom from corruption share the same root. In Japan, vested interest groups are powerful in more than a few industries, and they are hampering, perhaps unintentionally in some cases, entrepreneurial activities. This is ultimately curbing innovation and productivity growth.

Total early-stage entrepreneurial activity (TEA), as computed by the Global Entrepreneurship Monitor, provides another look at Japan’s position in terms of entrepreneurship. Among all countries with higher per capita income than Japan, none have TEA lower than that of Japan. There are some indications that countries with high TEA benefit from innovation, resulting in high per capita income. Chart 3.12 shows the plot of TEA against per capita GDP (PPP) levels. The scatter graph suggests a U-shape relationship between TEA and per capita GDP. Richard Dasher highlights the U-shape, noting that countries with per capita GDP higher than $40,000 can rekindle entrepreneurial activities.

Upgrading infrastructure for entrepreneurs and encouraging business partnerships between incumbent large firms and new start-up businesses via open innovations will be critical for destructive innovation. As discussed, an additional D – deregulation – should help promote future destructive innovation in Japan.

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36 Petri, Plummer, and Zhai point out that adding Japan to the TPP increases global benefits from the agreement from $75 to $223 billion per year and Japanese benefits (income gains) increase from $1-1 billion to $104 billion (these values are for 2025, relative to the authors’ baseline projections, and are expressed in 2007 dollars). Peter A. Petri, Michael G. Plummer, and Fan Zhai, “Adding Japan and Korea to the TPP,” 2013, http://asiapacifictrade.org/wp-content/uploads/2013/05/Adding-Japan-and-Korea-to-TPP.pdf.

37 Acemoglu and Robinson.

38 Richard B. Dasher, “Open Innovation, As Seen from Silicon Valley (Presentation for Japan Users Association of Information Systems Stanford University, 3 November 2014).”

39 Dasher makes a similar argument.
3.4 - Decentralization: Correcting Over-Accumulation in Tokyo

The fourth D is “decentralization” — or disinvestment from Tokyo. The primary aim would be to rebuild and reassure the sustainability of local economies with declining populations. The New National Grand Design published by the Ministry of Land, Infrastructure, Transport and Tourism projects that between 2010 and 2050, the population will decline by more than 50 percent in two-thirds of local cities and provinces (Chart 3.13). The biggest challenge posed by this dramatic demographic contraction is how to reinvigorate local economies while keeping administrative services at viable levels and on sound fiscal ground. The cost of civil services is subject to economies of scale. Consequently, to keep municipalities (local administrations) alive, the local economy needs to be maintained at a certain size. To this end, two steps must be taken: (i) encouraging agglomeration in local big cities and, on the flip side, (ii) disinvesting from Tokyo and redistributing resources and capital to local cities.

Compared to major cities in advanced economies, Tokyo’s rate of population concentration is high (Chart 3.14). Since 1996, inter-prefectural migration statistics show that outflows from local cities and inflows to Tokyo have continued in tandem (Chart 3.15). Hiroya Masuda warns about “vanishing municipalities,” with projections showing that the population of 20-29 year old females in 896 local cities (out of 1,800) will decrease by almost 50 percent between 2010 and 2040.40

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Chart 3.13: Prediction of Japan’s Population Changes by 2050

Source: Extracted from “New National Grand Design” by Ministry of Land, Infrastructure, Transport and Tourism

Chart 3.14: International Comparison of Population Concentration in the Metropolitan Area

Source: UN “World Urbanization Prospects, The 2012 Revision”
To stop population outflows from local cities, job creation and reindustrialization are needed. In this regard, there are some signs of the “green shoots” of new businesses in local provinces. For example, the rapid diffusion and evolution of the Internet of Things (IoT), which connects multiple plants, factories, offices, and consumers with each other, and digital fabrication, typically represented by 3D printers, provide new business opportunities. With these technologies, physical distance matters less. These new technologies can also enhance growth in local cities. In particular, digital fabrication incentivizes venture companies to participate in the manufacturing business in new locations. Manufacturing normally requires experience, but new entrants are now emerging in the manufacturing sector. In Germany, quickly changing the manufacturing business with new technologies has already been deemed “Industrie 4.0.”

For businesses, location and geography matter a lot, as a poor location could mean less available capital or complicate access to markets. Even if an entrepreneur had a great idea with significant business potential, locational disadvantages could hamper success. However, all these headwinds are weakened by the spread of information and communication technologies, and business chances are out there in local cities because there will be fewer reasons to work in Tokyo. As business start-ups and entrepreneurs increase in local cities, the Japanese labor market and other old Japanese systems and conventions will lose ground and change accordingly.

Promoting agglomeration in local big cities can save administrative and civil service costs. The idea of a “compact city” is not new in city planning literature. A number of early studies confirmed statistically significant growth-enhancing effects in highly agglomerated cities. Morikawa argues that plants and establishments located in densely populated cities tend to be more productive than those in less densely populated areas.41 He adds that, in particular, the

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positive correlation between productivity and population density is more significant for the service sector.

Similarly, the Ministry of Land, Infrastructure, Transport and Tourism indicates that the per capita cost of civil services in local cities falls as the population density of the region increases – there are “economies of scale” in running local governments (Chart 3.16). Agglomeration lowers the costs of a variety of civil services, including developing and maintaining transportation networks, daycare services, and police and educational services. The infrastructure necessary for the daily lives of local residents depends on municipal governments confronting the challenges arising from lower population density. At this juncture, the need for compact cities has never been clearer. Taking this opportunity, local communities should gather momentum to move forward on compact cities. Some local cities will be merged into more efficient bodies. Some others may disappear quietly, but this is an avoidable fate for some local cities that could grow with agglomeration. Early movers will survive. Over time, competition among local cities could stimulate the macro economy as a whole.

Chart 3.16: Relationship between Expenditure per Person and DID District Population Density in Japan

3.5 - Deleveraging in the Public Sector
3.5.1 - Fiscal Consolidation

There are growing calls for fiscal consolidation to achieve sustainable growth. As noted in section 2.7, Japan’s debt-to-GDP ratio is over 200 percent. In the future, if the economy finds a way out of deflation, long-term yields on Japan government bonds (JGBs) are expected to rise. If
Concerns about fiscal sustainability still loom, the JGB market will face a sizeable risk that the price of bonds could experience a disorderly collapse. Any sharp decline in JGB prices, meaning sharp interest rate hikes, would quickly raise the cost of interest payments and could result in a debt explosion.

The Abe administration has maintained its commitment to achieving a zero primary balance deficit by Fiscal Year (FY) 2020. However, the clock is ticking and the government should not hesitate to move forward. The roadmap needs to be published as early as possible (the Abe administration promised to make the roadmap publicly available by summer 2015). The Cabinet Office notes that a reduction of the deficit by 16.4 trillion yen is necessary to achieve this commitment, on the assumption that the nominal growth rate would continue to grow by around 1.5 percent annually (based on the baseline scenario).42

Multiple measures are being considered to realize the 16.4 trillion yen deficit reduction, including growth-enhancing measures, downsizing of social security benefits, and another hike in the consumption tax rate (the second rise to 10 percent will take place in April 2017). Some mix of policies is needed - any single policy measure is unrealistic. For example, assuming a 2.5 percent nominal GDP growth rate, reining in the social security benefit rise by 1.3 percent annually and raising the consumption tax to 13 percent could improve the primary balance by 16.4 trillion yen (Chart 3.17). If raising the consumption tax rate beyond 10 percent is politically impossible, it means that social security benefits and other expenditures would need to be cut considerably.

Chart 3.17: Reforms Necessary for Japan to Achieve a Primary Balance Surplus in FY2020

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3.5.2 - Social Security Reforms

At the root of Japan’s fiscal problems are the ongoing demographic changes that are jeopardizing its universal healthcare system. The key to achieving fiscal consolidation lies in social security reform aimed at making the universal healthcare system viable given Japan’s rapidly aging demographic structure. The population-aging rate (ratio of people 65 years old and over) is projected to reach 40 percent by 2060, up from 25 percent in 2013 (Chart 3.18). Given this demographic outlook, healthcare spending is expected to rise by 4 percent per year (Chart 3.19). Under the current system, these ballooning costs will be financed by public expenditure (ultimately, taxes) and increases in insurance premiums paid by working generations. With the ratio of working population to retired population dwindling, it is evident that this financing system will result in a fiscal crisis or the bankruptcy of working generations.

Avoiding these scenarios will require a two-pronged approach: reforms should be made both to financing structures and to fix the distorted incentives that currently allow for extravagant expenditures.

On the financing structures, raising co-payments for the retired generations would improve the ever-increasing deficit. At present, the co-payment (i.e., the amount paid at hospitals by patients, with the rest covered by the universal healthcare insurance) is 30 percent for those working, while those aged 70-74 pay 20 percent and those aged 75 and over pay only 10 percent. The first step would be to raise the co-payment of those 75-year-olds and older to 20 percent, which would dramatically improve the financing imbalance. The biggest obstacle will be political pressure, given that more and more voters are reaching retirement age.

Chart 3.18: Japan’s Aging Process and Projections for the Future

Notes: 1. Aging Rate = Ratio of people 65 years old and over.
2. Total number from 1950 to 2010 include persons of uncertain age. Those of uncertain age are excluded from the denominator in the calculation of population aging rate.
Chart 3.19: Estimation of Future Expense of Social Security Systems in Japan

The second prong is to curb total healthcare spending. Efforts need to be made to reduce the per capita cost of medications and medical services. Dispersion of per capita healthcare cost by prefectures cannot be explained by demographic factors only. For example, per capita cost tends to be higher in prefectures in western Japan where climates are relatively mild than in northeastern regions. Inspections of cost-increasing factors in an average prefecture’s data should be helpful. Other possible sources of over-expenditure are distorted incentives, which result in over-prescriptions, over-hospitalization, and other ills. If improvements were made based on empirical analysis, healthcare-related expenditures can be curtailed. However, removing “pork barrels” from the healthcare and pharmaceutical industries is a challenge that remains to be tackled.

Finally, pension reforms would also help improve fiscal imbalances going forward. Correcting excessive inter-generational transfers is an acute issue. Working generations are already overburdened under the current system, and the burden is expected to increase. Because the current pensions are run under the PAYGO system, the top-heavy demographic structure also increases the burdens of younger generations disproportionately. Quantitatively, retirees reaching the age of 65 by 2014 will be given pension payments worth as much as 62.7 percent of the annual income of the working generation. A realistic projection indicates that those who are 30 years old in 2014 will be given only 50.6 percent when they become 65 years old (Chart 3.20). Therefore, under the current PAYGO system, burden sharing is not at all fair and will endanger the entire system over time. One possible reform could be the reduction of pension payments for high-earning beneficiaries. Many of those who are 65 years old and over are still earning high incomes.
Conclusion

Japan is still combating the deflation of the lost two decades in the midst of strong headwinds: an unprecedented decrease in the working-age population alongside population aging. Whether Japan can raise its per capita growth rate and maintain a high quality of life while overcoming these demographic challenges ultimately depends on the five D’s listed in section 3 of this paper.

Historically, Japan has overcome many difficulties and challenges, as in the aftermath of the Meiji restoration and World War II. Japan tackled these challenges with its resourcefulness.

In the context of the 21st century’s rapid globalization, however, Japan is losing diversity and flexibility. The weaknesses stemming from this monotonous, non-dynamic economy are manifest in working style, career choices, and corporate culture. Promoting diversity in the labor market as well as in corporate culture can change mindsets and heighten the potential of each individual. If Japan can make best use of those with the most talent, it will enable reforms to proceed on various fronts, creating a more liquid labor market, diversifying society, and generating innovation.

Investment in future generations through reform of the education system and social security is also of prime importance. Corporations, together with workers, need to move from rent-seeking to risk-taking and explore the possibilities of the future. Only those who do not fear challenges can win gold medals, not only in the upcoming Olympic Games in Tokyo, but also when you stand on frontiers. Tackling those challenges head on will ultimately benefit everyone and lead to prosperity.
### Appendix: Panel Regression Results

Dependent variable: Per capita GDP growth (Fixed effects panel regression)

<table>
<thead>
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<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>Significance</th>
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Weighted Statistics

- Adjusted R-squared: 0.41166
- S.E. of regression: 0.02207
- F-statistic: 4.77835
- Prob (F-statistic): 0.00000

F-Test

- Statistic: 2.4594101
- d.f.: (30, 176)
- Prob.: 0.00015

Breusch-Pagan Test

- Cross-section: 150.66973
- Prob.: 0.00000

Hausman Test

- Chi-Sq. Statistic: 27.725673
- Chi-Sq. d.f.: 10
- Prob.: 0.00200

[Note] *, **, *** indicate 10%, 5%, 1% significant estimates, respectively.

Sample period: From 2006 to 2012 (annual frequency)

Cross-sections included: 31

Total panel (balanced) observations: 217

Dependent variable: first order difference of 3-year central moving average of per-capita GDP