

Why Did Japan Stop Growing?

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1. Introduction

The Japanese economy has been stagnating for almost two decades. Some recent research suggests that at the end of the 1990s the economy fell into a deeper paralysis that differed from previous “normal” recessions (Hamada, Kashyap, and Weinstein, 2011). By the middle of the 2000s a recovery seemed to have taken hold, but with the global financial crisis of 2008 Japan has slipped back into recession and deflation. The governments after the onset of the global financial crisis (one led by the Liberal Democratic Party and two led by the Democratic Party of Japan) have proposed various policies to restore economic growth, mainly through fiscal stimulus, but, overall, they have been ineffective.

Rather than focusing on the immediate growth challenges associated with the fallout from the global recession, we take a long-term view. The Japanese stagnation did not start in 2008. The problem goes back at least to the collapse of stock and land prices in the early 1990s, and we trace the major causes of stagnation to the failure of Japan to adjust to various challenges that emerged starting as far back as the 1970s.

Prior to the 1970s, the Japanese economy enjoyed a very rapid pace of economic growth. But, during the 1970s important factors that supported this rapid growth started to disappear. First, Japan was catching up with more advanced economies such as the U.S. Thus, Japan could no longer grow just by imitating or importing new technologies from the advanced economies. The practices and economic institutions that worked well during the catch-up phase were not so well-suited for a more mature economy.

Second, financial globalization and the collapse of the fixed exchange rate regime meant that by the end of the 1970s that Japan could not rely on an undervalued currency to boost its

exports. Japan had to rearrange its production system and other economic institutions to cope with globalization.

Third, Japan's population structure was shifting and becoming increasingly elderly. The aging meant slower growth of the labor force. The aging and the declining fertility also reduced the domestic saving that supported economic expansion during the rapid economic growth period.

The end of catch-up phase, globalization, and the rapid aging together created a major challenge to the Japanese economy. Japan has yet to successfully meet these challenges.

Worse, there were some subsequent policy mistakes, which turned stagnation into paralysis in the late 1990s. For example, regulatory forbearance on problems in the banking sector created the situation where zombie banks were supporting zombie firms, which hurt growth by stifling the process of creative destruction (Caballero, Hoshi, and Kashyap, 2008). Mistakes in monetary policy created prolonged deflation and entrenched deflationary expectations. Fiscal policy allocated too much money to ineffective spending programs and created a massive debt build up that now will require wrenching adjustment.

Although the Japanese economy started to recover in the mid 2000s under the reform-minded Koizumi government, the global financial crisis in 2008 put it back into recession. Looking back, the "recovery" of Japan was not robust, and Japan needs to change its policy direction for sustained growth to emerge.

There have been a lot of discussion and research into the causes and remedies for Japan's stagnation, often called the "lost decade." This paper differs from many of those attempts in taking a longer horizon.¹ We see the challenge that the Japanese economy faces as comparable in magnitude to those at past historical turning points, including the opening of the country in the

¹ Our analysis builds on a few recent studies that also take a longer term perspective such as include Blomström, Corbett, Hayashi, and Kashyap (2003), Ito, Patrick, and Weinstein (2005) and the ESRI Project led by Koichi Hamada, Anil Kashyap, and David Weinstein (2010)

mid-19th century, the turmoil in the 1920s, and the devastation after World War II. How Japan confronts the challenge is likely to influence its future for several decades.

One important reason why Japan has not successfully responded to the challenges is that the status quo has been mostly satisfactory. Thanks to the rapid economic growth in most of the post-war period, Japan is a rich country now. Therefore, except for a few very severe crises, there has been little pressure to confront these issues. Without a clear vision on what Japan could achieve, it is hard to grasp what Japan is losing. One important goal of this paper is to come up with a clear view of what is possible for Japan in rest of the 21st century.

The paper is organized as follows. In Sections 2 through 4, we start by identifying the challenges that Japan faced after the rapid economic growth era. Section 2 points out that a slowdown in economic growth was an inevitable consequence of a successful catch up. As Japan's GDP per capita rose, the growth rate fell. The end of the catch up phase, however, is not the whole story. We show that some advanced countries such as the U.S., Canada, and the U.K. continued to grow at the rate higher than Japan even after they reached a similarly high level of GDP per capita. Hence, the right question is what can Japan do to grow like the U.S., Canada and the U.K?

Section 3 identifies rapid aging as one factor that made Japan's adjustment to the end of rapid economic growth more challenging compared to many other advanced economies. Not only were the effects of aging more pronounced in Japan, but the aging effects started to manifest at the same time as the catch up phase of economic growth ended. In addition, the sustainability of the export oriented nature of Japan's growth posed another serious challenge.

Section 4 reviews this hurdle and shows that Japan needs to change from an export-oriented growth economy that uses imported technologies to try to catch-up to one focusing on its domestic market and own innovation.

Sections 5 through 7 identify three important impediments that have interfered with Japan's adaptation to the new environment. Section 5 shows that protection of incumbent firms (and their workers) against macroeconomic shocks in the 1990s stifled the competitive process of creative destruction that is essential for innovation and productivity growth in a mature economy. The section is mainly based on the work by Caballero, Hoshi, and Kashyap (2008). Section 6 examines the role of various government regulations in further reducing the productivity growth, especially in non-manufacturing industries. Finally, Section 7 discusses problems and growth reducing consequences of the monetary, fiscal and banking policies that were implemented to respond to macroeconomic shocks in the 1990s.

There was a period recently when Japan had a reform minded government and experienced a brief recovery of economic growth. The government, led by Prime Minister Junichiro Koizumi, started several economic reforms that appeared to steer the Japanese economy in the right direction. Section 8 is devoted to an analysis of several major reforms that the Koizumi government tried. A detailed discussion of major reform programs are in the Appendix.

Section 9 concludes by summarizing the findings and drawing lessons that Japanese policy makers should learn in order to restore economic growth. We close with a brief evaluation of the New Growth Strategy, which is the current government's attempt to do that.

2. End of Rapid Economic Growth

For many years the Japanese economy grew very rapidly. From the mid 1950s to mid 1970s, the average growth rate of the real GDP was around 10% per year, but growth then began slowing. Figure 1, using data based on the 1968 System of National Accounts, shows the real growth rates from 1955 to 2000. The figure clearly shows a first slowdown in the mid 1970s and then a second, more pronounced drop during the 1990s. Figure 2, using the current vintage of national accounts data, shows real GDP growth rates from 1981 to 2009. Although the growth seems to have returned briefly in the mid 2000s, Japan stopped growing again after the global financial crisis of 2008-2009. The purpose of this report is to explain the stagnation that began in the 1990s and deduce what policies might help reverse it.

Economists have demonstrated that long term growth patterns are generally well described by the so-called “neoclassical” model of growth. This model focuses on the supply side of the economy and we will use it to organize our discussion of potential causes of the slowdown. To quantify these alternatives, consider the simplest version of the neoclassical model:

$$Y = AF(K, L) \tag{1}$$

where Y is the level of output, K is the amount of capital input, and L is the amount of labor input in the economy as a whole and A denotes the level of technology.² Written this way, the model presumes technological progress raises output by making both labor and capital more productive (rather than favoring capital or labor).

² We also make the standard technical assumptions that the function $F(\cdot)$ is assumed to be homogeneous of degree one and the marginal product of each input is positive but declining with respect to the level.

If we also assume that capital and labor are each paid their marginal product (as would be the case if neither had any market power), one can show that the growth rate of output can be decomposed into three parts.

$$\% \Delta Y = \% \Delta A + \alpha \% \Delta K + (1 - \alpha) \% \Delta L \quad (2)$$

where $\% \Delta$ is the operator to take the percentage change of the variable (for example, $\% \Delta Y$ denotes the growth rate of output in percentage points) and α is the share of profits (income to capital) in total national income (and correspondingly $1 - \alpha$ is the share of labor income). This representation attributes output growth as coming from three sources: increases in capital (the second term of the right hand side of the equation), increases in labor (the third term), and/or from technological progress (the first term).

One can rearrange (2) to describe output per (quality adjusted) labor input term as arising from either increases in the ratio of capital to labor or from technological progress:

$$\% \Delta \left(\frac{Y}{L} \right) = \% \Delta A + \alpha \% \Delta \left(\frac{K}{L} \right) \quad (3)$$

Since the marginal product of capital declines as the capital intensity (K/L) increases, the second term in (3) naturally falls as the economy grows. This observation also implies that countries that are initially poor can grow very quickly by having high rates of capital growth, but more importantly it tells us that eventually growth will be governed by technological progress (i.e. pure productivity improvements). Historically technological progress among rich countries has been somewhat similar, which means that countries have a tendency to converge to a common rate of technological progress. Part of what explains Japan's slowdown is the transition from being a poor economy that was catching up with other advanced countries through strong investment to becoming a rich country whose growth was limited by productivity improvements.

To see this clearly Figure 3 shows the trend GDP per capita for G7 countries measured in year 2000 US dollars (converted using the purchasing power parity) from 1970 to 2005. The trend estimates were calculated using a standard statistical method developed by Hodrick and Prescott (1997).³ Figure 4 shows the growth rate of the trend compared to the level of the trend. This presentation allows us to compare the growth rates across countries when each reached a given standard of living.

The figure shows that most of the countries experienced slowdown of growth as the real GDP per capita moves from the mid \$10,000s to the low \$20,000s. Compared with the other G7 countries, Japan continued to have a higher growth rate even when the GDP per capita crossed the \$20,000 level, but then the growth rate declined much more rapidly than elsewhere.

The figure also shows that the countries do not converge to a single rate of growth. Instead, as per-capita income broached roughly \$25,000 we see the countries split into three groups. First, the U.S., the U.K., and Canada seem to be converging to a steady state growth rate of around 1.7%. Second, France, Germany, and Japan seem to be converging to the growth rate of about 1.0%. Finally, the growth rate has continued to fall and seems to be approaching zero for Italy. These differences, if sustained, are extremely important. When per-capita incomes grow at 1.7 percent per year, incomes double in 41 years. In contrast, when the growth rate is 1 percent, then it takes 69 years for income to double.

But Japan's path is also interesting. Trend growth rate declined very rapidly once GDP per capita reached a little over \$20,000 (around 1990) and for a time looked as if it was on the Italian trajectory. But in the early 2000s growth recovered slightly so that Japan seems to have settled in with France and Germany.

³ Specifically we set the smoothing parameter in their algorithm to 400.

The figure motivates several questions that we analyze in the rest of the report. What accounts for the sharp growth deceleration? What happened in the 2000s to reverse Japan's freefall? What can Japan do to match the higher long-term growth rate that the U.S., the U.K. and Canada seem to enjoy?

3. Aging and economic growth

One factor that may explain the rapid decline of trend growth rate compared to other countries is aging of the population. Figure 5 shows the proportion of the old (65 years old or above) to the total population for G7 countries. Japan had relatively low share of elderly people during the 1960s and the 1970s, but the ratio subsequently increased very rapidly. By 2022, 30 percent of all Japanese citizens will be aged 65 or older, which is nearly twice the percentage in the U.S.

The neo-classical growth model implies that the long-term growth rates of per capita GDP declines when the aging proceeds rapidly. Note that the decomposition in equation (3) is written in per worker terms and the labor input (hours) is adjusted for distribution of different worker skill levels. Thus, letting N be the total population, equation (3) can be re-written as:

$$\% \Delta \left(\frac{Y}{L} \frac{L}{N} \right) = \% \Delta A + \% \alpha \Delta \left(\frac{K}{L} \right) + \% \Delta \left(\frac{L}{N} \right) \quad (4)$$

This formulation highlights the fact that as aging leads workers to retire or cut back on hours worked, per-capita growth necessarily declines because the last term in the equation becomes negative.

In addition to the effect of reducing labor participation and declining hours, the rate of quality improvement of labor may also suffer from aging if the skill improvement of old workers

tends to be lower than that for young workers. Sommer (2009) shows peak earnings occur in Japan as workers reached their late 40s. He also shows that in contrast to the U.S., earnings drop noticeably shortly after that stage, so that by the time the workers reach their late 50s, they are earning roughly 30% below the peak level.

4. Japan's Export-led growth

The neoclassical model assumes that as long as goods are produced efficiently there will be a buyer, so we can abstract from demand in estimating long term growth. But if demand stagnates, the expanded productive capacity resulting from technological progress will not be used effectively and will be wasted. The demand side problems have been evident in Japan for more than 15 years. One clear symbol of this is the persistent deflation that has prevailed since the mid 1990s. Given its depressed domestic demand, Japan has relied heavily on selling to foreigners.

Table 1 shows the contributions of external demand to the economic growth and the average ratios of exports on GDP for G7 countries for the period from 1995 to 2009. Japan's has the highest dependence on external demand. This is especially surprising because Japan's exports relative to GDP are small. Thus, Japan has had an odd combination of output being produced to satisfy external demand, while demand in the large domestic market has stagnated.

The reliance on the external demand is a legacy from the rapid economic growth period. Under the Breton Woods System of exchange rates, Japan benefited from a fixed and undervalued currency that made exports extremely competitive. The combination of a young, skilled workforce with a stable, undervalued exchange rate delivered high growth. The collapse of the Breton Woods regime in the early 1970s put an end to this strategy. The economic success

of Japan and emergence of competing export-oriented economies in East Asia changed the competitive environment for the Japanese exporters.

As Rajan (2010, Chapter 2) argues, an export-oriented growth strategy backed by close relationships between a country's government, banks, and industrial firms has been a successful formula for poor countries to become much richer. Japan and other Asian economies, including China, used this strategy to grow successfully. When the developing economy is small compared with the rest of the world, it can continue to depend on external demand. But as the economy grows larger, depending too much on external demand becomes increasingly difficult.

Another problem of the export-oriented strategy is the absence of market forces in guiding the allocation of resources. Rajan (2010) points out that protecting domestic firms against market forces so that they can develop organizational capacities may make sense during the catch-up phase of growth when a country can grow just by importing new technology and accumulate capital. As the economy matures, however, a well functioning market to sort out efficient from inefficient production arrangements becomes essential. The problem with an export-oriented strategy is that it tends to suppress the market mechanism which usually creates acute problems in the non-manufacturing sector, particularly the service sector, where there is no discipline from international competition.

Table 2 compares the experience of Japan with the recent growth experience of China. For Japan, export led growth was no longer enough to lift the economy (China is likely to face a similar problem in the near future). Going forward Japan needs to rely on vibrant domestic markets and we next review some of the problems in domestic markets that have impeded growth.

5. Growth Impediment #1: Zombie lending and depressed restructuring

One of the big problems that emerged in the 1990s was the rise of what Caballero, Hoshi, and Kashyap (2008) call zombie firms. A zombie firm can be defined as an unproductive and unprofitable firm that should exit the market place but stays in business with help from its creditors or the government. By continuing to operate and hanging onto the workers that should be reallocated to more productive firms, zombie firms impede the efficiency of the economy. Healthy firms are able to grow less quickly, and over time if the zombies' presence becomes large enough, productivity growth falls.

Zombies were spawned in the aftermath of the collapse of asset prices in the early 1990s and subsequent recession. The large loan losses during this period left many banks with very little capital. The banks, therefore, faced two options: recognize the losses, and try to raise capital and find new customers, or deny the problems and continue to roll over loans while hoping for improvement. Most banks, encouraged by the government to support existing firms, took the latter option.

Caballero et al. (2008) explain how the presence of zombies discourages healthy and productive firms from entering new markets or expanding their operations. In particular, because the stronger firms would be forced to compete with the subsidized weak firms to sell products, hire workers or borrow money, the zombies depress activity. Only the non-zombies with highest productivity and profitability are able to survive competition with zombies. As a result, the productivity of the industry (and the whole economy) suffers when there are many zombie firms.

Identifying zombies is challenging since banks have no incentive to confess that they are keeping customers on life support with subsidized credit. To come up with a quantitative

measure Caballero et al. (2008) attempt to estimate what expected credit costs should be and look for firms that are being charged less than what would be expected. Importantly, measurement is also hampered because specific lending arrangements between banks and borrowers are not disclosed. Hence, they give all firms the benefit of the doubt and assume that they are able to get funding at the most favorable possible rates; effectively they assume that every firm is as credit-worthy as the strongest companies in the economy. For example, if the highest rated firms are able to borrow at a 0.5 percent interest rate in the commercial paper market, then Caballero et al. (2008) assume that this rate would be available to all commercial paper borrowers. By making similar assumptions for each type of borrowing they construct the lowest possible amount of interest payments that a firm could reasonably be expected to pay. Zombies are defined as those firms which somehow manage to pay less than the lower bound.

Figure 6, taken from Caballero et al. (2008), shows two estimates of the prevalence of zombie firms in the Japanese economy. The top panel shows the proportion of zombies measured based on simply on the number of firms, while the bottom panel looks at zombie prevalence by comparing total assets residing in zombies to total assets in all firms. Both measures show that the zombie firms increased rapidly during the 1990s when Japan entered a recession following the collapse of the so-called “bubble economy”. The proportion of zombies stayed high into the early 2000s.

Figure 7 shows the cross-industry breakdown of the zombies (based on the asset percentage definition). One striking observation is that the zombies were much more pervasive in the domestic parts of the economy: in manufacturing, which accounts for virtually all exports, the percentages are low, while in the service sectors the zombie percentages are much higher. One possible explanation is that the manufacturing sector is continuously subject to global

competition so that banks would realize that propping a firm up was potentially very expensive. In contrast most of the service sector firms face limited foreign competition. Also the average firm size is much smaller for non-manufacturing firms and these small and medium sized enterprises have historically been very active politically in lobbying politicians for favors. Regardless of whether this conjecture about the explanation for the cross-industry differences is correct, if zombies are a problem it looks like they will affect non-manufacturing industries much more than manufacturing.

The central hypothesis offered by Caballero et al. is that the zombies impede the healthy firms. To test this proposition one needs a benchmark for what the healthy firms would do absent the presence of zombies. Caballero et al. use regression analysis to construct the benchmark and look for distortions in the behavior of the healthy firms that can attributed to competing with zombies. They consider three different regression specifications which are estimated for a panel of publicly listed companies in Japan. The specifications are:

$$\text{Activity}_{ijt} = \delta_1' D_t + \delta_2' D_j + \beta \text{nonz}_{ijt} + \chi Z_{jt} + \phi \text{nonz}_{ijt} * Z_{jt} + \varepsilon_{ijt} \quad (5)$$

$$\text{Activity}_{ijt} = \delta_3' D_{jt} + \beta \text{nonz}_{ijt} + \phi \text{nonz}_{ijt} * Z_{jt} + w_{ijt} \quad (6)$$

$$\text{Activity}_{ijt} = \delta_3' D_{jt} + \beta \text{nonz}_{ijt} + \phi \text{nonz}_{ijt} * Z_{jt} + \theta s_{ijt} + v_{ijt} \quad (7)$$

The proxies for economic “activity” that are to be explained are either investment in fixed assets, employment growth, or the total factor productivity growth.⁴ These specifications differ depending on the implied forecast for what would happen in the absence of zombies. The simplest, baseline specification (5) regresses an activity variable on an indicator variable that allows for different values for each year and industry (D_t and D_j respectively). This amounts to proposing that knowing the year and the industry is an adequate summary for what investment,

⁴ The subscripts i, j, and t denote an individual firm, an industry, and a year respectively.

employment or productivity would be. In addition, this specification (and all the others) allows for different estimates of activity for zombies and non-zombies. The non-zombie dummy variable ($nonz$) takes the value 1 when the firm is not considered to be a zombie in that year. Activity is also presumed to depend on the proportion of the assets in the industry held by zombies (Z). The final “interaction” term in the equation ($nonz$ times Z) captures the possibility that non-zombie firms behave differently when their industry has many zombies than when few zombies are present.

For investment and employment growth regressions, the zombie hypothesis predicts the interaction coefficient to be negative. As the number of zombies increases in the industry, healthy firms cut back their investment and employment growth. For TFP growth, the zombie hypothesis makes the opposite prediction, that the coefficient be positive. To successfully compete with zombie firms, non-zombies are required to have extra high productivity. Thus, in each case the regressions can be read as asking the question what happens to activity for non-zombies when it has to confront additional zombies over and above what we already would expect based on average activity for the whole economy in a given year and for the average performance in the industry.

Notice that most standard theories of industry dynamics would make opposite predictions to the zombie hypothesis. For example, if a firm’s competitors are weak, standard theories would suggest that this would be a good time to hire more workers or to invest in more equipment to steal market share. Likewise, a firm with poor productivity growth would be expected to survive more often when its competitors are weak.

Specifications (6) and (7) are estimated to allow for more complicated counter-factual scenarios. Specification (6) includes a dummy variable for each industry-year combination

instead of the year-specific dummies and the industry-specific dummies. This allows us to account for any factor that influenced all the firms in an industry in a specific year. Although this makes it impossible for us to estimate the impact of the increase in the zombie index (which is measured at industry level) on individual firms in general, it is still possible to estimate its differential impact on the non-zombies.

Specification (7) introduces the firm specific sales growth in addition to the year-industry combination specific dummies. This is an attempt to control for differences in profitability at firm level. In other words, besides holding fixed the conditions for all firms in a given industry in a given year, this equation also accounts for the average activity of a firm with a given level of sales growth.

Table 3 again from Caballero et al. (2008), reports the regression results. The first three columns show the coefficient estimates and their standard errors (in parentheses) for specification (5). The middle three columns are for specification (6), and the last three columns are for (7). In all of the specifications, the sign of the interaction coefficient are as predicted by the zombie hypothesis and in most cases the coefficient is statistically significantly different from zero. Thus, the regressions suggest that an increase of zombie firms hurt the non-zombies in the same industry and reduces the investment and the employment growth of those otherwise healthy firms. More zombie firms also increase the productivity gap between the non-zombies and the zombies, because the non-zombies have to be extra profitable in order to survive.

We next explore the cross-industry impact of the zombies. The productivity growth of an industry where there are many zombies is expected to be low not only because there are many unproductive zombies, but also because the zombies prevent the entry of new productive firms. Figure 8, again taken from Caballero et al. (2008) plots the total factor productivity growth from

1990 to 2000 against the change in the (asset weighted) zombie index from the 1980s to the 1990s in the industry. As expected the industries that experienced large increases in zombies had low productivity growth.

Taking this one step further, Figure 9 compares the total factor productivity for the manufacturing sector to that for the parts of non-manufacturing sector which are considered to have suffered from the zombie problem. For this calculation non-manufacturing are those operating in construction, retail & wholesale trade, real estate, agriculture, finance & insurance, and hotels & restaurants. The shaded areas of the graph show recessions according to the business cycle dating by the Cabinet Office of the Japanese government.

The figure shows that both manufacturing and non-manufacturing industries increased their total factor productivity during the 1980s. During this period manufacturing out-performed non-manufacturing, but their patterns were relatively similar. In the 1990s, divergence occurs. The manufacturing industry's productivity suffered during the recessions but grew during the recoveries. In contrast, the productivity for non-manufacturing has been flat since the early 1990s.

6. Growth Impediment #2: Government Regulatory Restrictions

Another growth impediment is the heavy government regulation in some sectors. Protection of industries often stifles competition and has a similar effect to permitting zombies. For example, entry restrictions raise profits of incumbent firms but reduce overall productivity growth by discouraging the entry of new firms. There are also cases where government interference can interact with the zombie problem. For example, Tett (2003) recounts discussions held between the government and the new owners of the Shinsei bank (the successor

to Long-Term Credit Bank, LTCB, which had failed and was auctioned by the government) over lending policies. When LTCB was up for sale one of the conditions imposed on bidders was a commitment to continue to support small borrowers. Tett reports that the new bank owners believed that many of these borrowers were not credit-worthy but nonetheless were pressured by the government to continue lending.

While systematically documenting any effects of informal pressure such as that described by Tett is difficult, there are a variety of testable implications of the conjecture that regulation stifled growth. Most directly, if government regulation is an important impediment, we should find that more heavily regulated industries tend to have lower productivity growth. We should also expect to find that industries with more restrictions allow inefficient incumbents to operate longer than otherwise. Moreover deregulation should correct some of these problems, so deregulated industries should show productivity growth.

The existing literature has some suggestive evidence for these predictions about the distorting effects of regulation. Nakanishi and Inui (2008) use the data from the JIP (Japan Industrial Productivity) database to examine the relation between regulation and total factor productivity at the industry level. The index for regulation in the JIP database is constructed from *Kyoninka-tō Genkō Hyō (Present State of Administrative Clearance)* (published by the Ministry of Internal Affairs and Communication, Administrative Evaluation Bureau), which provides 0-1 indicators if a very narrowly defined industry is subject to some administrative clearance. This assessment is given for 519 sub-industries, and then the data are aggregated to 108 industries by calculating the weighted average (based on the value added) of the underlying sub-industries. (Fukao et al. 2008, pp.109-110). For the sample period from 1970 to 2002, Nakanishi and Inui (2008) find more heavily regulated industries have lower total factor

productivity growth. Their statistical estimates imply that TFP growth increases by 1.1% per year when an industry switches from having each sub-industry regulated industry to having none regulated.

Cabinet Office (2006) uses another index for regulation that is based on not only the existence of regulation but also how “strong” the regulation is (both in content and in the legal basis of the restrictions). Their index builds on basic information in *Kyoninka-tō Genkō Hyō* (*Present State of Administrative Clearance*), but groups regulations into 4 categories according to the content of the regulation. Category A regulations require explicit approval or licenses to engage in certain business areas or offer new products. Category B regulations compel the firms to prove periodically that they satisfy certain standards for products and business. Category C regulations ask firms to report certain business information to the regulatory agencies. Category D regulations are other minor regulations (e.g., periodically required training programs). In addition to these four categories, Cabinet Office (2006) also counts the number of regulatory reforms that opened up new business areas or new products each year. When such deregulation occurred, the new business area or product was considered to have been banned before the deregulation although the ban is not listed in *Kyoninka-tō Genkō Hyō*. Such implicit ban is coded as a regulation in Category S.

The regulations are also categorized according to the legal bases. If a deregulation is derived from a formal Act, it is classified as Level 4. If it is defined by a government ordinance, it is Level 3. If it is by a ministerial ordinance, it gets Level 2. If it is just a notice, it is coded as Level 1.

The weighted sum of the regulations is calculated, using highest weight for Category S regulation and then Category A regulation, and so on. The index is normalized to 1.0 for 1995 in

each industry, so one cannot compare the extent of regulation across industries. Once again they correlate productivity from the JIP database with the regulation proxy. The Cabinet Office finds that industrial TFP growth from 1995 to 2002 is negatively related with the regulation index in 2002. Thus, the result suggests that deregulated industries (lower value for the regulation index in 2002) tend to have high productivity growth. The result is statistically significant for non-manufacturing industries. For manufacturing industries, the result is not statistically significant, but the sign of the coefficient suggests the direction of the effect is the same.

We extend the Cabinet Office analysis by using more recent estimates of the industrial TFP growth rates contained in *JIP Database 2009* (<http://www.rieti.go.jp/en/database/JIP2009/index.html>). This allows us to correlate the TFP growth from 1995 to 2005 to the regulation index in 2005. We also consider an alternative regulation index that only considers Category A regulations to be relevant.⁵

Figure 10 shows the time series of the average regulation index for manufacturing and non-manufacturing. The coverage of “non-manufacturing” here is the same as that for Figure 9 (construction, retail & wholesale trade, real estate, agriculture, finance & insurance, and hotels & restaurants). The regulation index for each industry is weighted by the value added of the industry and averaged. Note that the index is normalized to be 1 in 1995, so unfortunately we cannot compare the levels of the index across the sectors – although we strongly suspect that manufacturing was already much more deregulated than non-manufacturing in 1995. We can compare the speed and the extent of the deregulation from 1995 to 2005.

The regulation index for the manufacturing sector fell to about 0.4 by 2005, while the one for non-manufacturing stood at around 0.6 in 2005. Thus, over the decade, there was more

⁵ We thank Tomohiko Inui, Hidehiro Iwaki, and Fumihira Nishizaki at the Cabinet Office for sharing their data on regulations.

deregulation (relative to the initial level in 1995) in the manufacturing sector. The more striking difference is found in the time series pattern of deregulation. While the deregulation for the manufacturing sector proceeded steadily, the deregulation for the non-manufacturing sector moved quickly during the 1990s (more quickly than in the manufacturing sector) but then stalled. In the 2000s, the average regulation index for the non-manufacturing sector actually increased noticeably. Overall, the graph suggests that the deregulation efforts (to the extent they are captured by this index) slowed down in the 2000s for the non-manufacturing sector.

Figure 11 plots the TFP growth rate from 1995 to 2005 against the value of the regulation index in 2005 for each sector. The TFP growth does not seem to be correlated with the regulation index for either sector. The slopes of the simple regression lines are not significantly different from zero.

Figure 12 and 13 repeats the same analysis for an alternative regulation index that counts only the Category A regulations. Figure 12 again shows that the deregulation for non-manufacturing industries has been much slower than for manufacturing industries. In fact, the regulation index for non-manufacturing trended upward from 1995 to 2005. Compared with the original regulation index in Cabinet Office (2006), the alternative index excludes (1) new business areas or products opened up during 1995-2005 and (2) deregulation of less important restrictions in categories B through D. Since allowing new business areas or new products were often associated with new regulations concerning those areas or the products, it is possible for the number of Category A regulations to increase even when the firms in the industry gain more discretion. The gap between manufacturing and non-manufacturing, however, is striking. Even with the potential upward bias, the index shows steady deregulation in the manufacturing sector.

In the non-manufacturing sector as aggregate, this index does not show any evidence of deregulation.

The Figure 13a for manufacturing is very similar to Figure 11a. We do not find a correlation between deregulation and productivity growth. For non-manufacturing, however, relatively more deregulated industries experienced higher productivity growth – although this correlation is not statistically significant.

Overall the results here are broadly consistent with the results of Cabinet Office (2006). But, the updated figures imply that deregulation in non-manufacturing seems to have stalled during the 2000s. When we focus on Category A regulations, we do not see any trend of deregulation for non-manufacturing. The lack of deregulation in the non-manufacturing seems like another potential cause of stagnation.

7. Growth Impediment #3: Macroeconomic Policy Mistakes

There are three broad areas of economy-wide economic policy where Japan made major mistakes. The first was with respect to financial supervisions and regulation. The zombie problem was at its core caused by lax (and/or) misguided oversight of the banking system. The zombies only continued to exist because impaired banks were allowed to continue extending credit to them. Normally, healthy banks have no incentive to roll over loans to deadbeat borrowers. But the Japanese government was not interested in being forthcoming about the size of its banking problems. Hoshi and Kashyap (1999) pointed out that the major Japanese banks were substantially under-capitalized, yet the government neither chose to force the banks to raise capital nor did they allow stronger foreign banks to buy the bad banks. Instead there were many

examples such as the ones documented by Tett (2003) where the government insisted that the banks keep lending to zombies.

Eventually, as we discuss below, the program designed by Minister of Financial Affairs Heizo Takenaka succeeded in forcing major banks to get rid of their non-performing loans. Around that same time, the activities of the Industrial Revitalization Corporation of Japan and other turnaround funds contributed to the restructuring of many firms. There is no good reason that these steps could not have been taken sooner, which would have promoted an earlier recovery.

Had the bank support to the zombies been withdrawn sooner, some of the zombies could have been restructured and regained profitability (provided that there was financial support to facilitate the reorganization.) For these firms it would have been wise to encourage restructuring rather than liquidation – but even in these cases, it would have been likely that many workers would have been released. For other zombies, closure would have been the best outcome.

Given that the fallout from tackling the zombie problem would have involved massive labor turnover, it would have been advisable to have a strong social safety net in place. This is especially important for Japan where the lifetime employment was the norm and the market for mid-career workers has been underdeveloped. But Japan has historically had a weak social safety net. For example, Figure 14 shows data from the Organization for Economic Cooperation and Development on public expenditure on active labor market policies in 2001. Japan had the fourth lowest spending of the 23 OECD countries for which data were available. The social safety net was not significantly improved even after Takenaka's reform. This lack of a strong safety net may have contributed to the political backlash against several major economic reforms that started under the Koizumi government.

Fiscal policy more broadly was poorly used during the stagnation period. Between 1992 and 2007 (before the global financial crisis had taken hold), net government debt as a share of GDP rose from under 20% to about 80%; since 2007 the debt skyrocketed to over 120 percent of GDP. So over the whole period of slow growth, the country was consistently running substantial budget deficits. As Figure 15 shows, Japan's budget position over the last 20 years has moved from amongst the best of the developed countries to the worst.

Doi, Hoshi and Okimoto (2010) (DHO) examine the time series pattern of deficits and government debt (including both central government and local governments as well as the social security funds) to assess the long-term implications of Japan's fiscal trajectory. They start by asking how much tax revenue will be needed to avoid defaulting given the likely path of expenditures and transfers and the existing level of debt. Broda and Weinstein (2005), looking at data through 2003, had asked a similar question and reached a relatively benign answer: taxes would need to be increased but depending on the assumed path of expenditures and transfers, only to levels that already were observed in the U.S. or Europe.

DHO find that the level of required taxes now appears to be much higher. In the last several years there have been three important changes. First, there are updated data on demographics that allow for more accurate projected aging costs. Second, there are revised, and more realistic, projections about other future spending obligations of the government. Finally, and most importantly, the initial level of debt used for the calculation is higher reflecting the sharp increase in recent years. Once these revisions are taken into account, the necessary level of taxes rises sharply, so that in the baseline scenario government revenue would need to jump by almost 10 percent of GDP immediately to stabilize the debt to GDP ratio at the (already high) current level by 2100.

DHO then examines how the primary budget balance or the tax rate responded to changes in the debt to GDP ratio in the past 30 years. If the government tends to tighten fiscal policy when the debt to GDP ratio increases, this kind of policy can limit the debt problem. Put differently, the government does not have to be in the deficit reducing mode all the time, if the efforts made to reduce debt are sufficiently aggressive at certain times. If the deficit reducing mode is entered frequently enough, the fiscal policy can be sustainable. DHO conduct several different tests, but they yield the conclusion that the tax and spending policies observed in the last 30 years are unsustainable. Japan would need to substantially and rapidly raise revenues to avoid defaulting, but such a policy change is highly unlikely given the observed policies from the last 30 years. It would take an unprecedented commitment by the government to stabilize the debt.

Coincident with the increased spending by the government has been a reduction in investment by the private sector. Figure 16 shows the shares of GDP for the private sector gross fixed capital formation (the broadest measure of private investment in the economy) and public spending. The investment share has trended down steadily since the early 1990s. Importantly, this is not just due to the bulge in investment share that accompanied the boom during the so-called “bubble years”. By 1993, the share of the private sector investment was back to the level from the early 1980s, at 20 percent. Since that time the share has dropped further to its current level of about 16 percent. As our growth accounting calculations indicate this does not bode well for growth.

In addition, there is a striking negative correlation between the government’s share of GDP and the share of private investment. During the “lost decade”, 1993 to 2002, the correlation is -0.8, and over the whole sample it is -0.7. Obviously, we cannot conclude that the

government spending increases *caused* investment declines based on this simple picture alone. There is no doubt that some of the spending increases were initiated because of weak state of private spending, including investment. But over the period of 20 years the pure reverse causality explanation for the correlation becomes less plausible.

Probably the clearest way to see the problems with spending is to look closely at its timing and composition. For example, in 1996, the Hashimoto government believed that the economy had recovered from the post bubble recession and it was time for fiscal consolidation to contain the growth of government debt. The fiscal policy was tightened, and the economy returned to a recession. Contemporaneous commentary on this decision was generally favorable, with many observers lauding the move. For instance, the International Monetary Fund Executive Board in July 1997 wrote the “Directors endorsed the fiscal correction measures enacted in the 1997 budget as a step in the right direction, given the large budget deficit and to prevent a further increase in the already high level of public indebtedness. Looking ahead, Directors welcomed the government’s announcement of plans for medium-term fiscal consolidation and proposals for spending restraint in next year’s budget.”⁶ While in hindsight many criticize this decision, we think it was defensible.

On the other hand, the resources marshaled to clean up the banking problems were woefully inadequate. As Hoshi and Kashyap (2009) describe, by the early 1990s Japan’s specialized housing lenders, the *jusen*, were widely recognized to be bankrupt. But Ministry of Finance and many politicians insisted that they could be rationalized without taxpayer support. When the legislation to clean them up finally passed in 1996, the public was outraged and the government was nearly toppled – even though the total amount of public funds was tiny (¥0.68 trillion). Having witnessed the public reaction to the *jusen* rescue, neither the elected officials

⁶ See IMF press information notice 97/19, <http://www.imf.org/external/np/sec/pn/1997/pn9719.htm> .

nor the government bureaucrats were anxious to admit the scope of the banking problems for the major banks and to allocate the necessary funds to reorganize them. The dithering and dissembling about the true size banking problems were a critical factor in exacerbating the zombie problems.

In addition, the delay meant that government spending overall was high from 1999 to 2002, which likely made it harder to get a handle on the deficits. The Koizumi fiscal consolidation stands out as the only period of sustained reductions in spending over the last twenty years. With the onset of the global recession, budget deficit has reappeared and spending is on the rise again.

Perhaps more importantly, the deficit spending that did occur was poorly chosen. Most of the spending went into public works that ceased to be very productive by the 1990s. Doi and Ihuri (2009, Chapter 3) estimate the marginal productivity of public capital in five categories (roads, harbors, and airports; railways; postal services, telephone and telegraph; agriculture-related public capital and fishing ports; and flood control and forest conservation). They find the marginal productivities in all these categories of public investment declined after the end of the rapid economic growth period. The marginal productivity had become especially low for the three out of five groups (roads, harbors, and airports; agriculture-related public capital and fishing ports; and flood control and forest conservation) by the early 1990s.

Figure 17 shows the percentage of public spending devoted to each category from 1992 to 2003, along with the Doi-Ihuri estimate of investment efficiency in 1991. More resources were poured into the areas where productivity was already low. Total spending on the three categories of infrastructure totaled 213 trillion yen between 1992 and 2003 and amounted to 89% of the

total public investment during this period.⁷ Given the unsustainable fiscal position that Japan finds itself in now, this kind of nearly useless spending will have to stop.

Monetary policy is the third major leg of government policy that has been mismanaged for much of the 1990s and 2000s. The path of the interest rate target is shown in Figure 18. The figure shows that starting in July 1991 the Bank of Japan began cutting its interest rate target, lowering it by nearly 3 percent between July 1991 and July 1992 (recall that the peak for real GDP growth came in the 2nd quarter of 1990). By mid 1995 Japan had reduced its target to 50 basis points.

Starting with an influential paper prepared by the Federal Reserve Staff in 2002, Ahearne et al., it has become fashionable to argue at the Bank of Japan was slow to respond to economic developments. Indeed, speeches by senior Federal Reserve officials routinely assert that the critical lesson from Japan's experience with prolonged deflation is that the BOJ was too slow in trying to stop deflation; see for example Kohn (2006).

As we explain just below, Japanese monetary policymakers committed several errors, but we believe that the criticism of the early 1990s reflects serious hindsight bias. There are two ways to see why monetary policy in the early 1990s in Japan does not look irresponsibly tight. First, as Ahearne et al. (2002) document quite convincingly, neither the Federal Reserve staff forecasts, the IMF staff forecasts, nor the consensus private sector forecasts anticipated the deflation that ultimately appeared in Japan. Indeed, we are unaware of any credible analysts that in real time were criticizing the Bank of Japan for being too slow to cut interest rates.

Second, financial market prices also reflected the belief that deflation was unlikely. While short-term interest rates were below 0.5 percent by the second half of 1995, longer term safe interest rates such as the 10 year rate remained above two percent. So given that deflation

⁷ We thank Takero Doi for providing us with the data.

was not forecasted, the implied real interest rates by mid 1995 were already negative. By the latter part of the decade, it may be the case that real interest rates in Japan were substantially higher than would be desired, but does not appear to be the case through 1995.

Taken over the subsequent 15 years, however, the policy does seem inappropriate. One indication is that despite the BOJ having an unambiguous mandate of delivering price stability and having announced a preferred target level of around one percent inflation, the bank has failed to hit that target. As of 2010 nominal GDP was lower than nominal GDP in 1994. Over a time period this long, there is no good reason why a central bank should consistently miss its target in one direction. We agree with the criticisms by Ito and Mishkin (2006) who describe the weak efforts by the BOJ to end deflation and the premature tightening of monetary policy on several occasions. These mistakes were more important than the interest rate decisions made between 1992 and 1995.

The persistently tight monetary policy has had two modestly bad effects on the economy. First, by having interest rates near zero for so long, the job of detecting zombies was made more difficult. If inflation had been consistently positive and interest rates consistently higher the firms which could not repay their loans would have been easier to spot. But virtually any firm can make payments of a few basis points.

Second, at least for the last half of the 1990s when deflation was expected, the policy led to higher real interest rates than circumstances warranted. By 1998 there was plenty of evidence that the economy was in dire condition and yet the Bank of Japan did not try to drive real interest rates negative. One of Ben Bernanke's most memorable speeches was the scolding he delivered to the Bank of Japan in 2003 listing the many ways in which the Bank of Japan could have pursued a looser policy.

We share the conventional view that over long periods monetary policy does not have real effects. So we are not asserting that a purely monetary fix could have made a big difference in preventing the stagnation of the economy. Rather, it seems that there was no good reason to pursue the policy that was chosen and perhaps a looser policy would have helped marginally.

8. Evaluating Koizumi Reform

In considering the impacts of government regulation on the (lack of) growth in Japan, we pay particular attention to the experience in the early 2000s. From April 2001 to September 2006, under the leadership of Prime Minister Junichiro Koizumi, Japan embarked on several economic reforms, which included deregulation attempts in several industries. As we saw in Figure 4, this coincides with the period when the decline in the Japan's long-term growth rate seems to have halted.

In this section, we evaluate the role of several economic reforms attempted by the Koizumi government. As the key components of the Koizumi reform, we consider the following six high profile reforms:

- (1). Financial system reform
- (2). Postal Privatization
- (3). Labor reform
- (4). Promotion of FTAs and agricultural reform
- (5). Deregulation through special zones
- (6). Local public finance reform (“Trinity” reform)

For each of these six reform areas, we ask several questions. First, how would the reform restore the growth of Japan? Second, what was the goal of the reform? Was it stated clearly

with some clear targets? Third, did the reform achieve the stated goal? Fourth, was the reform completed? If not, why was the reform aborted? Fifth, did the reform have any unintended consequences?

Table 4 summarizes our answers to these questions. Here we go through our evaluation of each reform briefly. More detailed discussion of each of the six reforms is found in the Appendix.

The financial system reform carried out by the Minister Heizo Takenaka started in September of 2002. The Takenaka plan targeted the reduction of non-performing loans at major banks by half in two years. The Takenaka plan consisted of six parts, which forced the banks to disclose the amount of non-performing loans and deal with those. The plan included the option of using business improvement orders for non-compliance. The plan successfully achieved the target. The major banks reduced the amount of non-performing loans by more than a half in two years. Although the reform did not solve the problem of Japanese banks to find viable business models for the future, it at least restored health of the financial system. By forcing the banks to get rid of non-performing loans and encouraging restructuring of troubled firms through the Industrial Revitalization Corporation of Japan (IRCJ), the reform also helped the recovery of the real economy.

The Koizumi government also initiated the privatization of various special public corporations and agencies, including postal services. Although these were called privatization, the reform just restructured the organizations into government-owned joint stock companies and specified a schedule for divestiture of government shares in the future. For example, the postal privatization planned the divestiture of the government shares in the postal savings and the postal life insurance to start after the listing of the new entities on the stock market in 2010 and to be

complete within five years. This meant that true privatization had not started when Mr. Koizumi left the office. When the Democratic Party of Japan (DPJ) won the power in late 2009, the divesture plan was suspended and the privatization process stopped.

The Koizumi government embarked on the reform of the labor market to make it more flexible. The most often discussed component is the revision of the Dispatched Workers Act in 2003. Dispatched workers are those hired by one firm (a work agency) and temporarily placed at another firm. The reform allowed more variety in the arrangements for worker dispatching than allowed in the previous version of the law and most notably allowed worker dispatch to production jobs in manufacturing. This revision is often criticized as the one that substantially expanded the group of workers with unstable and low paid employment. The data reveals that there was a surge in the use of dispatching after the 2003 reform. But, even for workers dispatched in manufacturing, there was a practice of using subcontracting to shell companies to hire *de facto* temporary workers before the 2003 reform. The reform was rather an attempt to formally regulate the employment contracts under this “fake subcontracting” arrangement. After the Koizumi government, there have been attempts to re-regulate worker dispatching.

The Koizumi government tried to change the prevailing agricultural policy as well. The low productivity of agriculture often hindered government efforts to expand the network of the free trade areas. The Koizumi government tried to improve the productivity of Japanese agriculture to cope with globalization of the economy. The traditional support of agriculture used subsidies to all farmers including small and old farms. This policy was replaced by support for larger scale farming. It is not clear if the productivity of the agricultural sector improved nor if the policy enhanced large scale farming at all, but it did certainly weaken the farmers’ political

support for the LDP. After Mr. Koizumi stepped down, the agricultural policy switched back to trying to protect small farmers.

One method that the Koizumi government used to promote deregulation was creation of special zones. The government allowed local governments to set up special local economic zones where some aspects of regulation are relaxed. They are designed to set up example cases to show the benefits of deregulation. Another objective was to promote local economies through local initiatives. Many special zones were established but only few of them had sizable impact. Worse, many local promotion zones ended up diverting business from other areas. After the Koizumi government, creation of special zones slowed down.

Local governments in Japan traditionally relied on the central government for financial support through the local allocation tax grants and the state subsidies. Typically less than half of the expenditures by local governments are financed by the local taxes. To reduce the local governments' dependence on the central government, which faced the mounting problem of government debt, the government implemented the so called "Trinity Reform". The reform called for achieving the financial autonomy of local governments through reduction of local allocation tax grants, reduction of state subsidies, and transfer of tax resources to local governments. The reform succeeded in reducing the grants and subsidies substantially, and shifted some income tax revenues from the central government to local governments. In net, the reform did not reduce the deficit at the central government very much. For many local governments, however, the reductions in the grants and subsidies far exceeded the increase in tax revenues, because the increase in local tax revenues was concentrated in a few rich localities. Many local governments also saw cuts in the amount of Emergency Fiscal Measure Bonds that they were allowed to issue. These bonds were supposed to be repaid using future local

allocation tax grants, so these cuts added fiscal stress at many local governments. After Mr. Koizumi stepped down, local governments lobbied for transferring more central government revenues to the local governments, essentially restoring the flow of subsidies and transfers.

Reviewing the reform experience under the Koizumi government, we make several observations. First, only the financial system reform was fully implemented and successful. Second, many reform attempts were not specifically targeted to raise growth. Third, some reforms, such as privatization, specified deadlines too far in the future and, hence, were susceptible to reversal. Fourth, measuring progress was often difficult since there were often no numeric targets for the reforms. Finally, in many cases, the reforms are still incomplete today not because the reforms are infeasible but because the policy was reversed by the governments that followed Koizumi.

The review gives us a set of clear lessons for further deregulation to be successful. It is important to focus on sectors (or distortions) that are important for growth and target those. This strategy improves the chances that the gains will be meaningful. It also makes it easier to explain the importance of the reform to the public and measure the progress towards the goal. It is also important to have clear targets (preferably numerical) that can be achieved in a few years, not in a few decades.

9. Conclusions

Our report shows that it is now very clear why Japan stopped growing. Some of the slowdown was natural. Japan moved from being a relatively poor economy after World War II to one of the richest in the world. The easy catch up phase of growth could not go on indefinitely and invariably brought a reduction in growth.

The transition to growing as a mature economy requires all countries to change and Japan encountered two specific challenges in making this transition. First, the structure of its population was shifting. Instead of having a young, growing work force, it had to confront an older, declining work force. The aging lowered the growth potential.

Second, Japan's economy had been organized to produce goods for export, with production for the domestic market being an after-thought. Productivity growth in non-manufacturing lagged that in the manufacturing sector. A more balanced and richer economy requires a well functioning non-manufacturing sector.

Once asset prices collapsed in the early 1990s, the weaknesses in the non-manufacturing sector became more apparent. Japan compounded the losses from the asset price drop with three significant policy errors. First, the government delayed dealing with the losses in the banking system that accompanied the asset price drop. Weak banks operated for too long by misallocating credit to obscure their problems. By rolling over loans to zombie firms, the banks distorted competition, keeping the zombies in business and reducing the rewards to strong firms from expanding their presence. Over time this reduced productivity growth. These problems were most pronounced in the non-manufacturing sector where the trouble could be more easily disguised. Only during the Koizumi administration was real progress made in confronting the banking problems.

Regulation, or more precisely the lack of deregulation, exacerbated the zombie problems. In the non-manufacturing sector, the industries that had the most deregulation grew fastest. On average starting in the late 1990s regulatory barriers to new entrants were actually increased.

Finally, monetary and fiscal policy performed poorly. The Bank of Japan consistently undershot its inflation objective. The government pursued massive fiscal stimulus during the

1990s and 2000s, so much so that Japan went from having the best debt position amongst advanced economies to the worst. Japan's current mix of spending and taxing cannot be sustained without renegeing on the future promised transfers (through the national pension system or the national healthcare system), producing very high inflation (that would reduce the real value of debt), or defaulting outright on its debt.

Worse still, much of the spending that took place was misguided. Most of the public work projects undertaken were directed in areas that had long ago ceased to be productive. Hence, the payoff from the spending binge will not be high.

Japan now finds itself growing at about the rate found in Germany and France and substantially below the trends in Canada, the U.S. and the U.K. If Japan wants to raise its growth rate, much will have to change. It is encouraging to note that all of these countries experienced growth slowdowns in the past, from which they have recovered. And likewise, the past failures in Japan point to what needs to be done to reverse course.

First, and foremost, the priority should be on policies that plausibly raise productivity growth. Policies that remove regulation to protect inefficient incumbents in many areas of the economy are an appropriate place to start. To the extent this will involve more labor reallocation, it would be wise to set aside money for protecting displaced workers' incomes and training them to be redeployed. That kind of spending will be far more productive than continued public works projects of the type undertaken throughout most of the 1990s and 2000s. Reducing the size of the government's claim on the economy will leave more room for private investment and lessen the need to raise taxes; although tax increases are inevitable, and they should be designed to minimize distortions.

Table 5 presents a summary of the “New Growth Strategy” of current government.⁸ Given the vast number of proposed projects, a full assessment is beyond the scope of this report. But, using the framework we have developed, it is possible to make four broad points about the current plan.

First, many of the strategies represent old fashioned industrial policies, whereby some industries or activities are given subsidies. This policy had mixed success during Japan’s catch up period, but there is no evidence that it works well for mature economies (see Beason and Weinstein (1996) and Pinkovskiy (2009)). These policies are susceptible to lobbying so that funds are allocated for political rather than economic reasons and so these findings are not surprising. Moreover, the goal of an industrial policy is often to provide temporary protection to an industry so that it will become competitive without government help. If the industry fails to become competitive, however, it is hard for the government to pull the support and the protection can turn permanent, further dulling the incentives of the private sector to be competitive.

The New Growth Strategy identifies some seemingly promising areas such as “green” industries and health care/long-term care industries. Even for these areas, however, one still needs to ask why those areas are not developing already without government help. What are the externalities that the government tries to solve? There may be government regulation and other structural reason why the private sector is not eager to invest in these areas. In that case, removing the regulatory barriers will be more effective than giving subsidies or tax breaks.

A second observation is that many of the strategies are export-oriented (e.g., promoting medical tourism into Japan, exporting infrastructure projects to the rest of Asia, strengthening

⁸ This is based on two announcements by the Cabinet: “New Growth Strategy – Strong Economy, Robust Public Finances, & Strong Social Security System” (June 18, 2010) (http://www.npu.go.jp/policy/policy04/pdf/20100618_shinseityou_gaiyou_eigo.pdf) and “On the New Growth Strategy” (June 18, 2010) (http://www.kantei.go.jp/foreign/kan/topics/sinseichou01_e.pdf).

intellectual property right (of Japanese firms), etc.). Continuing to rely on external demand rather than developing domestic markets has been a perpetual problem for Japan for at least twenty years. Given the limits on what Japan can afford to spend on, this seems like a counterproductive way to use public money.

Third, the strategy embraces the idea of special zones similar to the ones started by Koizumi, but with an emphasis is on tourism where the effectiveness of the zones were questionable. The upside on these policies is low.

Finally, there are few examples of policies that aim to remove regulations that impede growth. For example, increasing acceptance of high-skilled foreign workers would increase the amount of quality adjusted labor and help growth. Promoting free trade areas with more countries will improve competitive pressure on the domestic industries and force them to grow. Increasing imports will also make consumers better off by giving them more choices. Creating a national ID system would make it possible to improve the efficiency of the tax collection and the social security system. Focusing on more reforms like this would be great improvement relative to past policies.

Japan needs to change direction if it wants to grow. The path that will work is well understood. The main question is whether the political courage to shift to the policies that could work exists and will be utilized.

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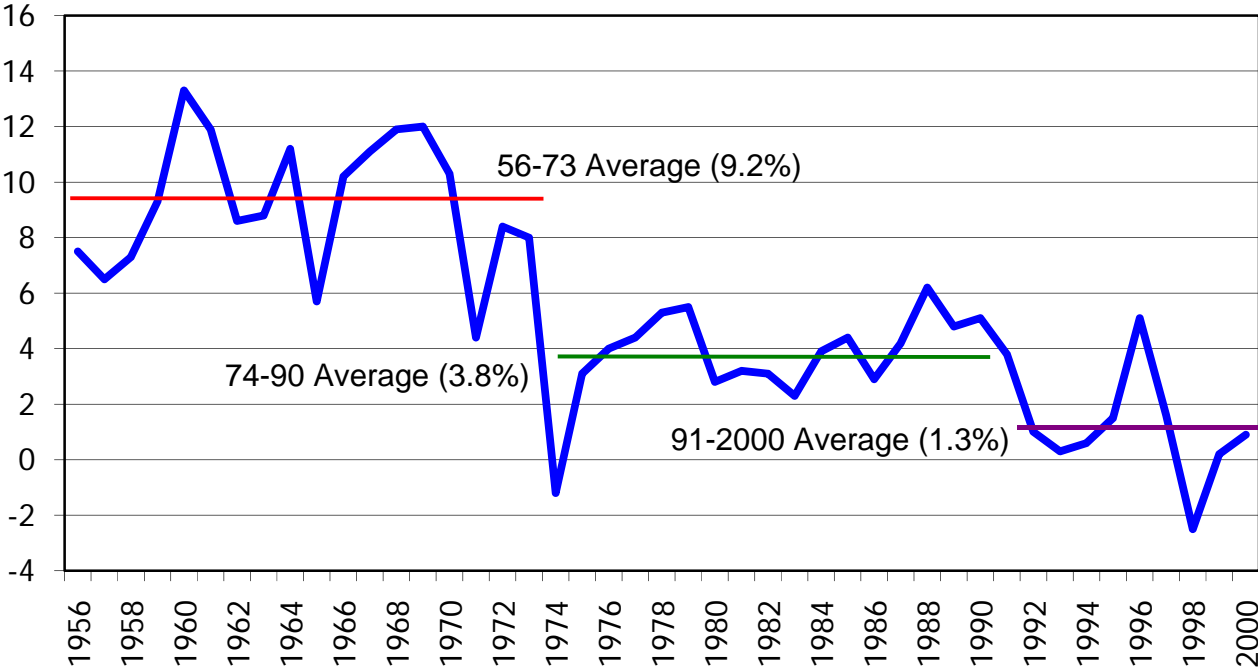
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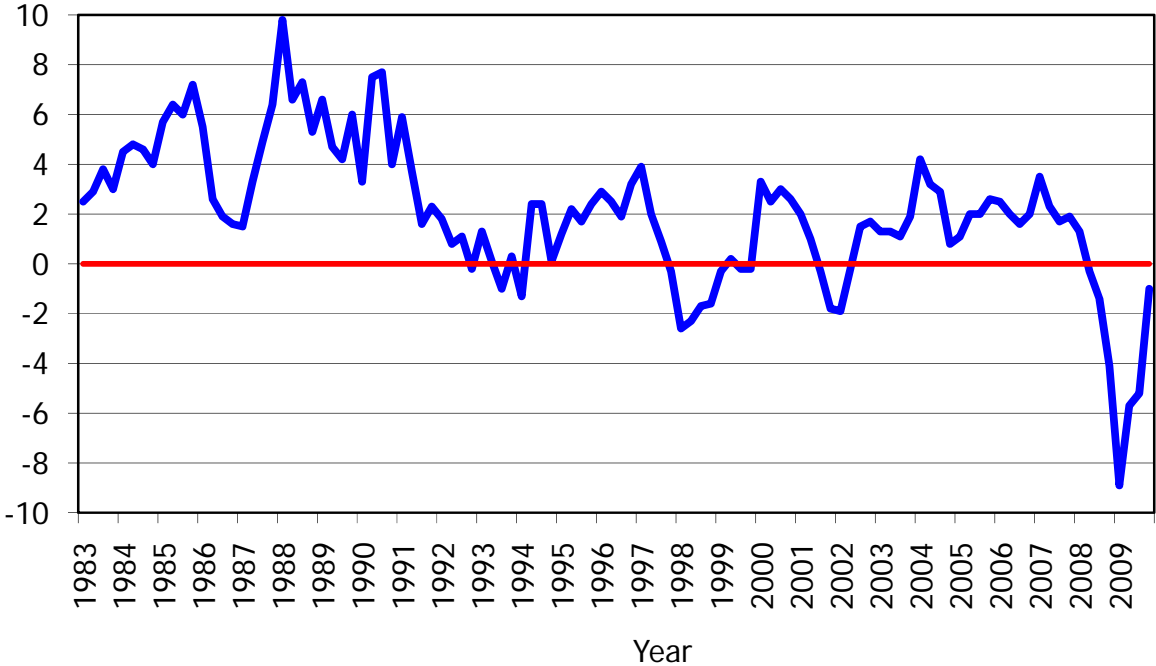
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Source: Japanese Cabinet Office, 1968 System of National Accounts

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Source: <http://www.esri.cao.go.jp/en/sna>

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(per capita PPP expressed in year 2000 USD)**

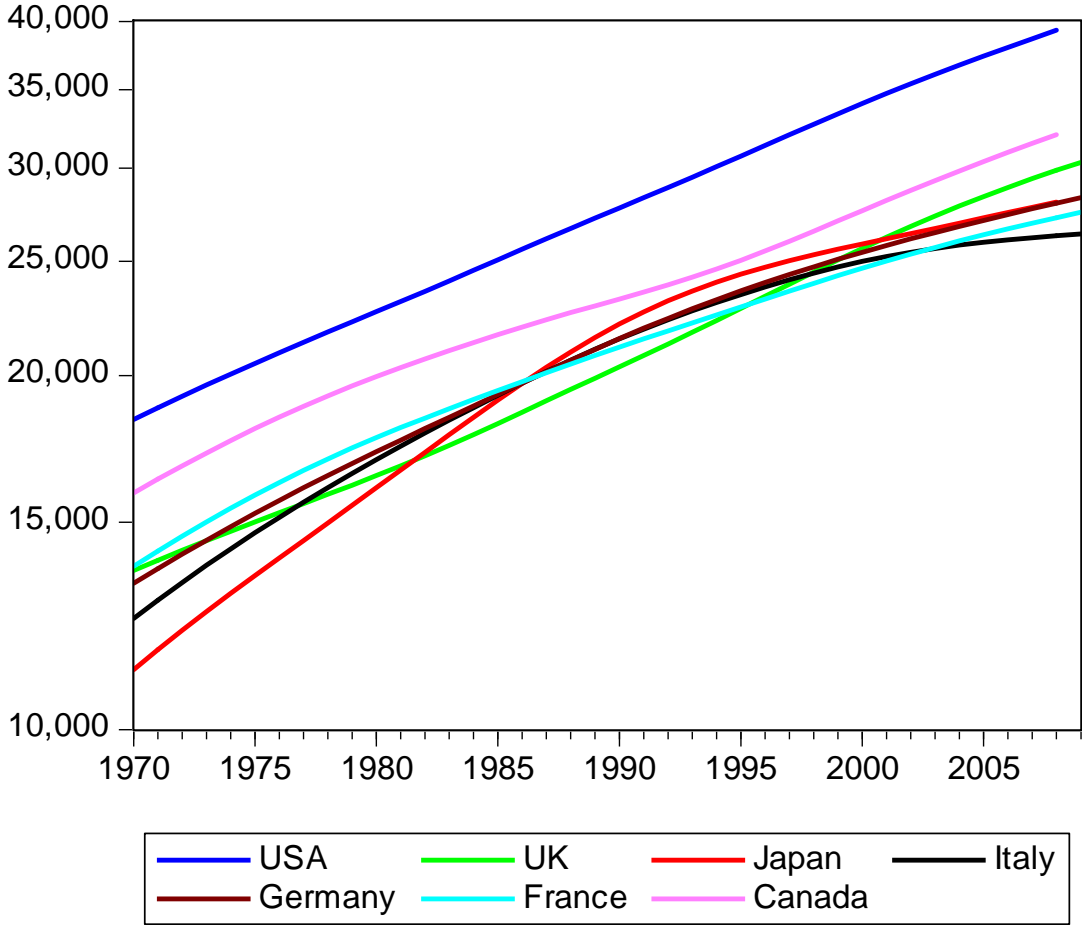


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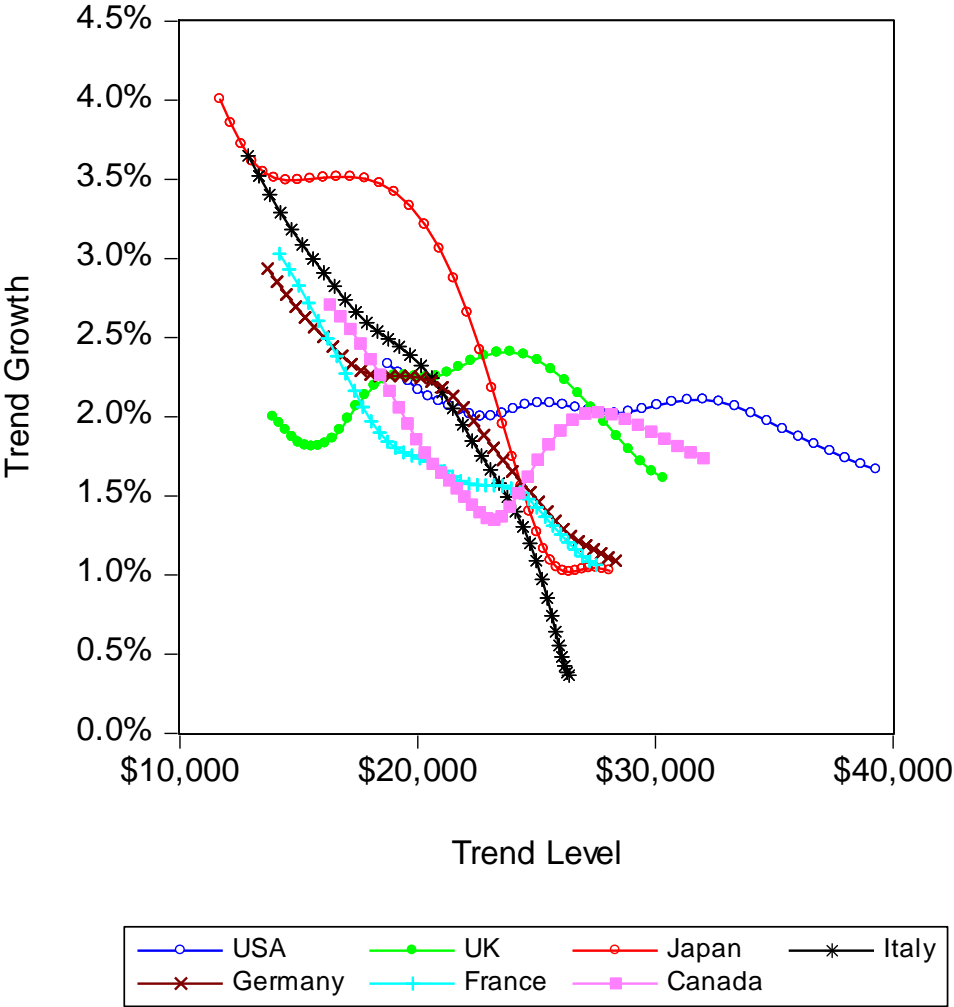


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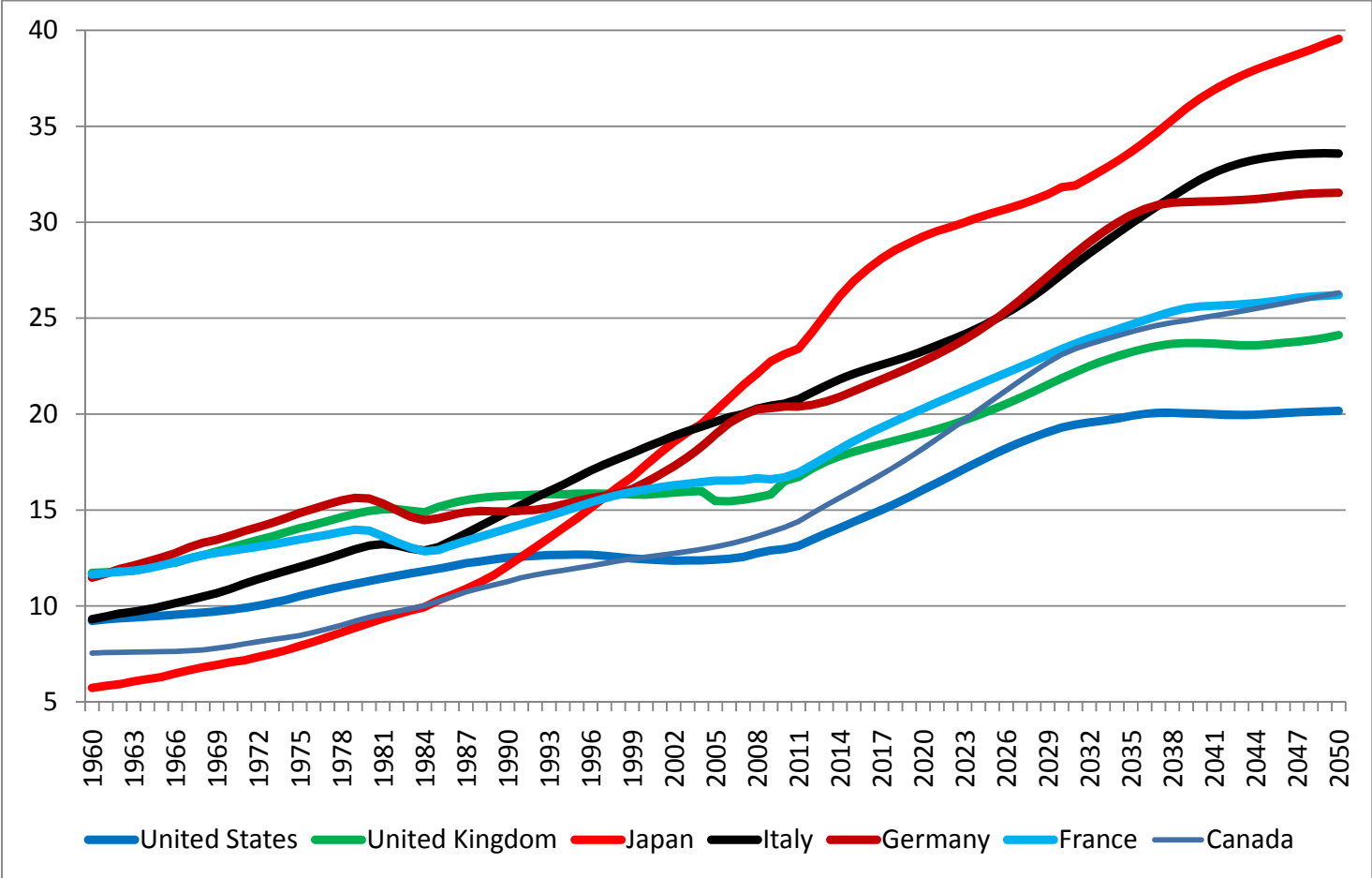
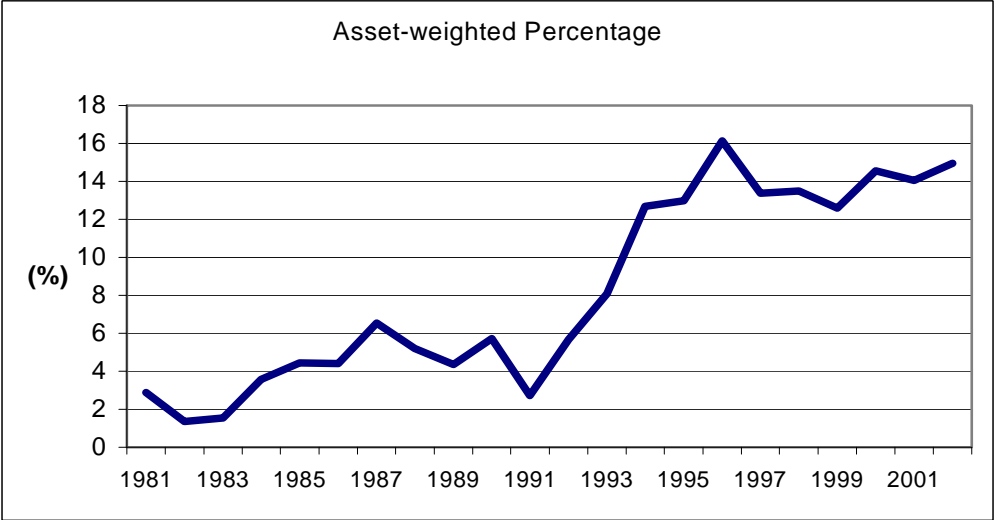
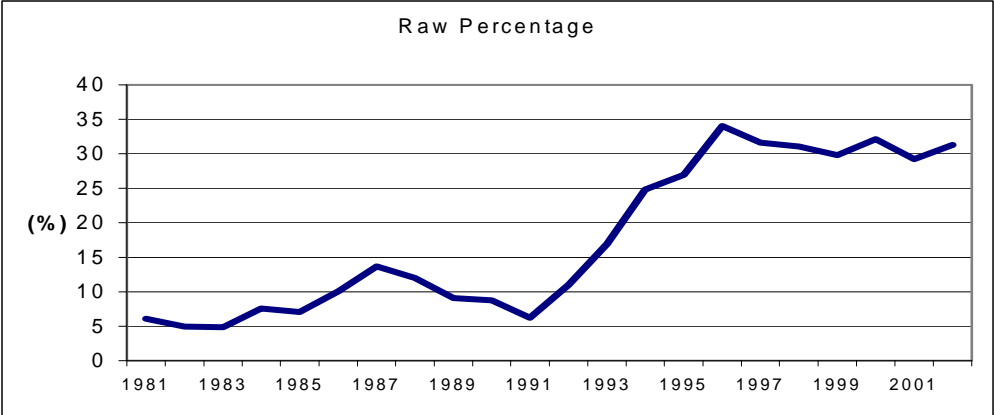


Figure 6: Aggregate prevalence of zombies



Note: The sample is listed firms in manufacturing, construction, real estate, retail and wholesale (other than the nine largest general trading companies), and services

Figure 7: Cross-industry incidence of zombies

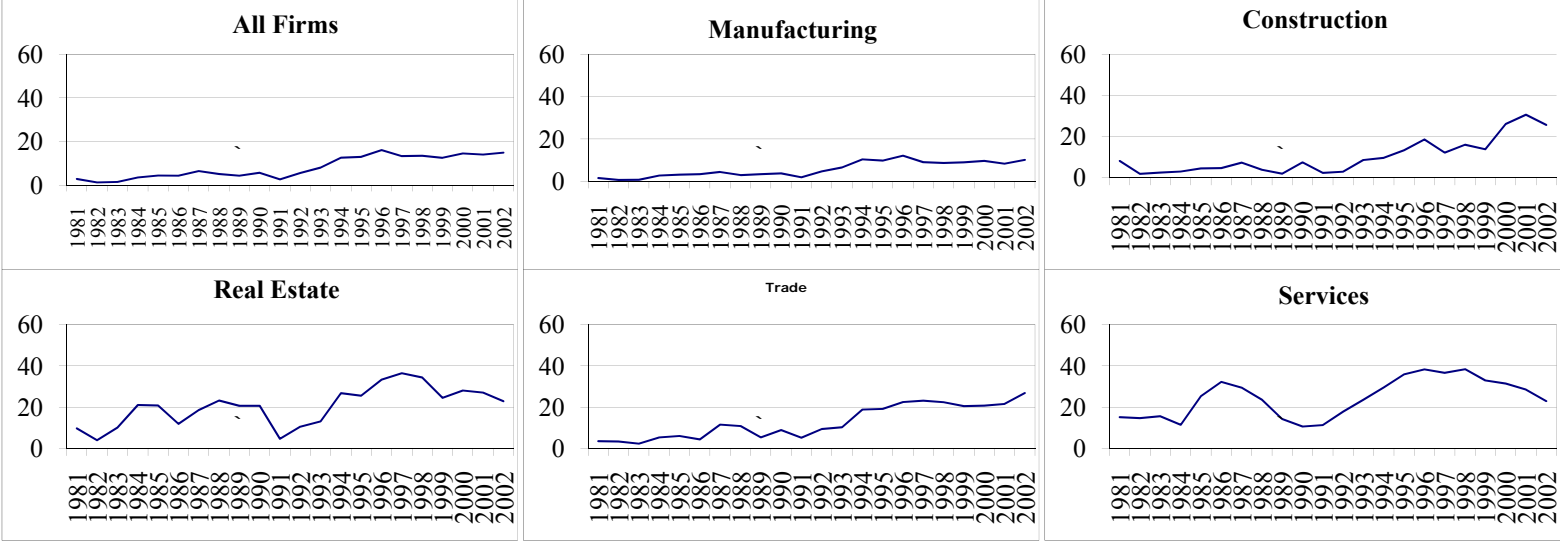
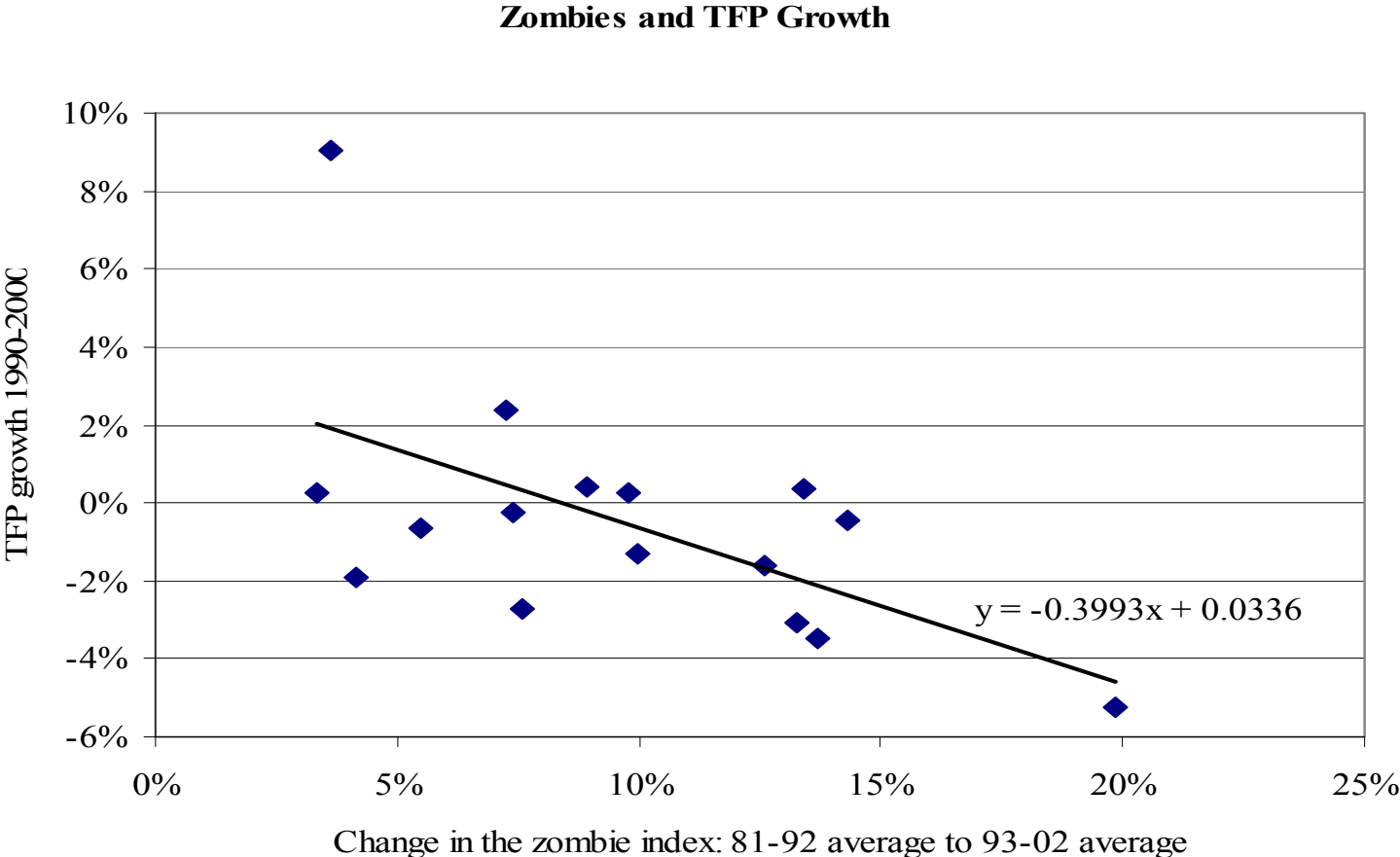


Figure 8: Zombie Incidence and Productivity Growth



Note: Estimates for TFP Growth are from Tsutomu Miyagawa, Yukiko Ito, and Nobuyuki Harada (2004) “The IT Revolution and Productivity Growth in Japan,” *Journal of the Japanese and International Economies*, 18(3), 362-389.

Figure 9: Total Factor Productivity by Industry, 1980 – 2006
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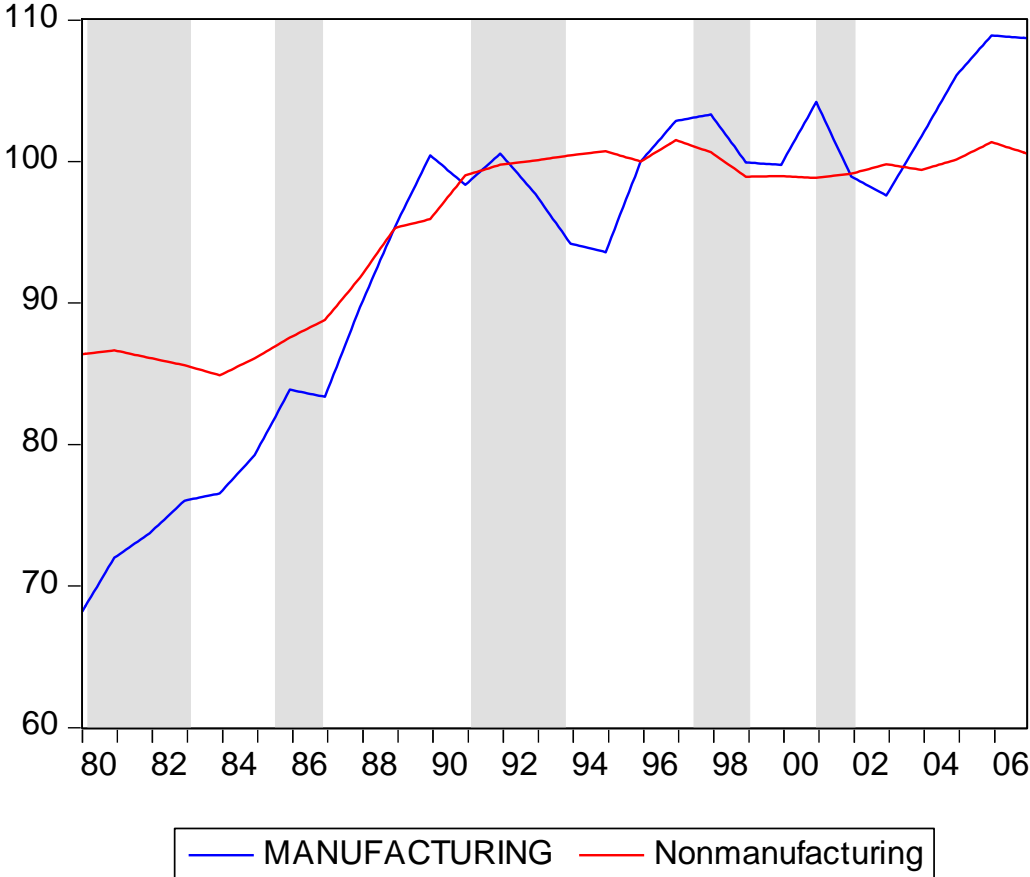


Figure 10: Weighted Average of the Regulation Index from Cabinet Office (2006)

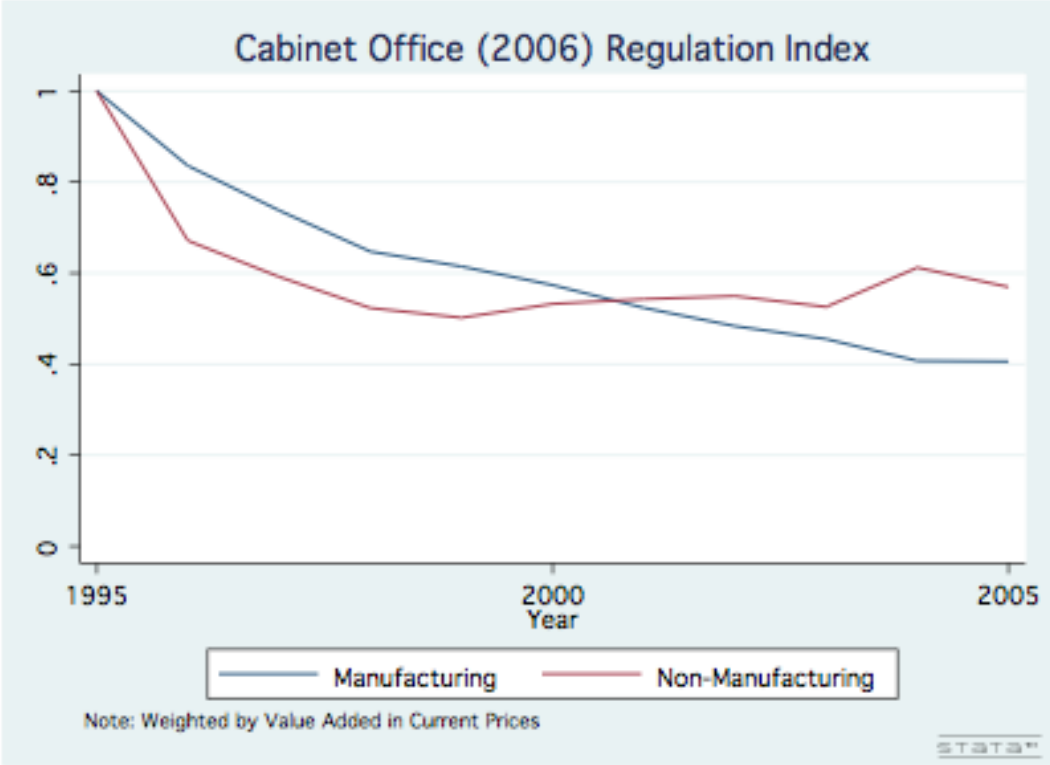
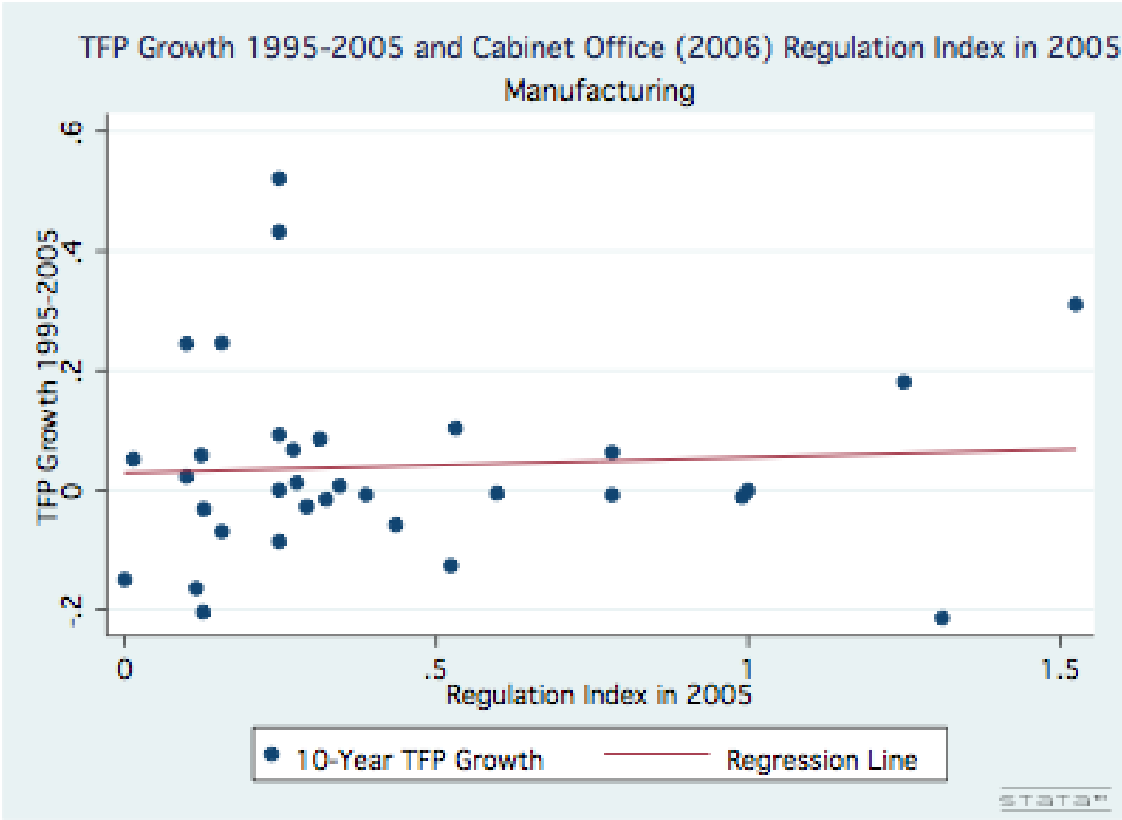


Figure 11: Cabinet Office (2006) Regulation Index and TFP growth

A. Manufacturing Sector



B. Non-manufacturing

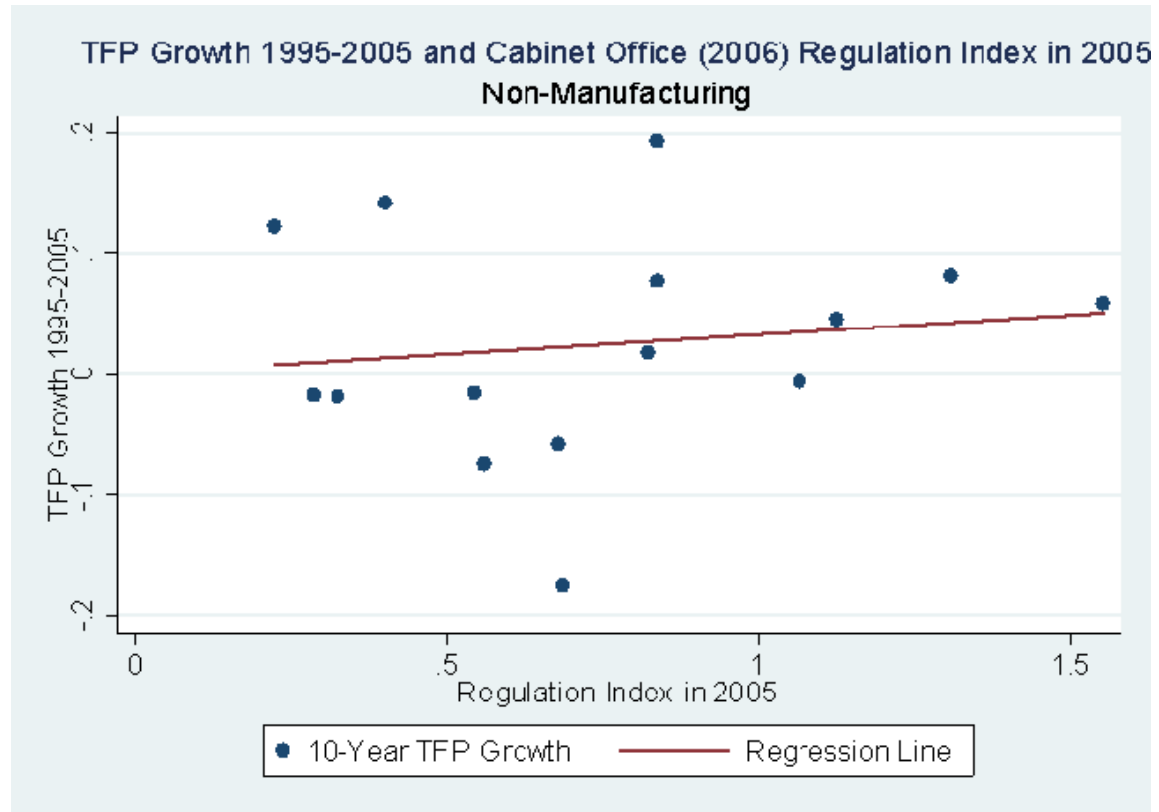


Figure 12: Weighted Average of Regulation Index: Alternative Index Using Regulations in Category A only

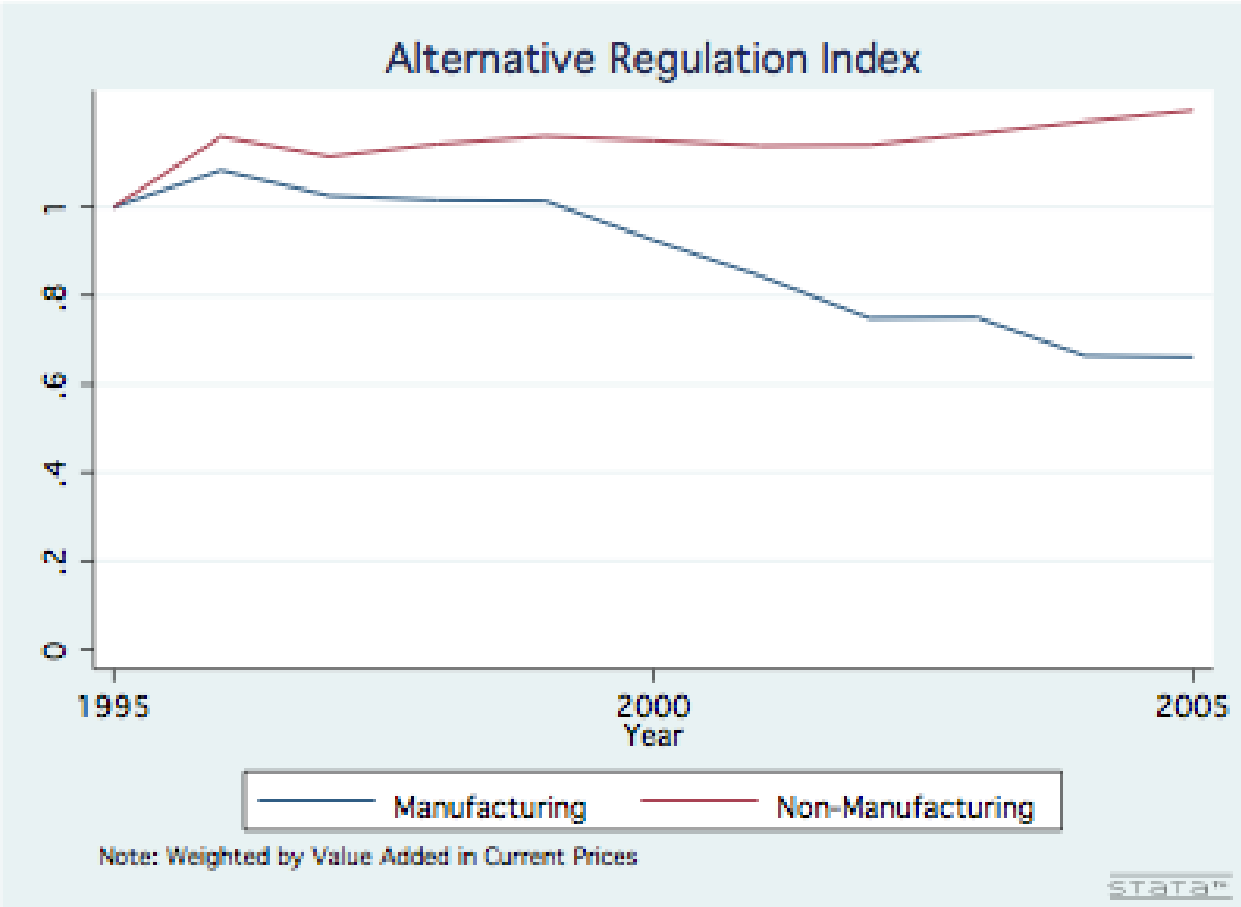
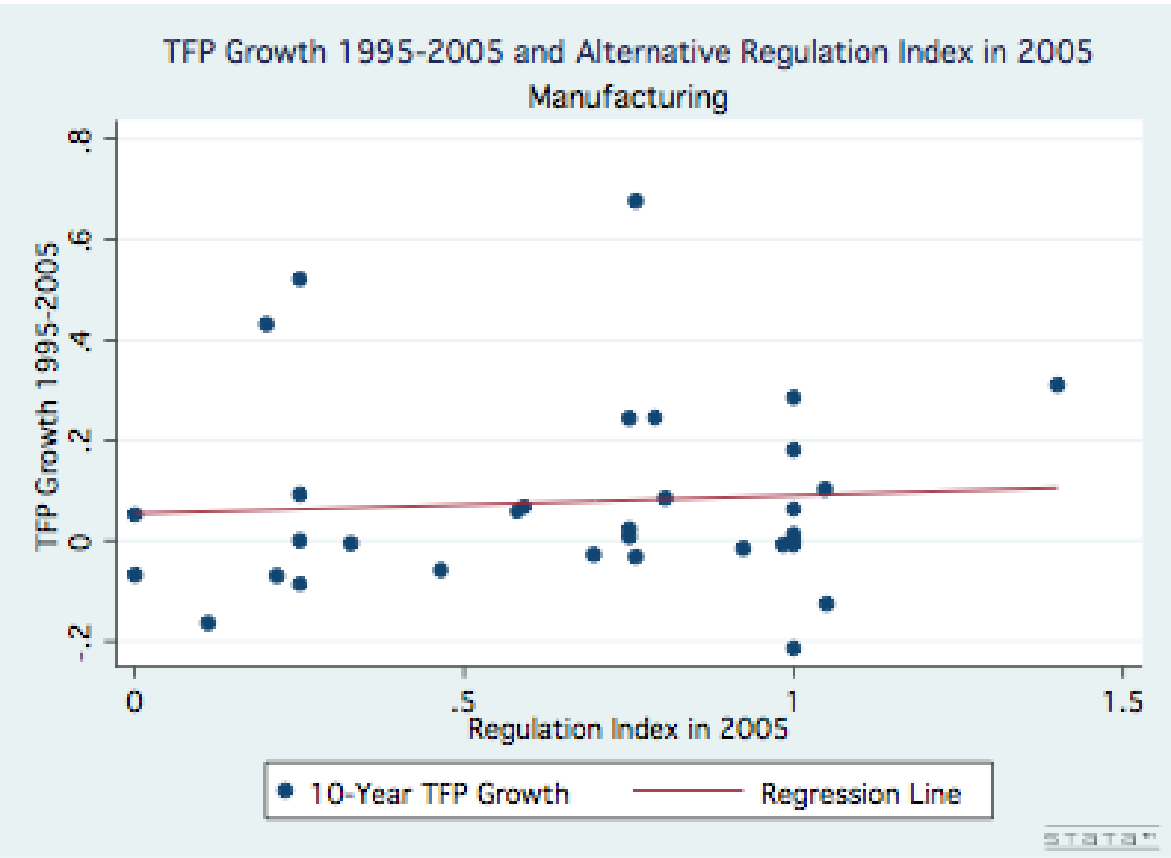


Figure 13: Alternative Regulation Index and TFP Growth

A. Manufacturing Sector



B. Non-manufacturing sector

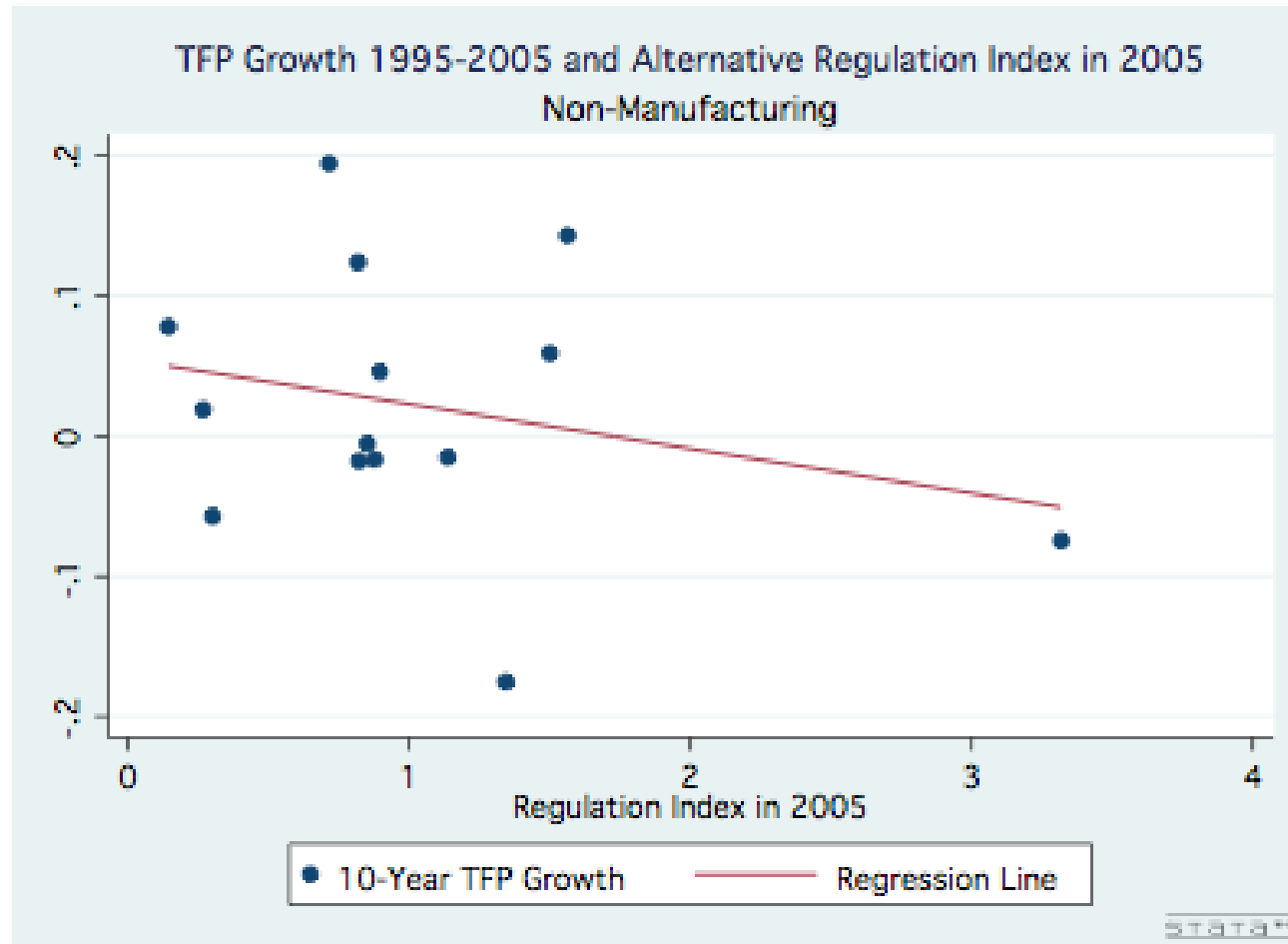


Figure 14: Public Expenditure on Active Labor Market Policies in 2001 (% of GDP)

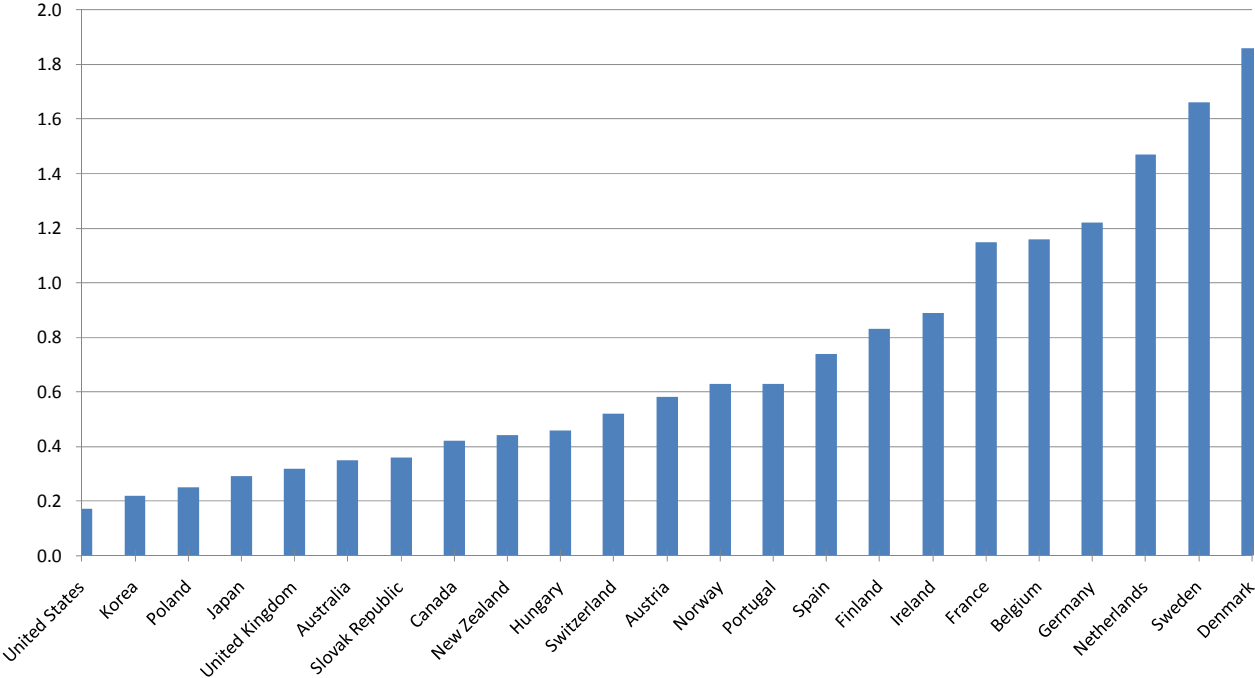
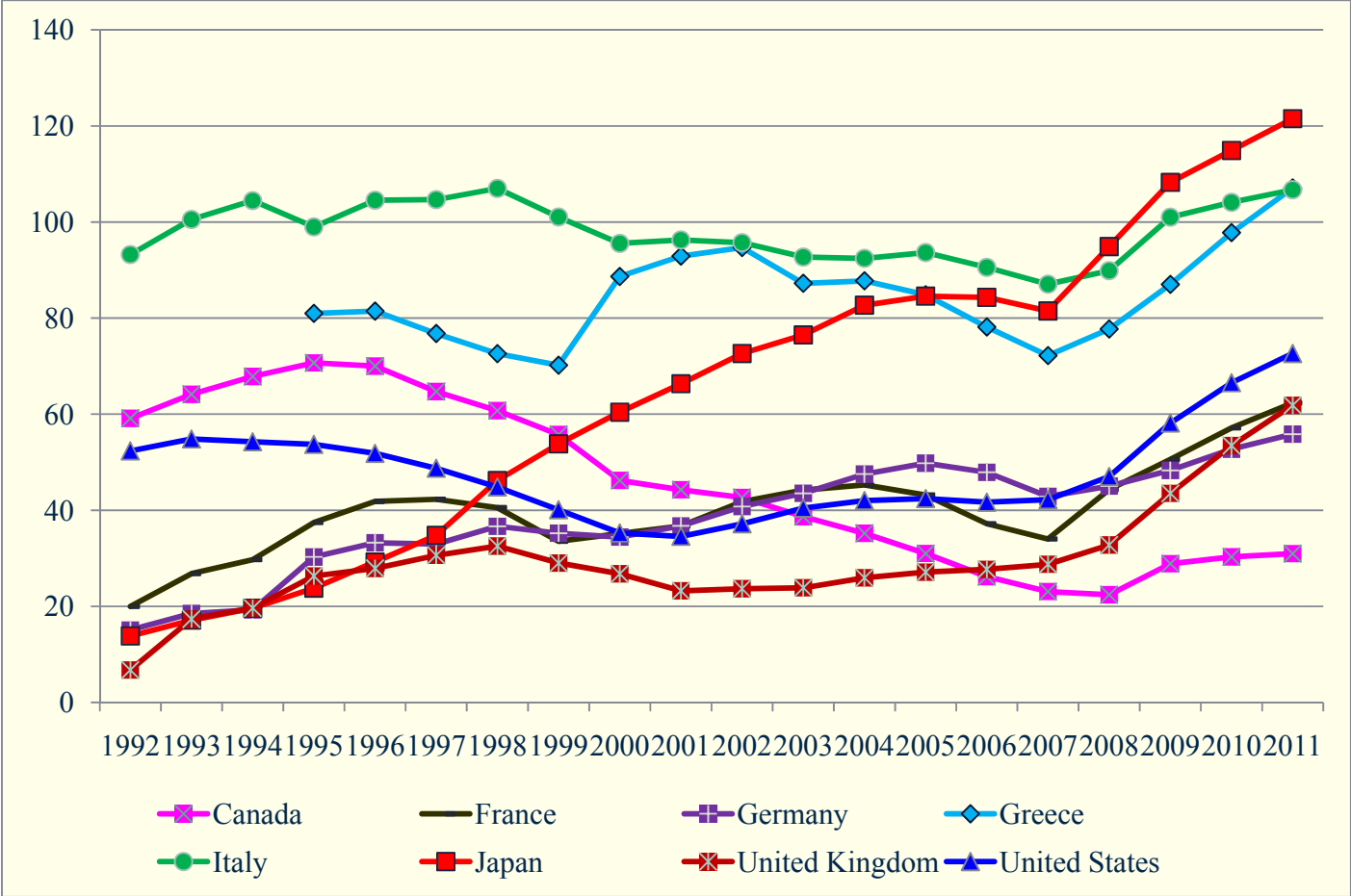
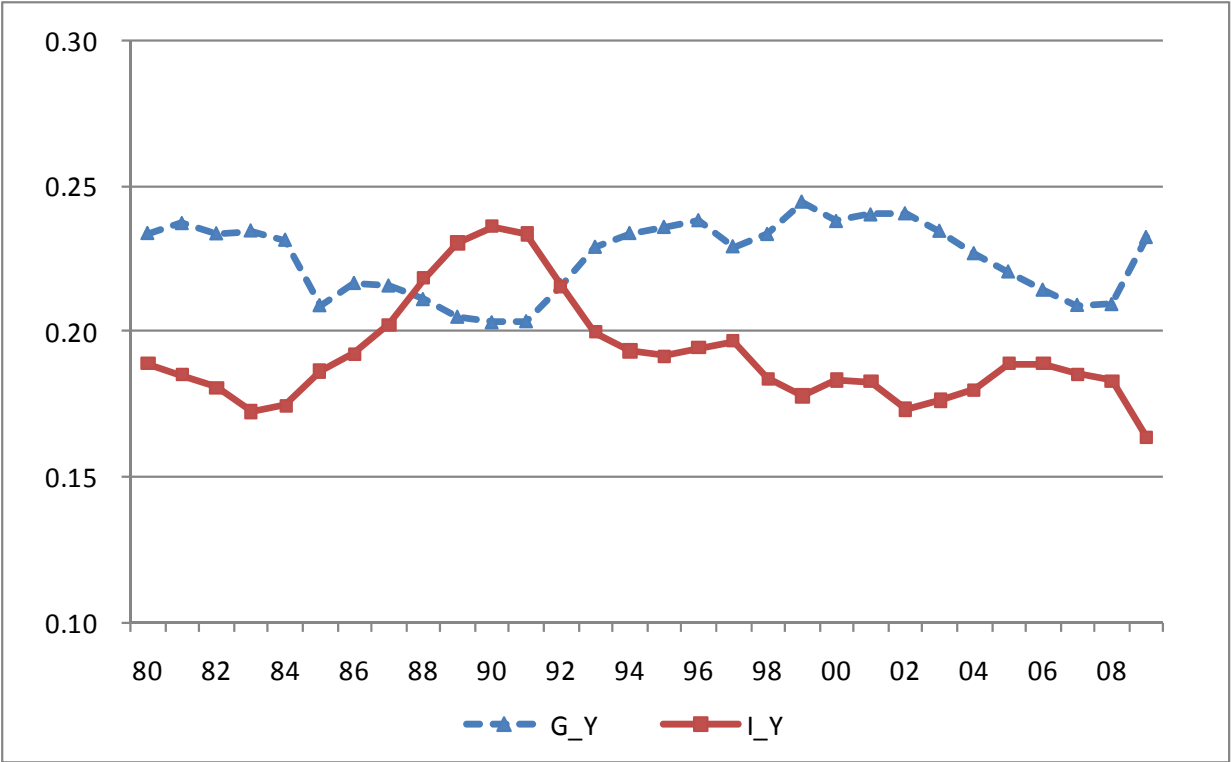


Figure 15: Net Government Debt of selected OECD Countries (% of GDP)



Source: OECD Economic Outlook 87 database. Annex Table 33.

Figure 16: Private Sector Gross Fixed Capital Formation and Total Government Spending Relative to GDP



Source: http://www.esri.cao.go.jp/en/sna/qe103-2/gdemenu_ea.html

Figure 17: Distribution of Public Spending

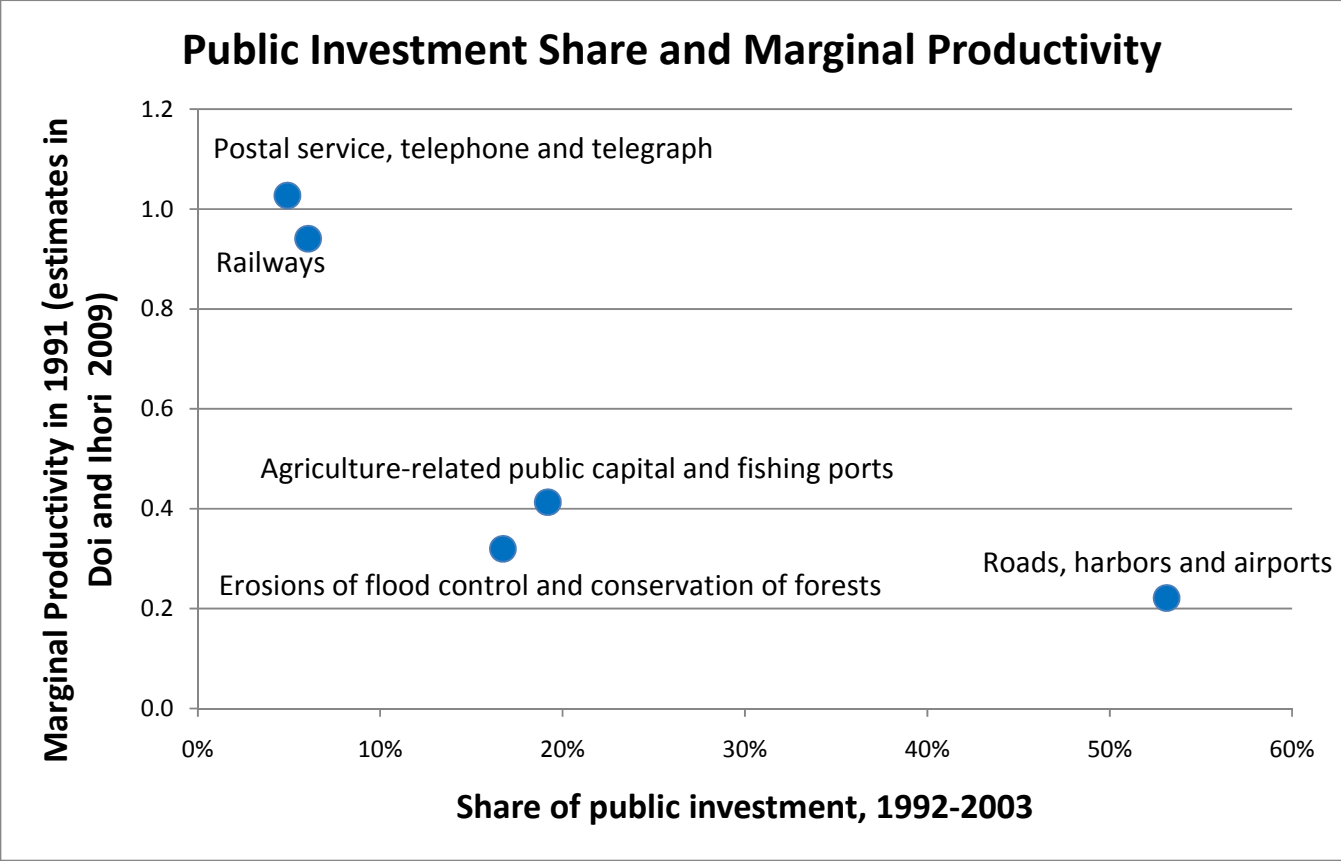
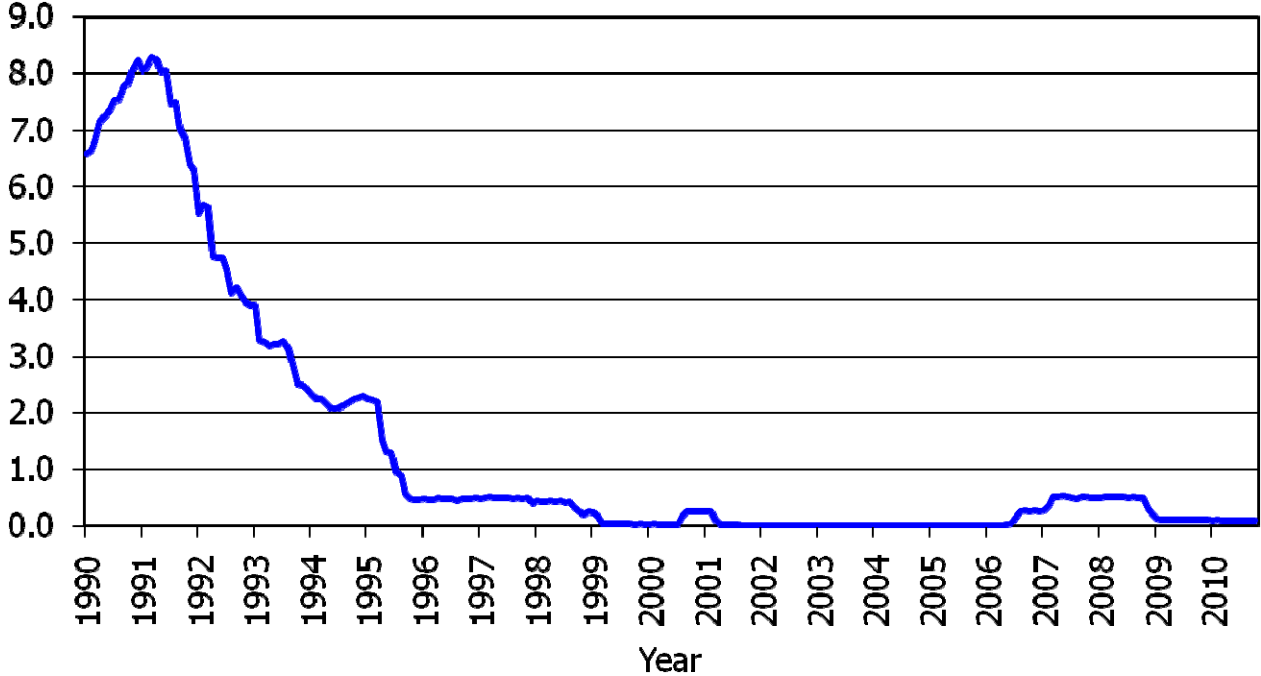


Figure 18: Japanese Policy Interest Rate, 1990 to 2010

Call rate (uncollateralized, %, monthly average)



Tables

Table 1: Importance of External Demand Across Countries, 1995 to 2009

Country	Contribution of External Demand to GDP Growth: 1995 to 2009	Average Share of Exports in GDP: 1995 to 2009
USA	-4.4%	10.8%
UK	-4.9%	27.3%
Japan	26.6%	12.5%
Italy	-7.4%	26.1%
Germany	19.9%	35.6%
France	-7.2%	25.9%
Canada	-7.3%	38.7%

Table 2: China and Japan

	Growth in Output per Worker	Contribution from Capital per Worker	Contribution from TFP
Japan 1955-1971	8.05%	3.04%	5.02%
Japan 1970s	3.74%	1.74%	2.00%
Japan 1980s	3.23%	2.98%	0.26%
Japan 1992-2002	0.59%	0.06%	0.53%
Japan 2003-2007	2.14%	0.73%	1.41%
China 1998-2007	9.79%	5.21%	4.58%

Source: Accounting for China's Growth by Loren Brandt and Xiaodong Zhu, IZA DP No. 4764, February 2010 and authors' calculations

Table 3: Impact of Zombie Firms on the Investment, Employment and Productivity of Non-Zombies

Dependent Variable	I/K	$\Delta \text{Log E}$	Log Sales – $\frac{2}{3}$ Log E – $\frac{1}{3}$ Log K	I/K	$\Delta \text{Log E}$	Log Sales – $\frac{2}{3}$ Log E – $\frac{1}{3}$ Log K	I/K	$\Delta \text{Log E}$	Log Sales – $\frac{2}{3}$ Log E – $\frac{1}{3}$ Log K
Non-Zombie Dummy	0.0256 (0.0056)	0.00109 (0.001751)	0.0139 (0.0135)	0.0248 (0.0057)	0.0002 (0.0018)	0.0119 (0.0137)	0.0238 (0.0056)	0.0001 (0.0017)	0.0150 (0.0136)
Industry Zombie %	-0.1370 (0.0376)	-0.0454 (0.0116)	-0.3418 (0.0922)						
Non-Zombie * Industry Zombie%	-0.0885 (0.0330)	-0.0232 (0.0102)	0.2183 (0.0756)	-0.0852 (0.0333)	-0.0188 (0.0102)	0.2315 (0.0767)	-0.0716 (0.0321)	-0.0128 (0.0098)	0.1980 (0.0770)
Sales growth							0.3490 (0.0176)	0.1404 (0.0073)	0.3123 (0.0256)
Industry dummies included?	Yes	Yes	Yes	No	No	No	No	No	No
Year dummies included?	Yes	Yes	Yes	No	No	No	No	No	No
Industry*year dummies included?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	22,396	22,429	23,090	22,396	22,429	23,090	22,394	22,428	22,847
\bar{R}^2	0.0537	0.0895	0.3599	0.0617	0.1007	0.3590	0.1125	0.1794	0.3705

Table 4: Major Koizumi Administration Reforms

Reform area	Would the reform help restoring growth?	What was the stated goal?	Did the reform achieve the stated goal?	Has the reform completed?	Unintended consequences
1. Financial system reform	Yes. By forcing banks to restructure zombie firms. Healthy financial system supports investment.	Reduce the NPLs at major banks to a half of March 2002 level by March 2005	Yes.	Almost. Resona Bank, which received public capital injection, is still government owned.	Credit crunch
2. Postal Privatization	Yes. By releasing the postal savings to be used more efficiently in the private sector.	Privatize the postal services	Technically yes, but effectively no.	No. Divestiture of government owned shares did not start and now stopped indefinitely.	Deterioration of quality of services
3. Labor reform (Revision of the Dispatched Workers Act)	Maybe. More flexible labor market reduces the cost of economic restructuring, thereby productivity growth.	Increase the flexibility of labor market and the diversity of jobs	Not clear.	No. Trend of deregulation after Koizumi.	Increase of poorly paid workers with insecure employment
4. Promotion of FTAs and agricultural reform	Yes. By increasing productivity of agriculture. FTAs help maintaining markets for Japanese industrial products.	Promote large scale farming that is internationally competitive	No.	No. Agricultural policy has been reversed since Koizumi left.	Trade diversion rather than trade expansion
5. Deregulation through special zones	Maybe. If growth enhancing deregulation can spread beyond the zones	Promotion of local economy; experiment with deregulation	Varies.	Still continuing. In some cases, nationwide implementation of deregulation.	Special zones simply divert demand away from the neighboring regions
6. Local public finance reform (“Trinity” reform)	Maybe. If increased financial autonomy of local governments leads to reduction of wasteful spending.	Reduce the annual transfers to local governments by ¥4 trillion by FY2006. Local governments find their revenues to replace this.	Partially. The reduction was successful, but many local governments failed to find new revenue sources. Backlash after Koizumi.	Reform period (2003 to 2006) ended. Gradual roll back after Koizumi government.	Severe expenditure cuts in some localities.

Table 5: Japan's Latest Growth Strategy (June 18, 2010)

Targets

1. Achieve nominal and real growth in excess of 3% and 2% respectively
2. Positive inflation in consumer prices in fiscal 2011
3. Lower the unemployment rate to 3%-4% range as early as possible

There are 7 strategic areas and 21 national strategic projects

1. Green innovation
 - a. Expand the renewable energy market by introducing “feed-in tariff” system for electricity
 - b. Designate future cities
 - c. Promote domestic timber utilization
2. Life innovation
 - a. Create consortiums to promote new medical care
 - b. Set up medical care visa and accept foreign patients
3. Asia
 - a. Market infrastructure projects to Asian countries
 - b. Reduction of corporate tax rates; introduction of tax incentives for foreign investment into Japan
 - c. Globalization of university education; increasing acceptance of high-skilled foreign workers
 - d. Roadmap for winning the global standard setting race; strengthening intellectual property protection
 - e. Economic partnership through free trade areas
4. Tourism and local revitalization
 - a. Designate special zones; open skies policy
 - b. Ease tourist visa requirements
 - c. Expand the existing housing and remodeling markets
 - d. Open public facilities to private sector promote projects using private sector funds
5. Science, technology and information technology
 - a. Develop intensive industry-academia-government cooperation in technology
 - b. Promote utilization of information technologies; introduce a national ID system

- c. Enhance government related R&D investment
- 6. Employment and human resources
 - a. Integrate kindergartens and nursery schools
 - b. Introduce “career grading” system and “personal support” system
 - c. Implement efforts to build public service supported by the people; reform taxation on donation and NPOs
- 7. Financial services
 - a. Create an integrated exchange for securities and commodities

**Appendix for
Why Did Japan Stop Growing?**

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and

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Booth School of Business, University of Chicago, NBER, and Federal Reserve Bank of Chicago

January 21, 2011

This appendix contains brief case studies of the Koizumi reforms in six key areas.

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1. Financial System Reform

1.1. Target and plan

The nonperforming loans problem in the Japanese banking sector were triggered by the collapse of asset prices in the early 1990s, but continued to exist into the 2000s. As of the end of March 2002, the nonperforming loans (NPLs) held by the major banks in Japan amounted to 8.4% of their total loans. The turning point came in the fall of 2002 when Heizo Takenaka took over from Hakuo Yanagisawa as the new Minister of Financial Affairs. With the strong backing of the Prime Minister Junichiro Koizumi, Takenaka ordered the major banks to reduce NPLs by

half. The “Takenaka plan” to reduce NPLs consisted of the six pillars: (1) to have banks make more rigorous assessment of their assets using the discounted cash flow method of determining the profitability of a loan; (2) to check cross-bank consistency in the classification of loan quality for large debtors; (3) to announce the discrepancy between the banks’ self-evaluation and the evaluation by the Financial Services Agency (FSA); (4) to be prepared to inject public funds to under-capitalized banks if necessary; (5) to impose business improvement orders on banks that substantially underachieved their revitalization plans; and (6) to prohibit banks from boosting profitability (and capital) by declaring unrealistically large deferred tax assets. Let us look at each pillar more closely.

1.1.1. More rigorous assessment of bank asset quality

To accelerate disposal of nonperforming loans, Takenaka asked banks to more rigorously evaluate their assets. Many banks tried hard to minimize the stated amount of NPLs claiming that the loans would become collectible once the economy turned around. In fact, these loans typically did not prove collectible and instead would eventually be deemed nonperforming, thus adding to the stock of NPLs. Takenaka tried to stop this cycle by forcing banks to assess realistically the quality of their loans.. A critical step was to move away from the existing practice of judging the viability of a loan based on whether the current payments were being made. In the ultra low interest rate environment that prevailed in 2002, many companies could

make their loan payments and if they could not, the loans could be extended with hardly any change in the required payments. Takenaka stopped this cover-up by having the examiners use the Discounted Cash Flow method to estimate the value of loans to the largest debtors, so that the whole future stream of payments had to be considered in assessing loans. This change forced the banks to recognize losses much sooner.

1.1.2. Cross-bank consistency of classification of large debtors

The FSA examined how major banks classified large debtors, and tried to require consistent evaluations across banks. To do this, the FSA took the most appropriate classification for each large borrower and forced that on all the major banks. This emphasis on horizontal consistency of credit risks across banks was adopted by Federal Reserve in its Supplementary Capital Assessment Program (the so-called stress tests), and is now viewed as a critical element of best practice in systemic bank supervision.

1.1.3. Publishing discrepancies between the bank self evaluation and the official examination of

FSA

Starting from March 2003, the FSA began publishing the discrepancies between the banks' self evaluation of their loan quality and the official FSA estimates. The banks were ordered to reduce the discrepancy by adjusting their evaluation process. If a bank failed to correct the difference in a timely manner, the FSA issued a business improvement order. The

business improvement orders had the force of law and removed the misreporting that had been present.

1.1.4. Injection of public funds

The prevailing government policy had been to consistently understate the capital needs of the banking system and to give weak banks satisfactory evaluations. Mr. Takenaka declared he would inject public funds to under-capitalized banks if necessary, and he did so. Resona Bank's capital ratio for March 2003 fell below the regulatory minimum of 4 % after it was not allowed to count five year worth of deferred tax assets as a part of its capital. The FSA used the Section 102-1 of the Deposit Insurance Act to inject ¥1.96 trillion into Resona Bank.

Ashikaga Bank also saw its capital ratio for March 2003 fall below 4%, when the FSA refused to allow the bank to count five year worth of deferred tax assets toward its capital.

Ashikaga was actually declared insolvent with negative net worth of ¥1.023 trillion. Ashikaga Bank was outright nationalized under the Section 102-3 of the Deposit Insurance Act.

The stock market responded favorably to these injections. After falling to the post-bubble lows below ¥8,000 in March and April of 2003, the Nikkei 225 started to recover right after the capital injection to Resona and broke ¥10,000 by the summer. Many contemporaneous accounts of this period credit the commitment of public funds and the determination to force banks to find capital on their own or to get it from the public as the

catalyst for turning around the banking problems (Patrick 2004).

The initial government funds put into Resona proved to be inadequate. Indeed, a subsequent audit showed that loan losses in the next few months wiped out all of the capital that had been put in. But once Mr. Takenaka's process was in place and it was clear that Resona could not simply continue to disguise its problems, the stock market began to rally. As of the end of August 2010, ¥1.53 trillion of the capital injection of ¥1.96 still remains, and Resona continues to file biannual progress reports to the FSA.¹

1.1.5. Penalty for not reaching the targets in the reconstruction plans

Banks that received public capital in 1999 thereafter were required to file reconstruction plans with the FSA and to update the status of progress on the plan twice a year. Given the widespread assistance to banks in 1999, this meant many large banks were already filing these plans when Mr. Takenaka took over. In the plans, the banks were required to state the targets on their profitability, the size of reduction of branches and employees, and so on. Prior to Mr. Takenaka's appointment banks routinely failed to achieve the stated targets, but the FSA did very little if anything about the misses. Mr. Takenaka introduced the so-called "30% rules." If a bank missed the reconstruction targets by more than 30%, the FSA imposed the penalties through the use of business improvement orders. These sanctions sometimes forced the resignation of

¹ Progress on the repayment can be found at (http://www.dic.go.jp/english/e_katsudou/e_katsudou3-3.html).

senior management and/or reduced salaries and bonuses for management.

1.1.6. Deferred tax assets

At the end of March 2002, Japanese banks collectively had ¥30.2 trillion of core capital, but ¥10.6 trillion of core capital was made up of deferred tax assets. Deferred tax assets were controversial because of their peculiar nature. They are tax deductions coming from past losses that the banks would only be able to claim in the future if they became profitable. If the banks failed to regain their profitability within five years, these credits disappear.

Mr. Takenaka wanted to prevent banks from overstating future profits and thereby claiming unrealistically large amount of deferred tax assets. Initially this part of his plan met extremely strong resistance from the banking sector. The FSA examiners and auditors, however, eventually became more conservative and forced the bank to reduce their reliance on the use of deferred tax assets to satisfy their capital requirements. In particular, following the Resona case, the use of deferred tax assets was substantially curtailed (Skinner 2008).

1.2. Assessment of the reform

The Takenaka plan worked. One noteworthy feature was the precision of his instructions which reduced the ability of the banks to cover-up non-compliance. He created a transparent system for monitoring progress by putting numerical targets in place for the reduction in NPLs, and insisting that progress reports come within 30 percent of the actual results. In

addition, the threat (and use) of business improvement orders was essential in forcing banks to accede to the wishes of the regulators.

Figure A1-1 shows how the major banks reduced the NPLs following the Takenaka plan. In March 2002, the amount of NPLs at major banks peaked at ¥ 27.626 trillion. After the Takenaka plan started later in that year, the NPLs steadily declined. The major banks disposed of about ¥7 trillion of NPLs each year from 2002 to 2005. The goal of the plan to reduce NPLs of the major banks in half by the end of March 2005 was successfully achieved: NPLs at the major banks were ¥ 13.567 trillion by March 2005.

Finally, we can speculate what would have happened if Mr. Takenaka had not implemented the financial revitalization program. Banks probably would have continued to evaluate their assets leniently. As Omura et al. (2002) argue, the non-performing loans would have stayed on the banks' balance sheets. The continued lack of harmonization in classifying loans to largest debtors would have made it easy for banks to carry on without recognizing troubled loans. Hence, it is not clear when prevailing cycle that was in place before Mr. Takenaka offered his plan would have ended.

2. Postal Privatization

2.1. Targets and Plans

Japanese postal service was operated by the government and provided three types of services: mail, postal savings, and postal life insurance. Combining the postal savings and the postal life insurance, the total financial assets of Japan Post was approximately ¥350 trillion, which accounted for 25% of banking and life insurance financial asset in Japan. The postal savings and postal life insurance assets constituted the most important source of funds for the Fiscal Investment and Loan Program.

During the 1990s, the government started to recognize some problems with the existing model of postal services. The transaction volume and profits of mail services declined significantly due to the innovation and rapid expansion of the internet and email. For the postal savings and life insurance, the private sector began criticizing them for using their government guarantee to compete unfairly with private businesses.

The idea of privatizing postal services goes back at least to 1992, when Junichiro Koizumi (then Minister of Posts) advocated the privatization. Mr. Koizumi continued to push for postal privatization and finally implemented it when he was the Prime Minister. The postal privatization was the cornerstone of Koizumi's policy to "leave the private sector what it can do."

The outline of postal privatization was first drafted in October 2003 by Heizo Takenaka, who later became the Minister of Postal Privatization. In the draft, he specified five core

principles of postal service privatization. The first is revitalization. Postal privatization must revitalize the Japanese economy by integrating the functions of the national postal services into the market economy. The second is consistency. Postal privatization must be consistent with other structural reforms, such as the financial system reform and fiscal consolidation. Postal privatization should not harm the financial system. It should not impose a fiscal burden, either. The third is convenience. Postal privatization should maintain and improve the convenience currently offered to the users. The fourth is full utilization of the existing resources. Postal privatization should fully use the human capital, physical capital, know-how and network that had been accumulated over more than 100 years. Finally, the fifth is job protection. In postal privatization, the current jobs should be protected as much as possible.

Mr. Takenaka's principles eventually developed into the Basic Principles of Postal Privatization that was approved by the Cabinet on September 10, 2004. The Basic Principles specified that the postal services would be privatized in 2007 by creating a holding company to control four joint stock companies which represent four function areas of the postal services: mail, postal savings, postal life insurance, and post offices (network). The new companies would compete with private companies on equal footing. To achieve this, the government guarantees on postal savings and life insurance contracts would be abolished. To protect the jobs, all the current workers will be employed by one of the new companies.

The Postal Privatization and five related bills based on the Basic Principles were submitted to the 162nd ordinary diet session in April 2005. The postal privatization bill faced stiff resistance by many diet members from the Liberal Democratic Party (LDP). The bill managed to pass the House of Representatives by five votes on July 5, 2005, but failed to pass the House of Councilors by seventeen votes on August 8, 2005. Prime Minister Koizumi dissolved the House of Representatives and asked the public to vote for the postal privatization. He also purged the LDP members who opposed to the bill. In the general election of the House of Representatives, the LDP won a sweeping victory by adding 47 new seats. The postal privatization bill passed the House of Representatives on October 11, 2005 and the House of Councilors on October 14 during the 163rd special Diet session.

The privatization started in October 2007 with the creation of four new joint stock companies that would inherit the assets and business from the old postal service: Japan Post Service Co., Ltd (JP Service), Japan Post Network Co., Ltd (JP Network), Japan Post Bank Co., Ltd (JP Bank), and Japan Post Insurance Co., Ltd (JP Insurance). By clearly separating business segments, the privatization aimed at stopping the practice of subsidizing losses in mail services using profits from postal savings and postal insurances. The management of JP Bank, JP Insurance, and JP Network was given an option to separate each company by regions in the future if deemed appropriate. The Japan Post Holdings Co., Ltd (JP Holdings) was established as

a pure holding company that initially would own 100% of the four operating companies. The privatization was supposed to complete by the end of September 2017. By this date, the government is supposed to divest more than two thirds of the JP Holdings. The JP Holdings is supposed to fully divest its shares of JP Bank and the JP Insurance. Soon after the privatization of 2007, a divestiture plan was submitted by the JP Holdings and approved by the Prime Minister. Under the plan, JP Holdings was supposed to list the JP Bank and the JP Insurance on a stock exchange in 2010 and fully divest in five years from the date of listing. The JP Holdings' own stock was supposed to be listed on an exchange by 2017.

One of the important businesses of the JP Holdings is a management of the Social and Regional Service Fund (SRS Fund). The purpose of this fund is to support and maintain the JP Group's universal service. Under the law, JP Service and JP Network must provide universal service. JP Holdings use the SRS fund to sustain unprofitable post office operations in remote areas. JP Holdings has to maintain a minimum ¥1 trillion of the SRS fund by accumulating dividends from JP Bank and JP Insurances shares. When the stocks of the financial companies are sold to the public in the future, a part of the capital gain on the sale must be contributed to the SRS fund.

JP Network is responsible for the post office operations all over Japan. The other three companies (JP Service, JP Bank, JP Insurance) entrust their service window operations to JP

Network. JP Network was also allowed to enter new businesses such as ticket distribution and renting space for local public service using their post office network.

JP Service provides mail, package, and cargo delivery services. JP Service established a couple of alliances with the private sector companies to improve its profitability. JP Service's package service division merged with Nippon Express's package delivery business in October 2009. JP Service also established an alliance with All Nippon Airways and launched a new international cargo company ANA & JP Express Co., Ltd.

The business of JP Bank and JP Insurance are less restricted than the other JP Group companies. For example, they are not obligated to provide universal service, although they were still required to sign long-term contracts (of multiple years) with JP Network to indirectly support the non-profitable part of the JP group.

2.2. Impact of the Reform

By the phased in nature of the plan, much of the impact would not be felt until the privatization was further along. But after the Democratic Party of Japan, which originally opposed the postal privatization bill, took the office in 2009, they have started to roll back postal privatization. In September 2009, the government intervened in the management of the JP Insurance and ordered it to cancel of plans to sell inns they own and manage (even though many of generate losses). In December 2009, the Diet passed a bill to freeze the divestiture in postal

companies. In May 2010, the Postal Reform Bill was submitted to the Diet. The bill seeks to merge the JP Holdings with the JP Service and the JP Network, to make the JP Bank and the JP Insurance the subsidiaries of the new merged company, to relax the FSA supervision of JP Bank and JP Insurance, to raise ceilings on insured limits for postal savings and life insurance, to make the JP Bank and the JP Insurance exempt from consumption tax, and to convert up to 100,000 non-regular employees in the JP group to regular employees. Thus the bill would roll back essentially all of the Koizumi reforms, restore the cross-subsidization across business lines, and allow parts of the postal system to exploit their government backing for competitive advantage. The Diet ended before it started to deliberate on the bill, but the current government is still trying to submit a revised version of the bill to a future Diet.

3. Labor Market Reform

3.1. Target and plan

The rigidity of Japanese labor markets has been the source of large scholarly literature.²

While the Koizumi government implemented several reforms to increase the labor market flexibility, we focus on the 2003 amendment of the Dispatched Workers Law (Haken Rōdōsha

² See Rebeck (2005, Chapter 2) for a survey. Ono (2010) finds that continued rigidity introduced by lifetime employment reduced opportunities for new entrants to the labor market during stagnation.

Hō). This amendment was the major labor reform undertaken by the Koizumi administration and it has become a symbol of the Koizumi's reforms. Especially when many dispatched workers lost their jobs during the global recession of 2008-2009, the public pointed to this change as having created a large class of workers with insecure employment and low wages.

This amendment was a response to requests by both employers and employees. Employers wanted to be able to change the labor force quickly to adjust to ever shortening product cycles. For example, the 1995 report titled "Japanese-style management for new era" by the Japan Economic Federation argued that "Workers will be stratified in three groups, long-term skilled workers, advanced experts, and temporary workers." Many workers also favored more flexible labor contracts so that it was possible to find work at firms that were not prepared to take on workers with an implicit long-term commitment.

The use of employment agencies to send temporary workers to other companies was prohibited by law before 1985. To respond to increased demand for more variety of employment arrangements favored by both management and workers, the Dispatched Workers Act was promulgated in 1985. This law permitted the use of dispatched workers on a limited basis, and subsequently was revised to expand its scope.

The first major amendment came in 1999. Prior to that change, temporary workers could only be employed for specific jobs (11 originally, 26 later) that were explicitly allowed by

the government (a “positive list” system). The 1999 amendment reversed this policy so that dispatching was now permitted for any type of jobs except for those explicitly prohibited by law (a “negative list” system). Given that the new types of jobs constantly appear with technological development, this switch represented a major relaxation of the rules.

The 2003 revision under the Koizumi administration sought to both increase the flexibility of the labor market and increase the overall employment. There were four major changes: (1) relaxation of the term limits on certain dispatched jobs, (2) removal of the manufacturing jobs from the negative list, (3) requirement to offer direct employment at the end of the contracted term, and (4) legalization of “temp to perm” arrangement. Before the revision, temporary workers in the 26 jobs on the original positive list were allowed to have contracts of no more than three years. The Koizumi revision eliminated the term limits for those jobs. For other jobs, the length of contracts had been limited to be no more than one year, and the revision extended the limit to three years.

Even after the 1999 revision, dispatching of workers to manufacturing jobs had been prohibited. The 2003 reform removed manufacturing jobs from the negative list. The length of contracts, however, was limited to be no more than one year until February 2007, when the limit was extended to three years.

The revised law introduced a new requirement that aims to prevent firms from using

temporary employment just to avoid providing benefits to otherwise regular workers. A company is required to offer permanent employment to a dispatched worker if they want to hire him/her beyond the contract term. For those temporary workers who had no term limits the firm is required to offer permanent employment if they have hired him/her for more than three years. Moreover, when a company hires new regular workers into the same job, the dispatched worker must be given priority.

Finally, the revised law allowed employers to offer “term to perm” contracts. Under these contracts, a dispatched worker begins to work with a presumption of becoming directly employed. If the company and worker agree at the end of contract the worker is then employed directly. The revised law also allowed a potential dispatched worker who wishes to be on a “term to perm” contract to send in a resume and to have an interview with a company.

3.2. Assessment of the Reform

Figure A3-1 shows data on the number of dispatched workers over time. The trend increased modestly in 1999 and much more in 2003. So quantitatively the 2003 amendment appears important.

Figure A3-2 shows that much of the post 2003 surge was due to an increase in the use of dispatched workers in manufacturing. But the raw data in the figure overstates the increase. Even before dispatching to manufacturing jobs were officially allowed in 2003, many

manufacturing firms had subcontracting arrangements with some other firms whose sole function is to hire the workers to work at factories of the manufacturing firms. This was *de facto* temporary dispatching, but it took a form of subcontracting to get around the regulation that prohibited worker dispatching for manufacturing jobs.

After the 2003 revision of the Dispatched Workers Act, the manufacturing firms did not have to pretend to have the subcontracting arrangements. They started to use dispatched workers and the number of contract-based workers declined. Table A3-1, which shows the changes in the numbers of dispatched workers and contract-based workers in manufacturing after 2003. The substitution of contract-based workers with dispatched workers was substantial. From 2005 to 2008, the number of dispatched workers in manufacturing increased by about 488,000. During the comparable period, the number of workers from subcontractors declined by about 327,000. Thus, around two thirds of the increase of dispatched workers seems to have been just the replacement for *de facto* dispatched workers from subcontractors.

Several problems had been identified for the use of subcontracting to hire low skilled workers in the manufacturing. The most important one was the lack of responsibility for the manufacturing firms in maintaining appropriate working conditions for these workers. Technically, that was the job of the subcontracting firms, but they did not have any control over the conditions for what were (supposedly) their own workers. With the revised law, the

manufacturing firms had to follow all the rules concerning employment of temporary dispatched workers. Thus, the revised law was actually tightened safety standards for these people.

Legalization of “temp to perm” arrangement achieved some positive results. Table A3-2 shows the number of dispatched workers who were hired as regular worker at the end of the contracts. The number increased steadily over time, and the proportion of these types of arrangements relative to the total number of total dispatched workers also increased.

Employers argued the flexibility afforded by the dispatched workers helped them manage negative demand shocks. Table A3-3 shows that during the global recession of 2008-2009 employment fell by about 610,000, with more than half (320,000) coming from a reduction in the number of dispatched workers.

The misery of the dispatched workers who lost the jobs was soon highlighted by media as the dark side of the structural reform and this triggered a political backlash. The media and some politicians criticized the corporations that fired dispatched workers and the Koizumi government for having expanded this unstable form of employment in the first place.

3.3. Unintended consequences

The changes in use of dispatched workers had different effects in different industries. Prior to 2003, surveys suggest that most dispatched workers were dependent family members.

Afterwards, many household heads became dispatched workers, especially in manufacturing.³ As a result, the average wage of dispatched worker increased and the size of lower middle income class (¥3,000,000-¥4,000,000) grew. (Figure A3-3). Outside of manufacturing, the impact on wages was mixed. Earnings for many dispatched workers in Wholesale and Retail and Information and Communications dropped, while a large percentage of low wage dispatched jobs in Finance and Insurance disappeared.

There have been many complaints that the increase in the use of dispatched workers has been an important factor in expanding income inequality and employment instability. Given that only 8% of the non-standard jobs are held by dispatched workers, it is doubtful that the increased inequality and instability are direct consequences of the expansion of dispatched workers. But, as the share of non-standard workers rises, this shift has been associated with a less stable employment market. A full assessment of how much of the increase in non-standard employment is causal as opposed to a reflection of other underlying forces is beyond the scope of this study.

3.4. Backlash after Koizumi

In 2010, a new bill to revise the Dispatched Workers Law was submitted to the Diet and as of this writing remains under consideration. The bill proposes four major changes. First,

³ “Survey of dispatched workers’ lifestyle and job-seeking behavior” (Haken Roudousya No Seikatu To Kyusyoku Koudou Ni Kansuru Koudou Tyousa), The Research Institute of Economy, Trade and Industry (Keizai Sangyou Kenkyuzyo) http://www.rieti.go.jp/jp/projects/research_activity/temporary-worker/01.html

temp agencies are required to have employment contracts with their workers even when they are not dispatched. This would eliminate the arrangement where a worker “registers” at a particular temp agency and sign employment contracts only when (s)he is dispatched to a particular site. The employment contract is effective only for the duration of the dispatched work. For the 26 jobs that were originally designated to worker dispatching, such “registration” dispatch would continue to be allowed as an exception. Second, dispatching of production workers would be prohibited. This would roll back a 2003 revision of the law. Third, dispatching contracts for less than 2 months would be considered day labor dispatch and be prohibited. Finally, to prevent a company to set up a temp agency just to reduce cost by replacing the regular employees with dispatched workers, the proposal makes it illegal for a temp agency to dispatch more than 80% of their workers to its related companies (parent and other group companies).

Prohibition of using dispatched workers in manufacturing looks unlikely to increase the number of regular workers. For instance, according to the survey of the Japan Production Skill Labor Association⁴, if the prohibition is enacted, only 10% of manufacturing companies using dispatched workers plan to hire dispatch workers as regular employees and only another 10%

⁴ “Questionnaire about Tightening of Regulation of Worker Dispatched Law” in 2009 (Roudousya Hakenhou Kiseikyokai Ni Kansuru Kinkyu Anke-to), Japan Production Skill Labor Association (Nihon Seisan Ginou Roumu Kyokai) http://www.js-gino.org/jouho/JSLA_enquete2.pdf

plan to hire new regular employees. Instead, most of companies plan to hire contracted employees, part-time workers or use outside contractors. Some firms indicated that they might also move their factories overseas.

4. Agricultural Reform and FTA Policy

4.1. Target and plan

The Liberal Democratic Party (LDP) traditionally relied on the support of industries such as construction, agriculture, and postal services. These industries were also among the most heavily regulated and protected in the economy. Prime Minister Koizumi as outsider owed no debts to these industries. Thus, by pursuing reforms that opened these industries to competition to advance his economic goal of “reform without sanctuary”, Mr. Koizumi also weakened the base of rival politicians in the traditional wing of the LDP.

The agricultural reform was tied to another important initiative of the Koizumi government: promotion of Free Trade Agreements (FTAs) with various trading partners. The most serious hurdle for negotiating FTAs was domestic opposition from the agricultural sector that believed (correctly) that their high production costs would make domestic products uncompetitive against the cheap foreign products. To prepare the Japanese agriculture for global competition, Koizumi tried to promote large-scale farming.

4.2. Promotion of large scale farming

Table A4-1 summarizes the major agricultural policies of the Japanese government from 2001 to 2010, including both the Koizumi government reforms discussed in this section and those of the subsequent governments that are described later.

Historically, Japan's average farm size was remarkably low (Table A5-2). For instance, the average Japanese farm is roughly the size of farms found in India, and is 10 times smaller than those in Israel, and 150 times smaller than U.S. farms. The LDP protected the small farmers' interests in exchange for their political support. While convenient for the farmers and the LDP, the result was an inefficient production system that led to higher food prices, especially for rice, which was the most common crop.

The Koizumi government implemented several measures to promote large scale farming. The government hoped that by removing the historical bias against large scale farming, productivity could increase and food prices could be reduced. In some cases, such as high quality rice and luxury fruits, there was hope that Japanese agriculture could become internationally competitive.

Mr. Koizumi push to improve the productivity of Japanese farms was not unprecedented. In 1992, in what is known as the New Policy ("New Policy Direction on Food, Agriculture, and Farm Villages"), the government had announced a goal of creating the agricultural sector where

the “efficient and stable” production entities are the majority. Based on this idea, the Designated Farmers System was introduced in 1993. Under the system, a farmer can get certified as a designated farmer if (s)he submits a five year farm management improvement plan to the local government and has the plan approved. Designated farmers gain access to various subsidies and low interest rate credits. Although there was not an explicit size condition to be a designated farmer, the policy’s intention was to encourage large scale and efficient farming.

The Koizumi government seemed to have stepped up its interest in agricultural reform only in the last half of the administration. In 2004, the Act on Stabilization of Supply, Demand and Prices of Staple Foods was revised to liberalize the rice distribution. Before 1995, the distribution of rice was strictly controlled by the government under the Food Control Act. This gave government a monopoly regarding rice distribution. It set the purchase price and the consumer price of rice every year. Since the prices were typically set much higher than the market clearing price (even in the absence of international competition), the rice production had to be rationed. The government did this through *gentan* (acreage reduction policy) that forced each farmer to take monetary compensation to reduce the area for rice production. The policy was implemented through the Agricultural Coop (*nōkyō*). In 1995, the Food Control Act was repealed and replaced by the Act on the Stabilization of Supply, Demand and Prices of Staple Food, which allowed the private sector to enter the rice distribution business to a limited degree. The 2004

reform of the act completely liberalized the rice distribution. Anyone who buys and sells more than 20 tons of rice could now get a license to do that. The acreage reduction policy was also decentralized so that not only the implementation, but also the planning of acreage reduction was delegated to local offices of the Agricultural Coop.

The government publishes a Basic Plan for Food, Agriculture, and Farm Village every five years. The plan published in 2005 reflected some of the reforms that Mr. Koizumi intended. For example, the plan lists five principles for agricultural reform: (1) effective and efficient policy framework, (2) policy catered to consumers, (3) promotion of innovations by individual farmers and regions, (4) emphasis on environmental protection, and (5) forward looking agricultural policy that responds to changes in the environment. Although a large portion of the plan is devoted to the discussion of raising Japan's self-support rate in food, the plan also mentions the importance of increasing the sizes of farms to improve international competitiveness.

At the center of Mr. Koizumi's policy to encourage large scale farming was the Trans-Products Management Stabilization Policy. The policy subsidizes designated farmers with farms larger than 4 hectares (ha) (10 ha for Hokkaido) and qualified agricultural corporations with farms larger than 20 ha. The policy provides two types of subsidies to the farmers. First, when the cost of production exceeds the sales revenues for a specified set of products that are considered to be disadvantaged with respect to foreign products, the farmer receives compensation for the full

difference. Second, when the farm income falls below the past average temporarily, the farmer can receive 90% of the shortfall.

The main idea was to encourage large scale farming by limiting these subsidies only to large scale farmers. The policy, however, included several exceptions. For example, farms in mountainous areas did not have to have the minimum scale to be qualified. If a farm contributes to the local production adjustment (including acreage reduction policy) disproportionately, the size criterion was relaxed.⁵

The Trans-Product Management Stabilization Policy also moved away from the traditional subsidies based on the production of specific crops. Rather than subsidizing production of particular products, the government tried to move to an income policy decoupled from production.

4.3. Promotion of FTA

Traditionally Japan has opposed bi-lateral trade agreements, including FTAs, arguing that such deals undermine the multilateral efforts for trade liberalization through the WTO.

Observing the success of the FTAs elsewhere (such as NAFTA and EU), the Japanese government changed its stance.

⁵ Ministry of Agriculture, Forestry and Fishery, “Hinmoku Oudan-teki Keiei Antei Taisaku toha? (What is the Trans-Product Management Stabilization Policy?)”, December 2006. (<http://www.tendo-nogyo.jp/keieianteitaisaku/kamakura-leaf.pdf>)

The Koizumi government became the first Japanese government to sign an FTA agreement, entering the Japan-Singapore Economic Partnership in January, 2002. During his term, Mr. Koizumi successfully concluded FTA negotiations with four additional countries: Mexico, Malaysia, Philippines, and Thailand. He also started the negotiations with Indonesia, Brunei, ASEAN as a whole, Chile, Korea, and the Gulf Cooperation Council. In those negotiations, the trade barriers on agricultural products have always been a serious obstacle. Article 24 of the GATT specifies that a free trade agreement must eliminate tariffs and other restrictive regulations on “substantially all the trade.” The Japanese government used to interpret this to mean more than 90% of the items. The agricultural lobby asked and often succeeded to make many agricultural products exempt from tariff reduction. For this reason, the government initially focused on the countries such as Singapore whose agricultural exports to Japan were tiny. In the FTA with Mexico, Japan even failed to reduce or eliminate tariffs for more than 90% of items, because many agricultural products were deemed exempt.

4.4. Impact of the reform

Figure A4-1 shows how the proportion of large scale farms (defined as those greater than 4 ha for all prefectures other than Hokkaido and greater than 10 ha for Hokkaido) changed from 1994 to 2009. The proportion increased in both Hokkaido and elsewhere, but the change under the Koizumi government or (after the 2006 introduction of the Trans-Product Management

Stabilization Policy) shows no difference from the trend from the mid-1990s. Thus, we do not see any impact of the large scale farming promotion. More disturbing is the fact that the increased proportion of large scale farms come mainly from the exit of small farms. The number of large scale farms actually declined during the 2000s. For the prefectures other than Hokkaido, the number of farms that are greater than 2 ha decreased from 324,000 in 2000 to 289,000 in 2009. The number of farms that are greater than 10 ha in Hokkaido fell from 30,000 in 2000 to 26,000 in 2009. Exits of inefficient entities would increase the average productivity of the sector, but the Koizumi policy explicitly aimed at increasing the number of efficient and stable farms, and here the result so far suggests that the policy was not effective.

Table A4-3 shows the recent changes in the average size of a farm in Japan. The average size has been increasing but changes are quantitatively unimportant, merely reflecting the slow growth in the proportion of large scale farmers documented above. Overall, the impact of the Koizumi's agricultural reform is not obvious.

On the political side, the reforms unambiguously weakened the LDP members with the strongest ties to agriculture. This group is known as the "Agricultural Tribe." Matsuda (2005) compares the number of votes each LDP politician received in the 2005 House of Representatives Election (which LDP won in a landslide) to the votes the same politician received in the previous election in 2003 for both the Agricultural Tribe and others. She finds that the Agricultural Tribe

increased their votes only by 17.8% on average while the non-agricultural tribe increased their votes by 27.9%. In the House of Representatives election of 2005, all three of the top politicians in the Agricultural Tribe lost their seats. While this might have pleased Mr. Koizumi, it weakened the support for LDP in the rural areas, and the DPJ led by Ichiro Ozawa subsequently took advantage of that.

During the campaign for the House of Councilors election of July, 2007, the DPJ's manifesto proposed the Individual Income Compensation Policy for Farmers, claiming to provide ¥1 trillion subsidies to all farmers. This was essentially the expansion of the Trans-Product Management Stabilization Policy to all the farmers including the ones with tiny scale. The policy naturally attracted many rural votes, and the DPJ was successful in taking most of the rural seats that initially belonged to the LDP candidates.

4.5. Backlash after Koizumi

After the loss at the 2007 House of Councilors election, the LDP government also reversed course on its agricultural policy. In the fall of 2007, the Fukuda government announced that they would earmark ¥85 billion for the protection of farmers. The government fund was used to (1) purchase 3.4 million tons of rice to prop up rice prices, (2) subsidize production of rice for flour and animal feeding, and (3) expand the acreage reduction program.

In the priority for agricultural policy, promotion of large scale farming to increase productivity now clearly has taken a back seat to improvement of Japanese self sufficiency. Instead of focusing government support on large scale farmers, the governments after the Koizumi administration spread the subsidies to all the farmers. It did not matter if the government was led by the LDP or the DPJ.

The FTA policy also changed after Mr. Koizumi's departure. Some new FTAs were signed during the LDP governments, but negotiations of FTAs with large trading partners (such as Korea and Australia) stalled. Talks with larger trading partners, such as China, the U.S., and the EU, have not even started. Recently the government has decided to postpone until 2011 the decision to join the negotiation for Trans Pacific Partnership that would include the U.S.

5. Special Zones

5.1 Target and Plan

The Special Zones for Structural Reform Act of 2003 was aimed at two problems. First is the lack of local autonomy. Under Japan's unitary system in public finance, local governments are often subject to identical sets of regulations laid down by the central government. This creates inconvenience and inefficiency. For example, local governments are unable to respond quickly to economic downturns because they have little authority in making independent

decisions. Local governments also rely heavily on the tax funds allocated from the national government, as we discussed below in the discussion on local public finance reform. Special zones reform allows some local governments to deviate from the uniform regulations to pursue unique projects.

The second problem is Japan's overly regulated service sector. As Yashiro (2005) points out, the Japanese government imposes heavy regulation on various segments of service industries, such as healthcare, education, and nursing. Relaxing the regulations often requires extensive political negotiations. The special zones provide a way for gradual experimentation. The special zones allow regulations to be relaxed or abolished in some local areas. In principle the success of a local reform could be used to build a consensus about the wisdom of the change and line up political supporters to implement the change nationally. We start by describing the key characteristics of special zones implemented under the Koizumi government. Then, we classify the special zones into five categories and discuss each category. We select a few cases from each category and study those carefully. Finally, we evaluate the impact of the special zones policy and address some critical drawbacks.

5.2. Major Characteristics of the Special Zones

The special zones have three major characteristics. First is the decentralized decision-making process. Unlike the central government's top-down approach in its regional

policy, the basic framework of the special zones is a bottom-up process. The program places great emphasis on local government autonomy and private sector initiatives.

Second is the absence of fiscal support from the central government. Unlike free trade zones in many other countries, Japan's special zones are characterized only by their special regulatory status, and receive no financial support from the central government. As Yashiro (2005) noted, the Japanese special zones are not intended to be national projects providing economic stimulus to underdeveloped areas.

The third characteristic is the potential for the extension to other areas. If a special zone turns out to be successful, a similar measure can be expanded nationwide. The evaluation process then becomes critical in determining whether the program is extended. Under the current framework, each special zone is to be assessed for the quantitative effects of its deregulation within a year of being established (Cabinet Secretariat 2002).

5.3. Taxonomy of the Special Zones

From its inception in 2003 to the latest application period in July 2010, the special zones program has gone through 23 application cycles, with a total of 1,114 special zones having been approved (Cabinet Secretariat 2010). The special zones can be classified into five groups: 1) welfare/medical care and community life; 2) education; 3) agriculture; 4) new industry creation; and 5) international exchange and logistics. The distribution of the different types of special

zones is shown in Table A5-1.

5.3.1 Welfare/Medical Care and Community Life

Welfare/medical care and community life is the largest category of the special zones, accounting for nearly 35% of the total (Cabinet Secretariat 2010). These special zones allow private management of nursing homes, private finance initiative projects in social welfare, and doctors from abroad. Moreover, they promote paid transportation services for the elderly by non-profit organizations (NPOs) and joint use of kindergarten and nursery schools, which are regulated by different ministries (Suzuki 2005).

5.3.2 Education

The educational zones represent roughly 26% of all special zones. The educational zones introduce more diverse and flexible curricula – such as more emphasis on English education – than is allowed by the central government. These zones also permit school management by entities other than existing school corporations (Suzuki 2005).

5.3.3 Agriculture

Agricultural zones are the third most frequent category with 25% share. Agricultural zones facilitate farming by for-profit corporations, offer preferential measures for agricultural start-ups, and allow deregulation on minimum farming areas (Suzuki 2005).

5.3.4 New Industries

The new industry promotion area accounts for 11% of the special zones. They promote more flexible utilization of national research institutes and extensive academic-industrial partnerships (Suzuki 2005). Some special zones waived the prohibition of participating in subsidiary businesses for faculty of national university (Suzuki 2005).

5.3.5 International Exchanges and Logistics

The international exchange and logistics area occupies 3% of the total number of special zones. Special zones in this area provide 24-hours customs clearance, leasing of publicly owned harbor facilities to private entities, and deregulation of visa-application procedures (Suzuki 2005).

There are two major trends regarding special zones. First, the number of approved special zones varies substantially across prefectures (Iwaki 2006). With 133 cases, Hokkaido leads the nation in the number of special zones, followed by Nagano, Tokyo and Ibaraki (Cabinet Secretariat 2010). At the bottom of the list are Saga, Shiga, and Tokushima, where each has only five special zones. The conventional explanation for these differences is that the prefectures with higher dependence on central government funding tend to have fewer special zones (Yashiro 2005).

Second, the timing of the approval is unevenly distributed across the categories (Figure A5-2). For instance, the inaugural approval committee in 2003 allowed a significant number of

special zones in the areas of international exchange and new-industry promotion (Cabinet Secretariat 2003). The preference of the committee subsequently shifted to favor agriculture and welfare zones in numbers.

5.4. Case Studies

In *Regional Vitality is Japan's Vitality: Special Zones' Progress Report*, the Cabinet Office compiled a list of case studies on the special zones. The nine special zones we examine here are pioneers that provided the framework for the latecomers in the recent cycles.

Basic facts about these cases are given in Table A5-2. Besides summarizing the goals of each zone, the changes that were enacted to achieve those goals and the progress that was made towards the goal, the table also shows the decision about whether the program was extended nationwide. Keeping in mind that these were relatively well publicized cases, we caution against interpreting the relatively high success rate of these zones in being extended.

We draw three conclusions from the table. First, the range of deregulation experiments varies greatly. Some of the changes involve marginal adjustments to existing regulations (e.g. cutting the number of emergency medical technicians working with an ambulance from three to two), while other involved fundamental reform (allowing corporations to enter the agricultural business through leasing land). Second, as discussed below, the link between the objectives of the zones and economic growth also varies. Third, the time between when a zone is approved

and when it is applied nationally also varies greatly, ranging from roughly one year to more than five years. The heterogeneity in all three dimensions makes it challenging to summarize the effects of the special zones, and also explains why selective reviews that focus on only some cases might lead to different conclusions.

5.5. Evaluation

The Cabinet Office (2008) compiled a report on the economic effect of the special zones up to that point. The report summarizes the special zones' key achievements as: 1) ¥590 billion increase in business investment; 2) 18,000 jobs created; and 3) 500,000 more tourists. While the report briefly summarizes the special zones' aggregate economic effect, it did not provide much detail on individual special zones.

As shown in Table A5-2, a proper economic evaluation of special zones is difficult because the goals and evaluation standard differ greatly from one zone to another. Some types of special zones, such as those in new-industry promotion, emphasize the number of corporations solicited or the number of jobs created. On the other hand, agricultural-tourism zones focus on figures such as the growth of agricultural production or the number of visitors.

Yugami (2007) reports a survey of sponsoring municipalities on their subjective assessments of special zones for new industry promotion or agriculture. Figure A5-2 shows how the sponsoring municipalities view the effectiveness of their special zones in six areas: entry of

firms, start-ups/venture capitals, job creation, increase in the number of visitors, increased media attention, and the overall effects on the local economy. About a quarter of the respondents answered that their special zones are effective in attracting the start-ups, creating jobs and stimulating the local economy overall. But even more found the zones to be ineffective or barely effective on these dimensions. Importantly, a high proportion of respondents answered “don’t know” for many questions. This may reflect the problem of different objectives and evaluation standards across special zones. Some types of special zones may have a different set of criteria for the effectiveness.

We read Yugami (2007)’s survey results as delivering an ambiguous judgment on the success of the special zones. Assuming that the respondents were trying to do a cost benefit analysis in answering the questions, it seems like the only clear success was with respect to increasing media attention. Moreover, the questions in the survey do not account for the fact that much of these effects could be zero-sum in that they move activity from one location to another. So an important factor in judging the overall impact will depend on how much value one places on the information that is generated by the various experiments and the direct gains to the regions.

5.6. Do special zones contribute to the economic growth?

As the forgoing discussion suggests the link between special zones and national

economic growth is tenuous. At this point, there seem to be three main factors that determine their impact. First, when local governments attempt to facilitate regional growth by diverting the demand from the other special zones, such efforts do not lead to nationwide economic growth. An example is proliferation of “doburoku” zones. The special zone in Iide, Yamagata, is one of many that were inspired by Iwate Prefecture’s original doburoku zone. Despite the town’s harsh winter, the number of tourists visiting Iide has increased by 30%. However, deregulation on the brewing of doburoku led many villages across the country to follow suit. This led to the proliferation of doburoku zones – ninety-one by 2009 – with limited aggregate gains.

A second issue is the rise of tourism-oriented zones. One of the special zones’ original goals is to serve as the stepping stone for national deregulatory reform. However, many municipalities have exploited the policy and turned it into a means to promote local tourism. By definition these kinds of zones will not contribute to sustained growth.

The third problem is the inherent tension between the goals of nationwide deregulation and regional specialization. As Homma (2005) noted, the content of the special zones have become increasingly repetitive. This has undermined the policy’s objective of regional specialization. Furthermore, the policy of nationwide application is reducing the incentive for the local authorities and private sectors to make original proposals. Once a special zone becomes successful, other municipalities can copy the model and follow suit. This dynamics discourages

innovation. Hence, for the policy to raise growth on a continued basis would require the creation of zones that facilitate growth without diverting demand and are not susceptible to imitation. It is unclear how many regional reforms of this sort are possible.

6. Local Public Finance Reform

6.1. Target and Plan

The primary goal of the local public finance reform was to reduce the budget deficit of the central government by cutting the massive transfers and subsidies to local governments. Local governments traditionally relied heavily on the central government to finance their expenditures.

The central government supports local governments primarily through two types of transfers. The first, the so-called local allocation tax grants, distributes a pre-specified proportion of major national taxes (such as the income tax, consumption tax, and corporate tax) to local governments. The allocation is determined through formulas to “adjust imbalances” in tax revenue among different local governments, which means poor governments receive more transfers. Some local governments with ample tax revenues, such as Tokyo, do not get to receive any local allocation tax grants. The use of funds is not specified by the central government and hence the local governments have total discretion over how to use the transfers.

The other type of transfers is state subsidies, also called “national treasury disbursements.” Central government provides subsidies to the local governments for specific projects. For example, many public works that were included in the fiscal stimulus plan in the 1990s were carried out by local governments supported by the state subsidies. The restriction on the use of funds separates state subsidies from the local allocation tax transfers.

Since the total amount of local allocation tax distribution is determined by the “needs” of local governments while the sources of grants are fixed proportions of national taxes, there is no guarantee that the central government has enough funds to satisfy all the needs of local governments every year. Indeed, the amount of distribution often exceeded the national tax revenues earmarked for the grants. The central government financed this shortfall by issuing bonds, but starting in 2001, worrying about increasing debt, local governments were allowed to issue Emergency Fiscal Measure Bonds to cover the deficits. The Emergency Fiscal Measure Bonds are expected to be paid off using local allocation tax grants in the future. Thus, local governments viewed the proceeds from the issuance of Emergency Fiscal Measure Bonds as good as local allocation tax grants. Similar to local allocation tax grants, the use of funds is not specified by the central government.

Table A6-1 shows the composition of revenues for local governments (both prefectures

and city/town/village municipalities) for each fiscal year from 1970 to 2010.⁶ The table shows that the local taxes (local governments' own revenues) have risen as share of total funds. In the 1970s the funds coming from the central government were larger than the take from local taxes. By the mid 1980s the two shares were about equal, and by the early 1990s the local taxes were larger than the contributions from the central government. But, we should also note that the aggregate numbers mask serious heterogeneity among different local governments. Some governments such as Tokyo and Aichi (where headquarter of Toyota is located) enjoy a large amount of corporate tax revenues and do not need much help from the central government. Many other local governments, however, have more limited sources of revenues and have to rely on the central government.

By the time Prime Minister Koizumi took office in 2001, the mounting central government debt was already a central issue for the Japanese economy. Figure A6-1 shows the gross debt to GDP ratios for G7 countries and Greece, which recently experienced a debt crisis. Japan's gross government debt stood over 140% of its GDP already in 2001, much higher than the peak ratio for Greece. The net debt to GDP ratio, shown in Figure A6-2, looks better and was below Italy and Greece in 2001, although it continued to increase during the 2000s and now exceeds the level of Italy.

⁶ For the fiscal years 2009 and 2010, the initial budget numbers are shown.

By the late 1990s the rating agencies started to downgrade their estimates of the credit quality of the JGB (Japanese Government Bond). Figure A6-3 shows how S&P (Standard and Poor's) and Moody's changed their ratings of the JGB. Moody's downgraded JGB from Aaa to Aa1 in November 1998 and to Aa2 by September 2000. The rating was cut eventually to A2 in May 2002 and stayed there until it started being upgraded finally in late 2007. S&P maintained AAA rating for JGB till February of 2002, when it was downgraded to AA+. The Moody's rating dropped all the way to AA- by April 2002, where it stayed for five years until it started to recover finally in 2007.

The accumulation of government debt resulted primarily from the decline of tax revenues (that was due to the growth slowdown) and the increase of expenditures at the national level. A series of fiscal stimulus packages and bank rescues contributed to the increasing expenditures. The transfers and subsidies to the local governments, however, were also important contributors to the fiscal deficits. The public works in the stimulus packages often included subsidies to the local governments. Moreover, the central government issued bonds to cover the shortfall of revenues that are used for local allocation tax grants (before 2001).

6.2. Trinity Reform

One approach that the Koizumi government took to reduce the budget deficit was to reform the system of local public finance. The government hoped to increase financial

autonomy of the local governments so that they would not have to rely on the central government very much. The policy package to achieve this was called the “Trinity reform” because it consisted of three parts.

First, the state subsidies were to be reduced over time. The central government would also stop specifying the use of some subsidies to give more discretion to the local governments. Second, local allocation tax transfers were also to be reduced over time. Third, the central government was to transfer the tax bases over time so that the local governments can achieve more financial independence.

The reform targeted reduction of state subsidies and local allocation tax transfers by ¥4 trillion between FY2003 and FY2006. The government aimed at achieving a primary balance surplus of the central and local governments by FY2011.

6.3. Consequences of the reform

The reform succeeded in reducing the local allocation tax grants and state subsidies. The last row in Table A6-1 shows how the amount of the transfers and subsidies changed by the reform. From fiscal 2003 to fiscal 2006, the state subsidies were reduced by ¥2.6 trillion and the local allocation tax grants by ¥2.0 trillion, exceeding the target for the total of ¥4.0 trillion.

The table shows the local tax revenues increased by ¥4.1 trillion from fiscal 2003 to fiscal 2006, nearly offsetting the reduction of the local allocation tax grants and the state subsidies.

The revenue from local bonds, however, fell by ¥4.2 trillion, of which ¥2.7 trillion was the reduction in Emergency Fiscal Measure Bonds.⁷

Thus, from the local governments' point of view, the trinity reform led to revenue reduction of ¥7.3 trillion (including the reduction of Emergency Fiscal Measure Bonds which are as good as local allocation tax grants), which is much more than the increase in the local tax revenues. We should also note that the increase in local tax revenues was geographically concentrated, with most of the gains accruing to the relatively well off governments such as Tokyo and Aichi. It is understandable many local governments felt that the trinity reform hurt them financially.

How about the impact for the central government financing? About ¥3 trillion of tax revenues has been shifted from the central government to local governments by reducing the national income tax and increasing the local income tax. Thus, in net, the trinity reform reduced the central government budget deficit by around ¥1.6 trillion, which is non-trivial but not very impressive. Although the trinity reform cut the future liability of the central government by ¥2.7 trillion by reducing the issuance of Emergency Fiscal Measure Bonds, it did not help the budget very much on a flow basis.

After the Koizumi government, the reform seems to have stalled. As Table A6-1 shows,

⁷ Ministry of Finance, "Chihō Zaisei Kankei Shiryo (Documents on Local Public Finance)," May 2009. (<http://www.mof.go.jp/singikai/zaiseseido/siryou/zaiseib210511/06.pdf>)

the local subsidy and local tax allocation started to increase again at the end of the 2000s.

6.4. Conclusion

The Trinity reform successfully reduced the transfers and subsidies from the central government to local governments by ¥4.6 trillion from FY2003 to FY2006. At the same time, however, about ¥3 trillion of income tax revenue was transferred from the central government to local governments. Thus, the reform did not help very much in reducing the budget deficit of the central government. From the viewpoint of many local governments, however, the reduction of Emergency Fiscal Measure Bonds added to the reduction of subsidies and grants. With exception of a few relatively well off governments such as Tokyo and Aichi, the trinity reform left many local governments poorer and financially squeezed.

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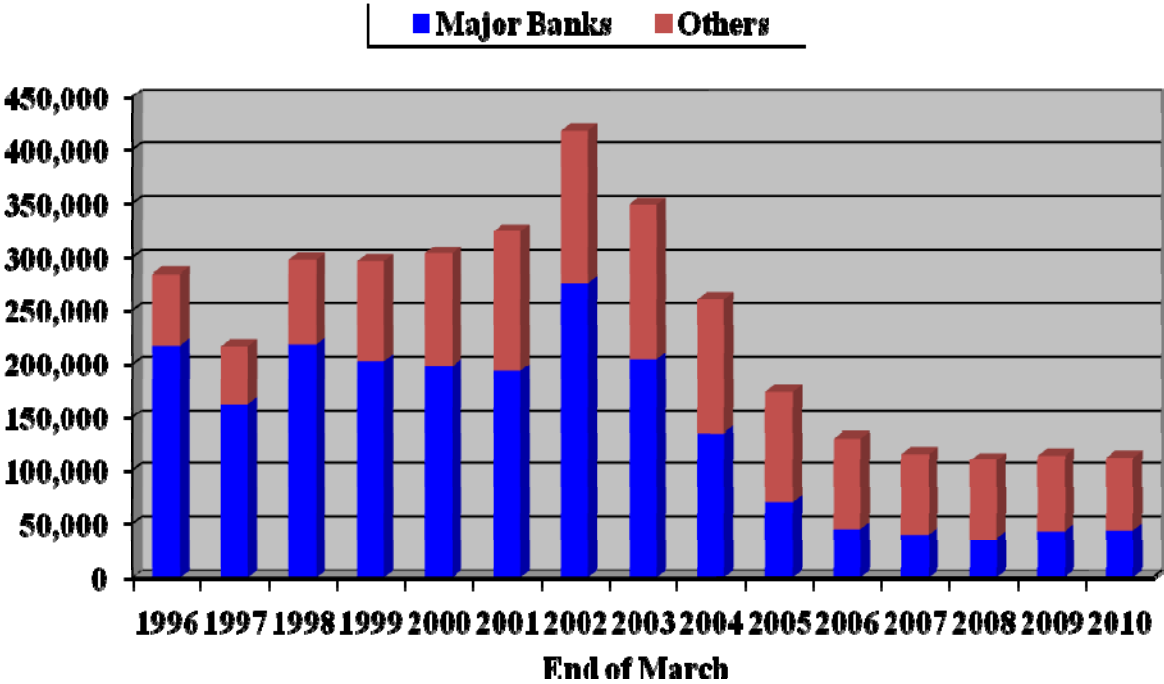
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Figures for the Appendix

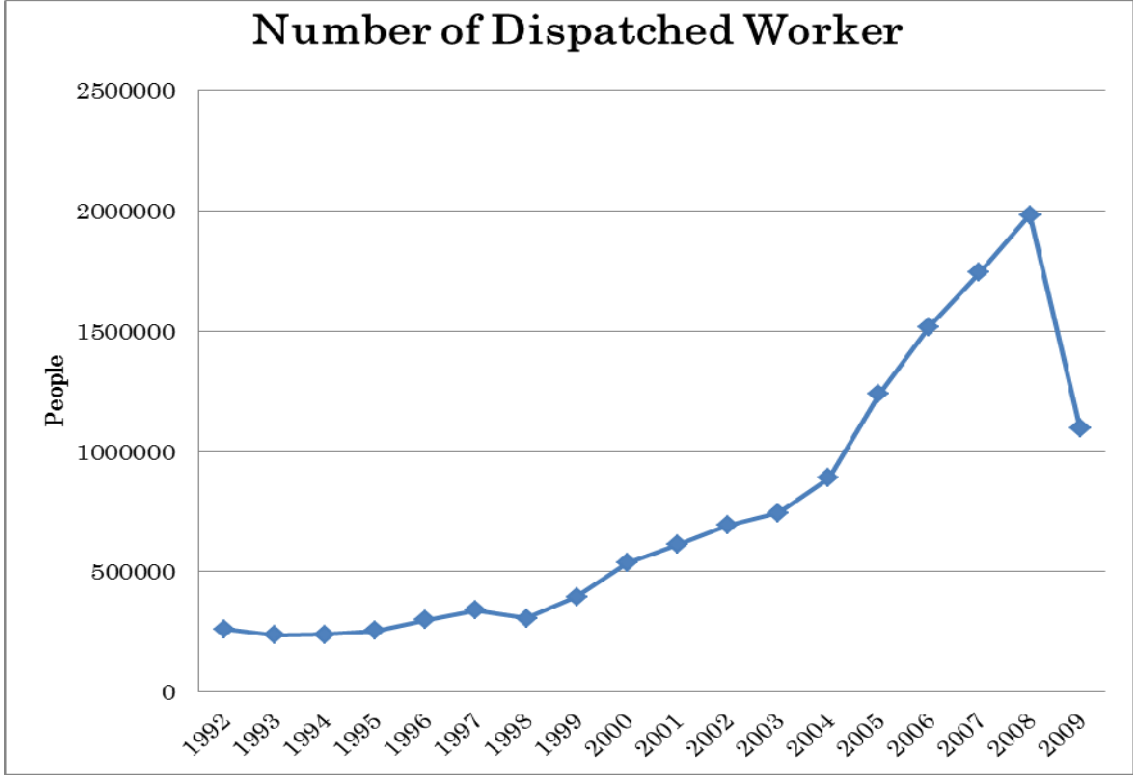
Figure A1-1. Non-Performing Loans of Japanese banks: 1996-2010 (100 million



yen)

Source: Japanese Financial Services Agency (<http://www.fsa.go.jp>)

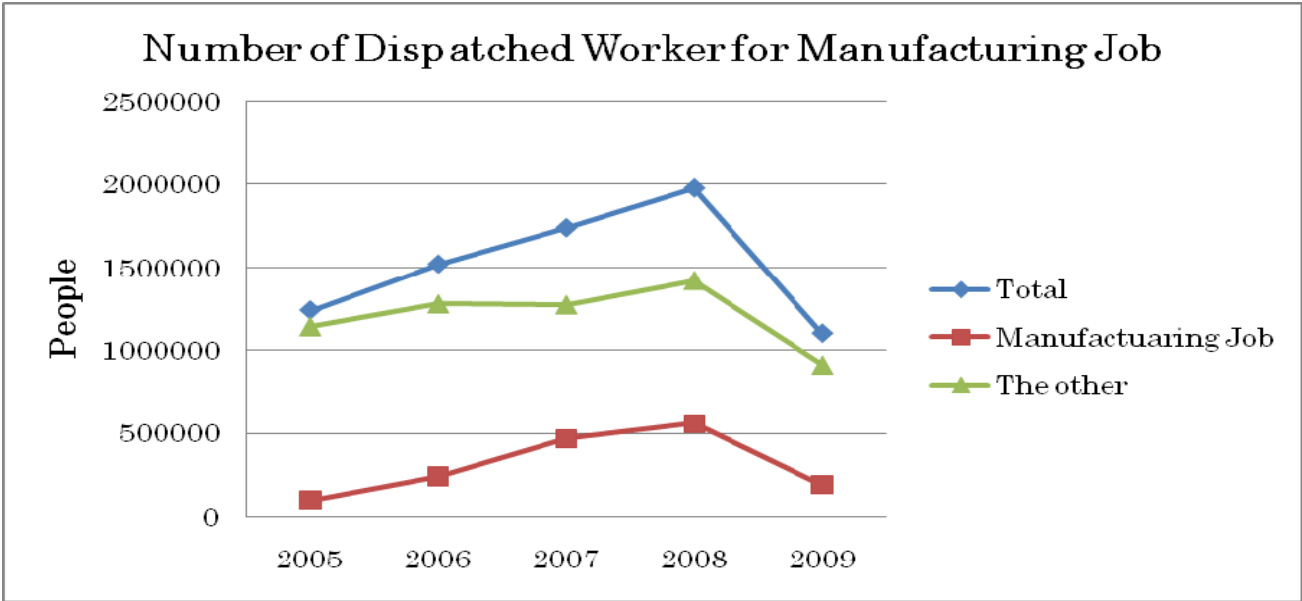
Figure A3-1. Number of Dispatched Workers (1992-2009)



Note: The number of dispatched worker is calculated by adding the number of regular dispatched workers and the number of the other dispatched worker as stated in the number of regular workers.

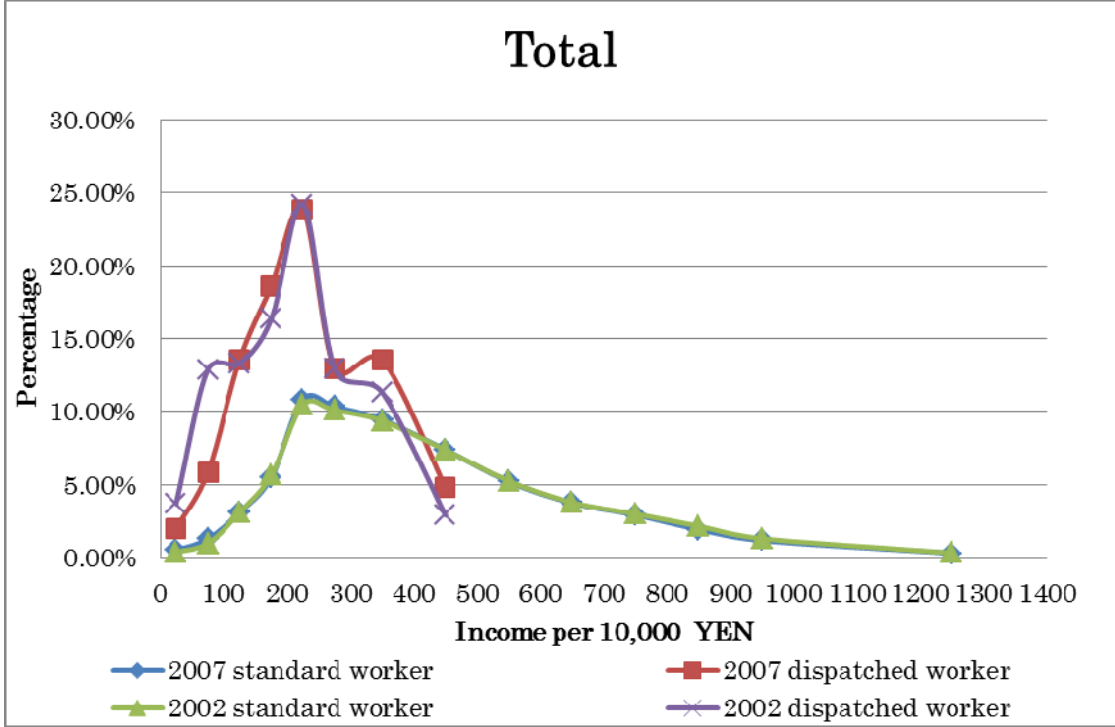
Source: Report of Worker Dispatching Undertakings (Roudousya Haken Jigyou Houkokusyo) 1992-2009, Ministry of Health, Labour and Welfare. <http://www.mhlw.go.jp/stf/houdou/index.html>

Figure A3-2. Number of Dispatched Workers for Manufacturing Job



Source: Report of Worker Dispatching Undertakings (Roudousya Haken Jigyou Houkokusyo) 1992-2009, Ministry of Health, Labour and Welfare. <http://www.mhlw.go.jp/stf/houdou/index.html>

Figure A3-3. Income Distribution by Industry, Worker Type for 2002 and 2007



Source: Basic Survey of Employment Structure (Syugyou Kouzou Kihon Tyousa) in 2002 and 2007, Bureau of Statistics, Ministry of Internal Affairs and Communications. <http://www.stat.go.jp/data/shugyou/2007/index.htm>
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Figure A3-3. Income Distribution by Industry, Worker Type for 2002 and 2007, continued

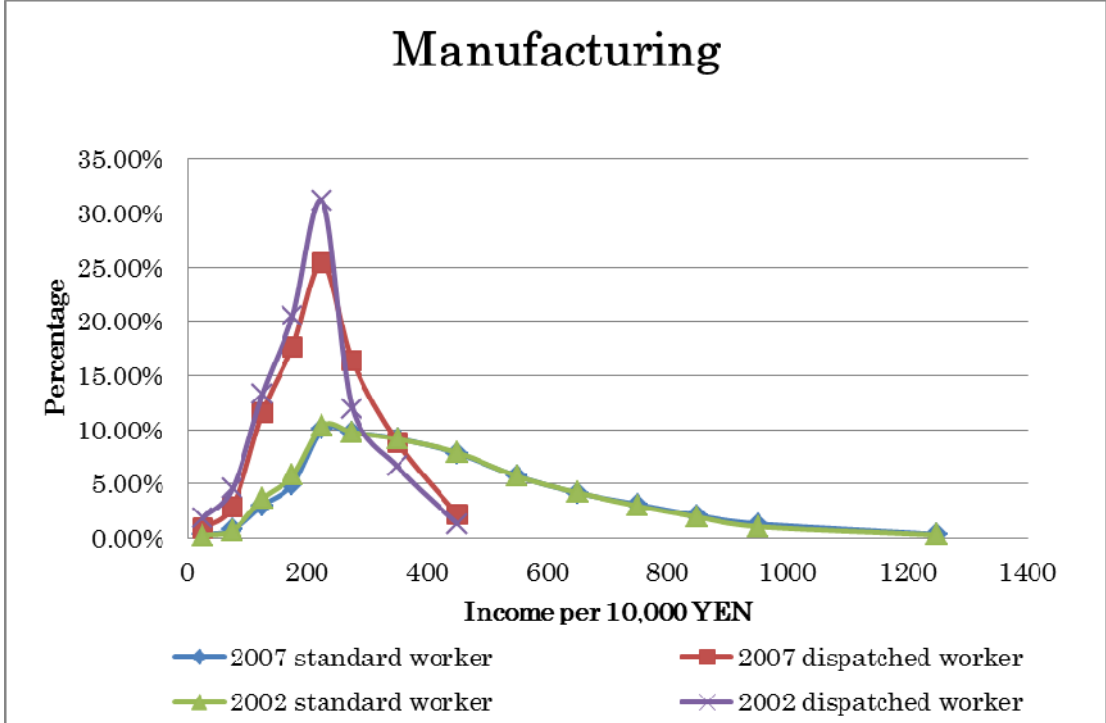


Figure A3-3. Income Distribution by Industry, Worker Type for 2002 and 2007, continued

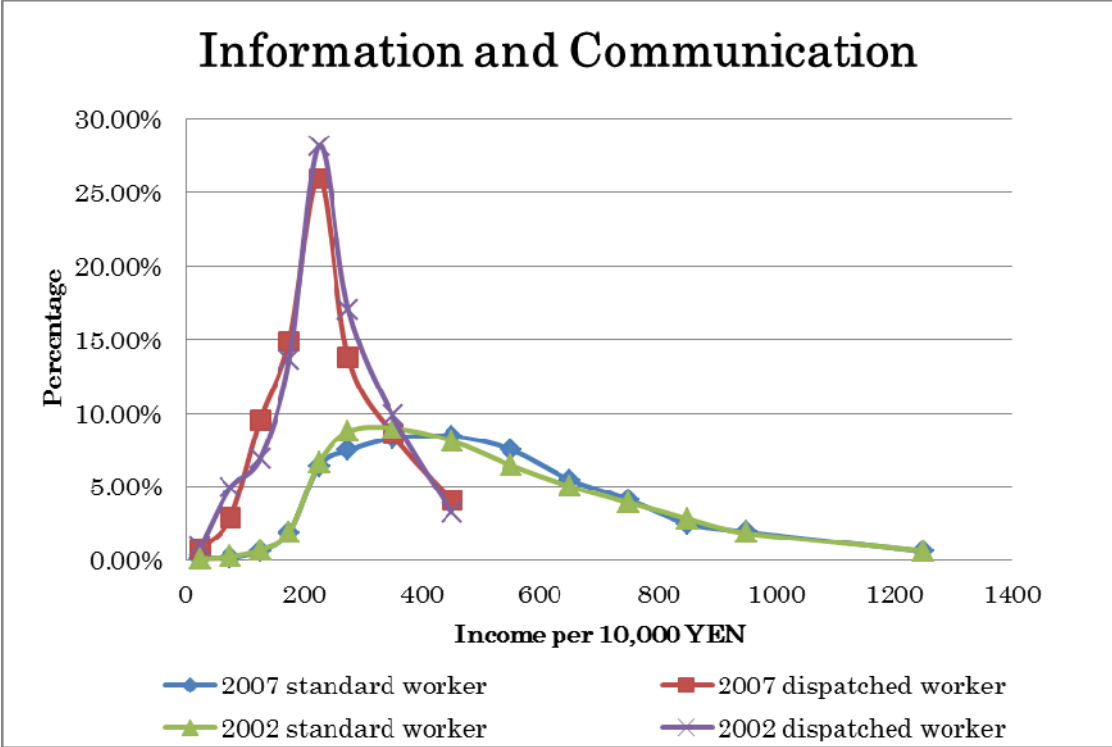


Figure A3-3. Income Distribution by Industry, Worker Type for 2002 and 2007, continued

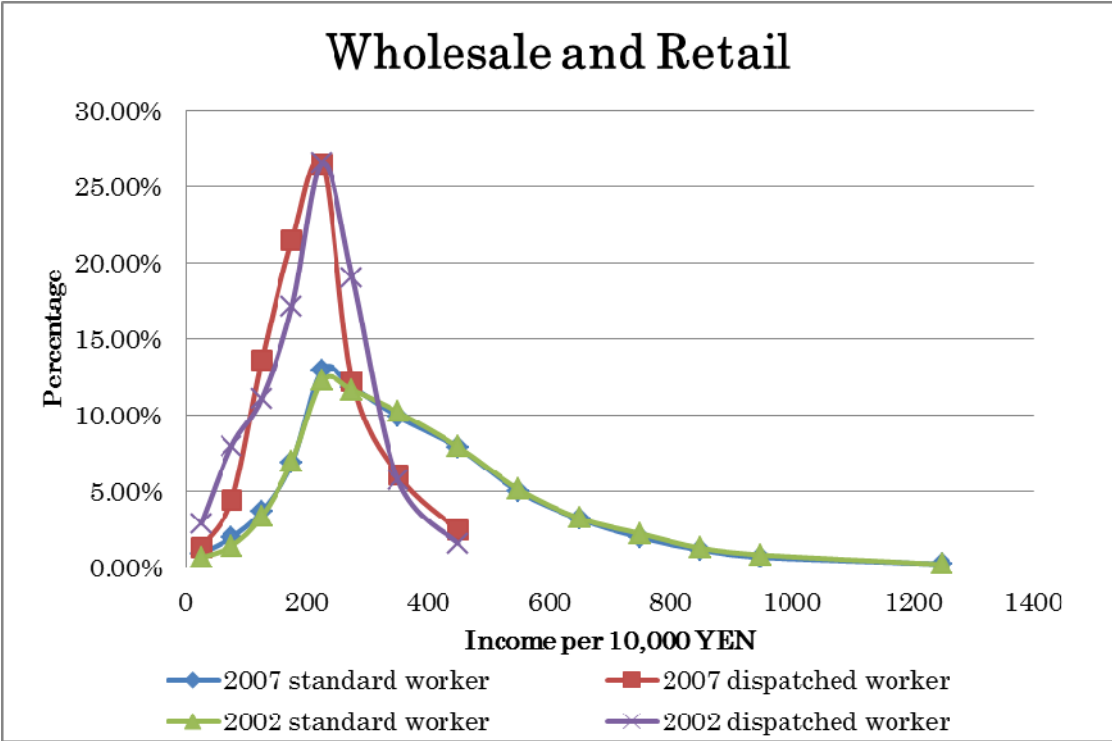


Figure A3-3. Income Distribution by Industry, Worker Type for 2002 and 2007, continued

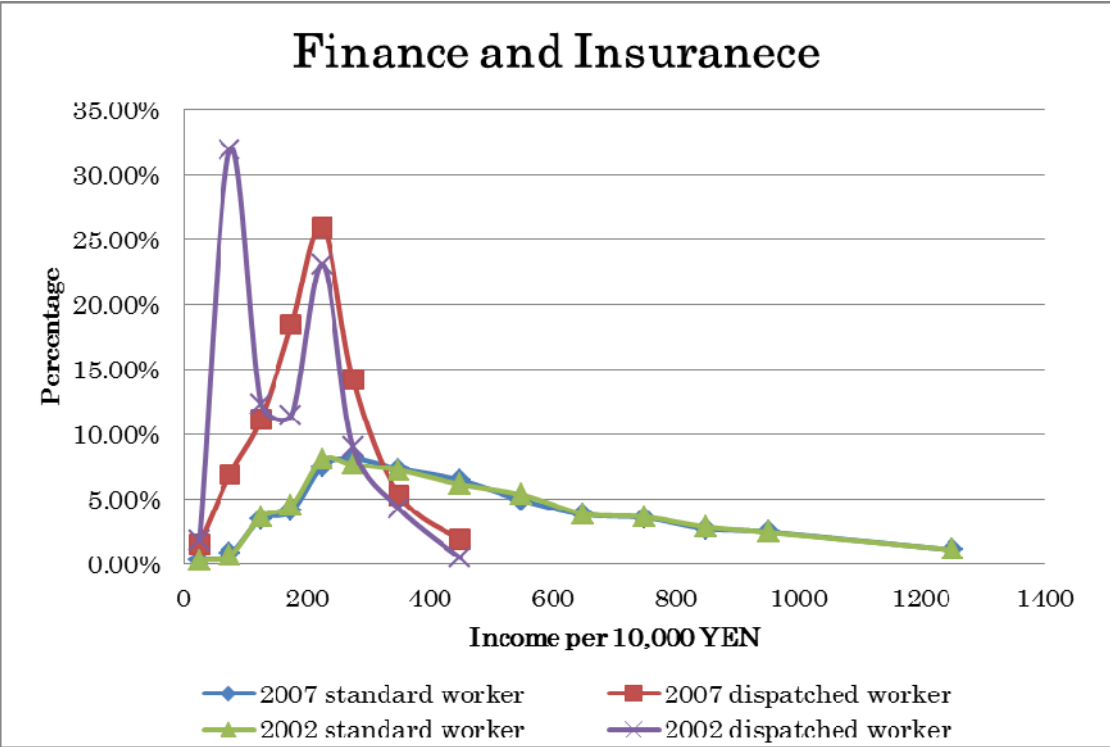
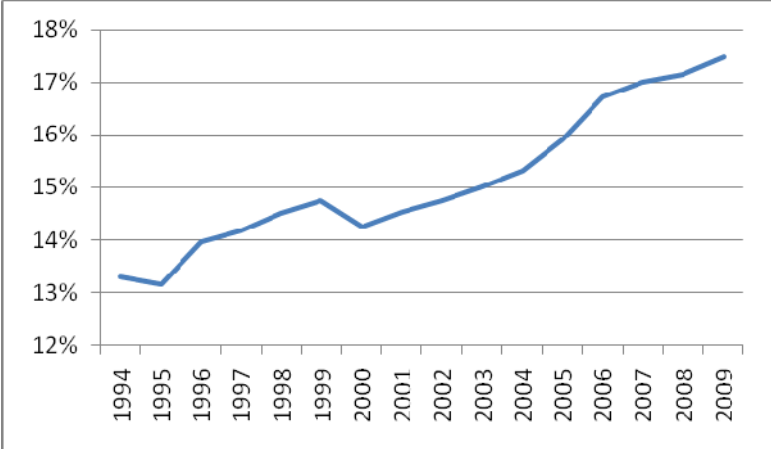
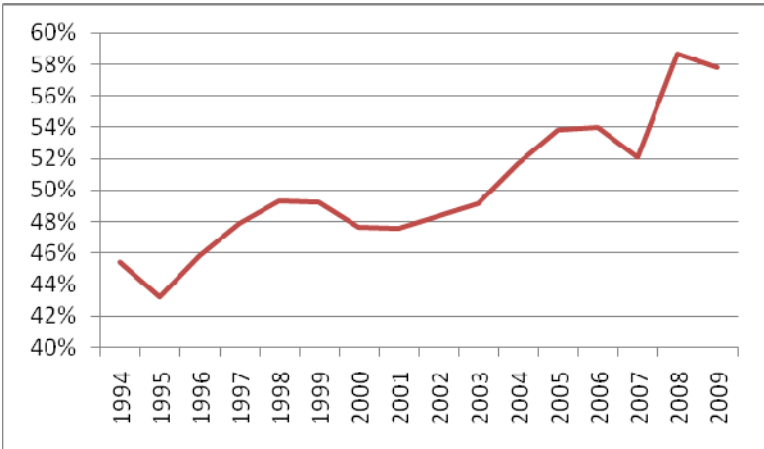


Figure A4-1. Proportion of Large Scale Farms

a. All prefectures excluding Hokkaido (farms greater than 2 ha)



b. Hokkaido (farms greater than 10 ha)



Source: Japan Statistical Yearbook 2010, Table 7-1.

Figure A5-1: Number of Types of Special Zones in Each Cycle 2003-2010 (%)

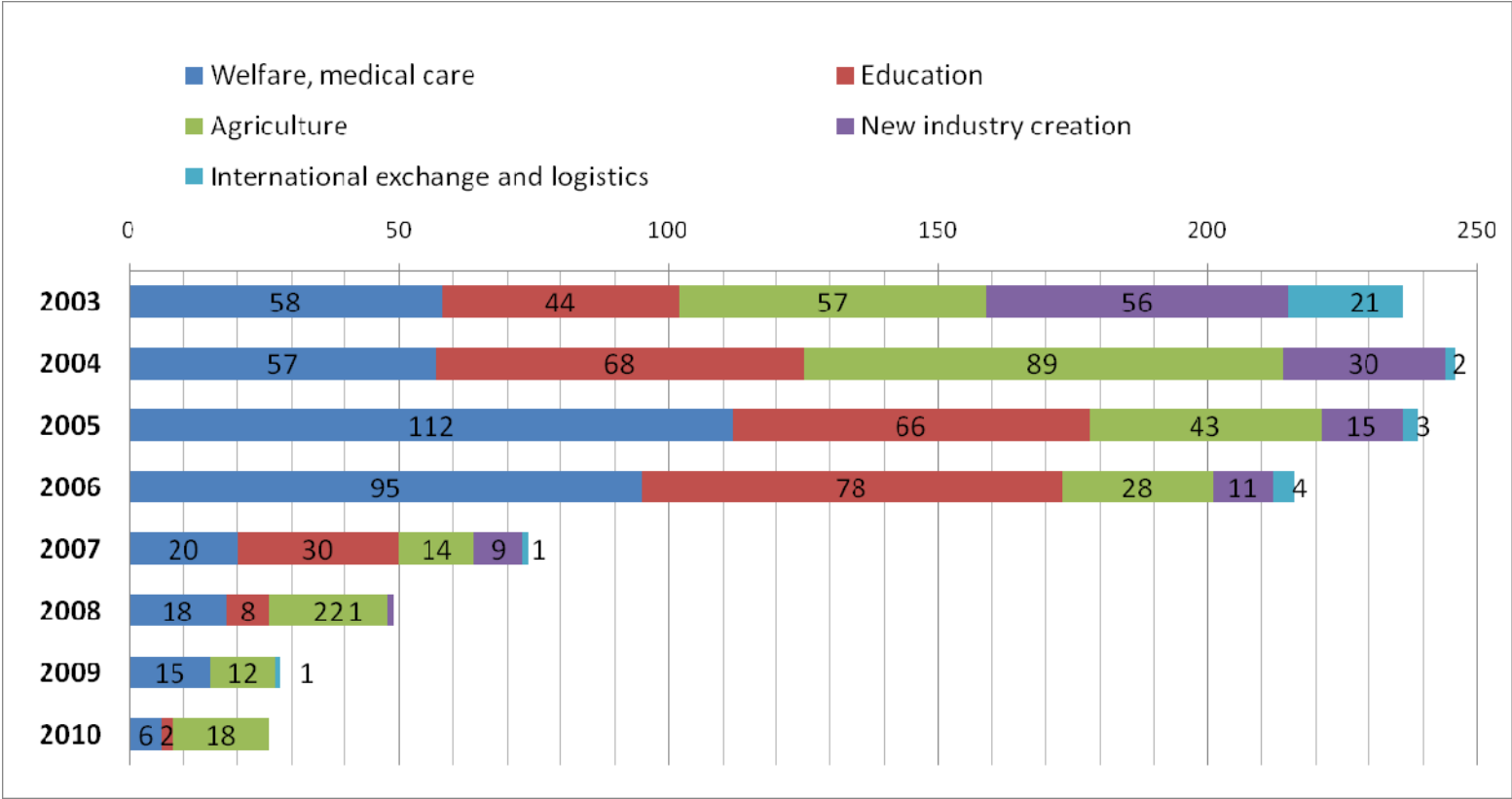
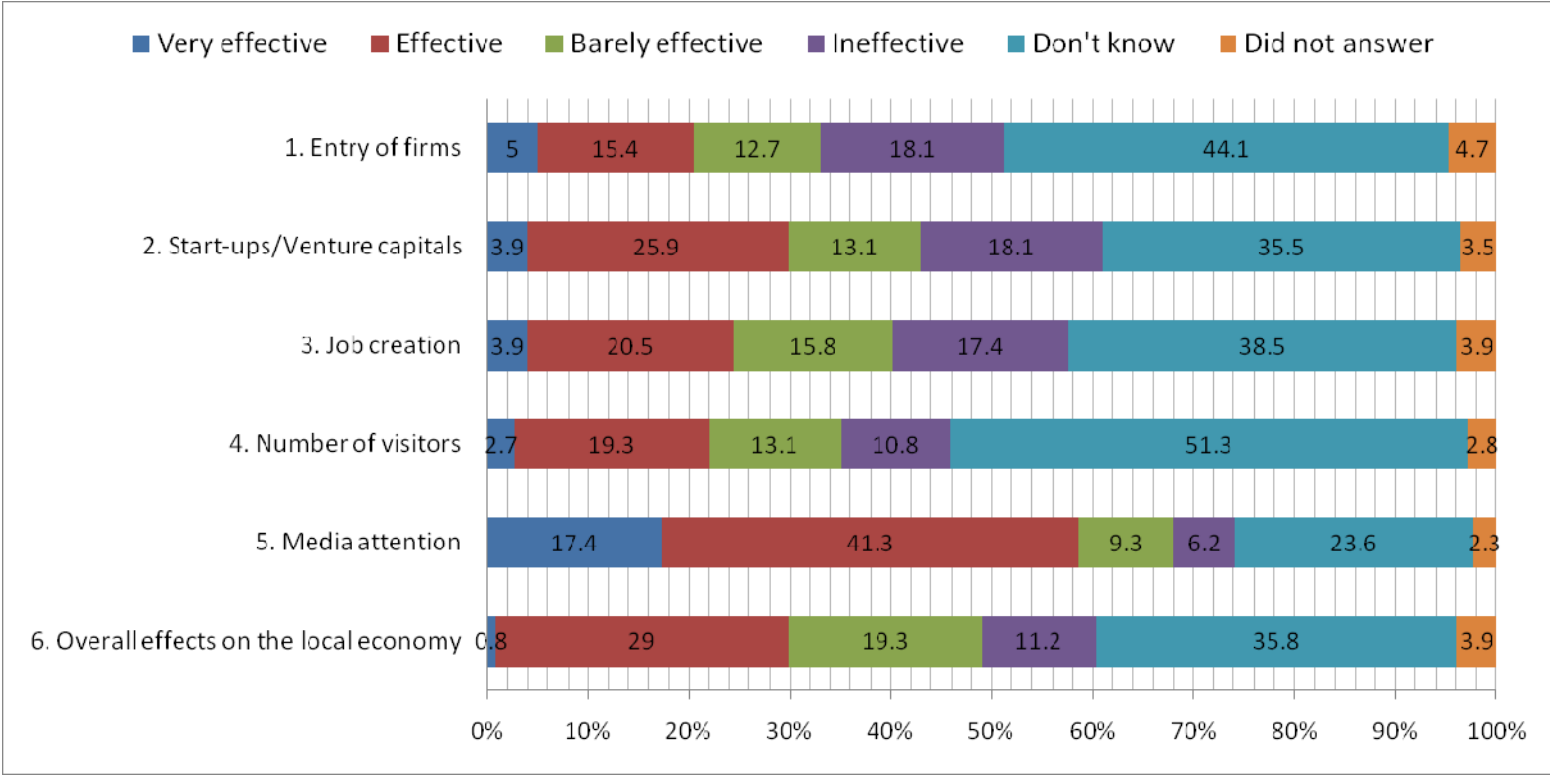


Figure A5-2. Reported Effectiveness of the Special Zones



Note: The number of responses is 259.

Figure A6-1. Gross Government Debt of selected OECD Countries (% of GDP)

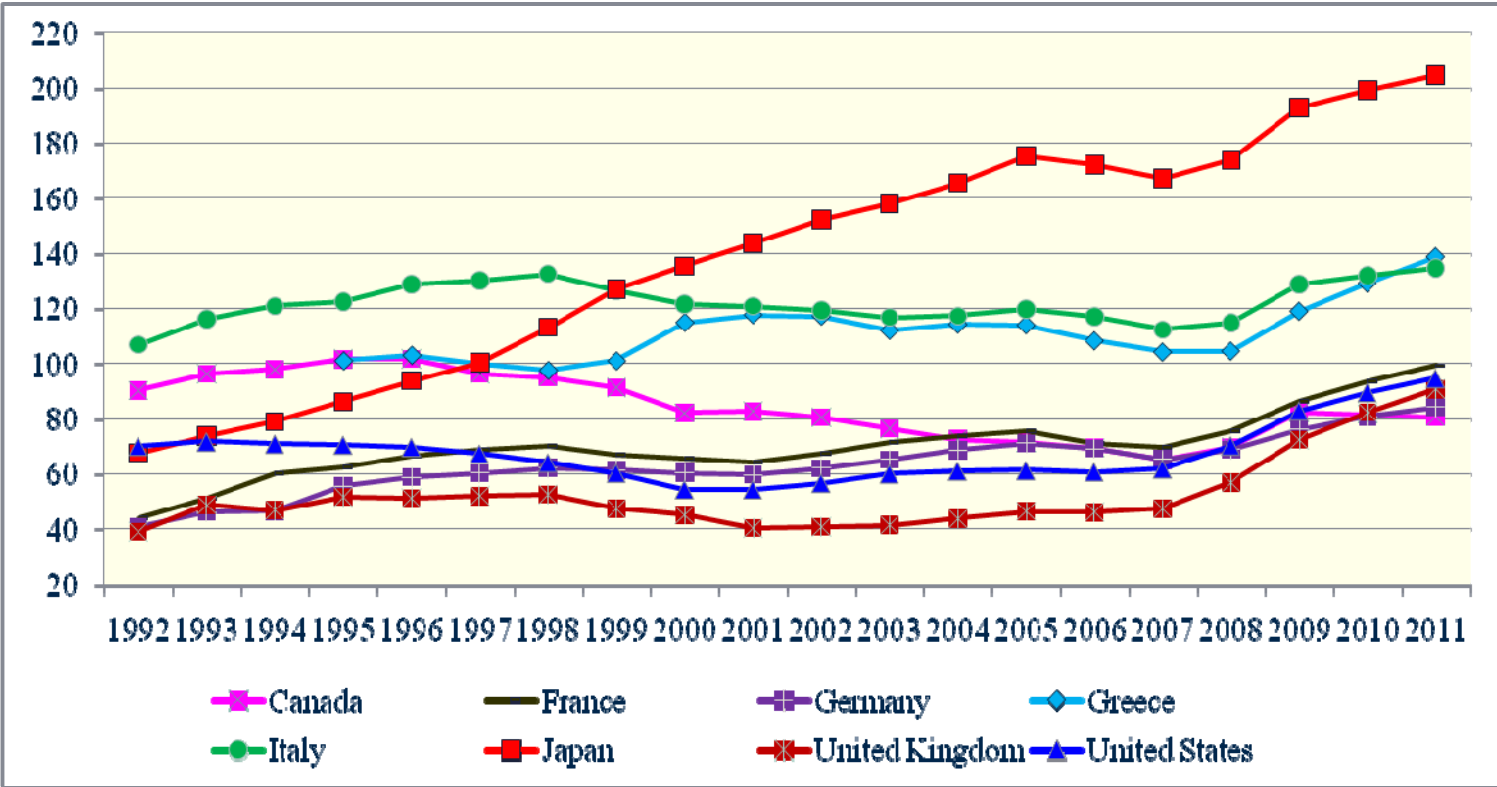


Figure A6-2. Net Government Debt of selected OECD Countries (% of GDP)

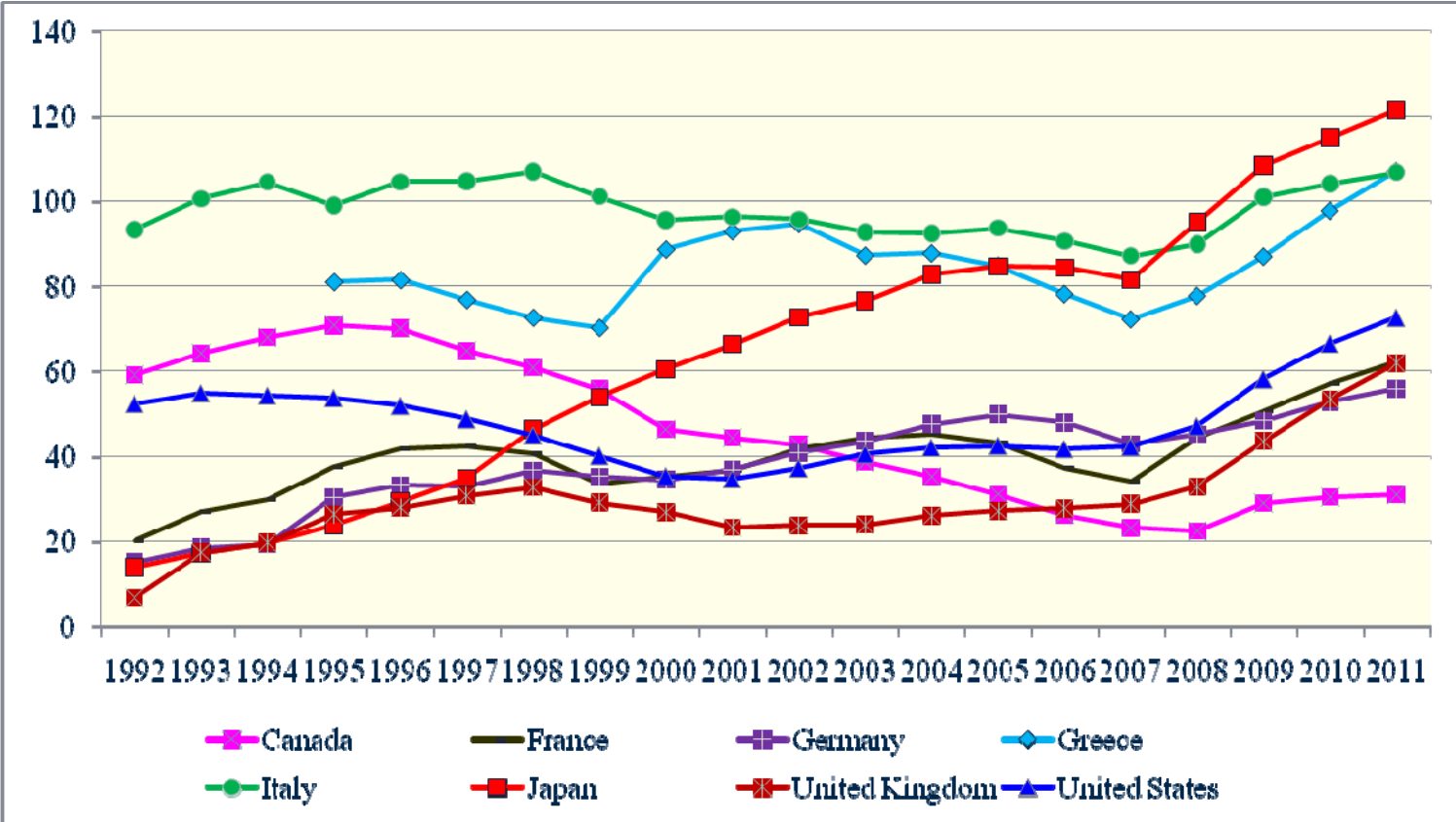
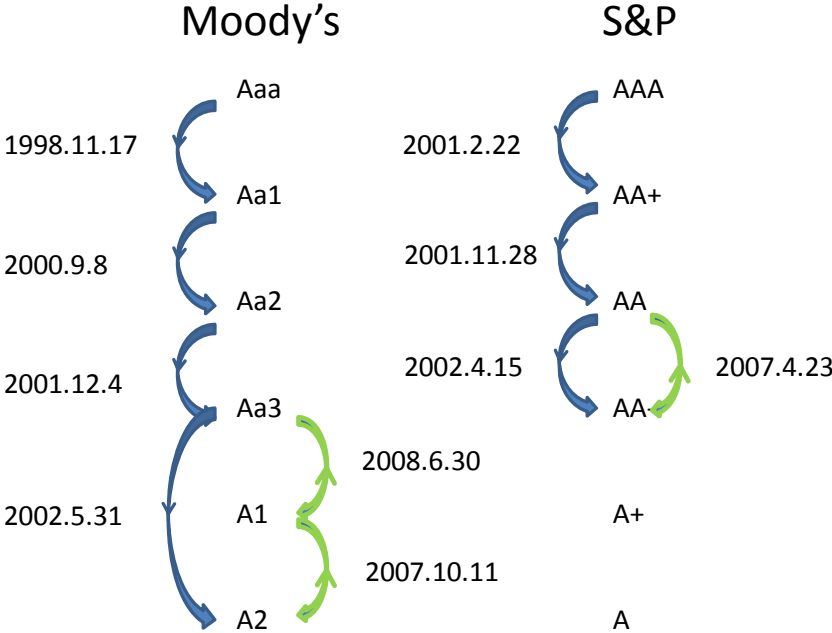


Figure A6-3. Downgrading of JGB



Tables for the Appendix

Table A3-1. Dispatched Workers and Contract-Based Workers

	Number of Dispatched Workers	Number of Contract-Based Workers (manufacturing industry only)
2004		865600
2005	69647	
2008	558089	538128

Note: The survey of contract-based worker is not designed to survey the number of contract-based worker precisely and it would contain a large error.

Source: Number of dispatched worker: Report of Worker Dispatching Undertakings (Roudousya Haken Jigyō Houkokusho) 1992-2009, Ministry of Health, Labour and Welfare. <http://www.mhlw.go.jp/stf/houdou/index.html>

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Table A3-2. Hiring Dispatched Workers at the End of Contract Terms

	Number of hired workers at the end of contracted term	The percentage of it to total dispatched workers
2004	10655	1.20%
2005	19780	1.60%
2006	27362	1.80%
2007	32497	1.87%
2008	37901	1.91%

Source: Report of Worker Dispatching Undertakings (Roudousya Haken Jigyuu Houkokusyo) 1992-2009, Ministry of Health, Labour and Welfare. <http://www.mhlw.go.jp/stf/houdou/index.html>

Table A3-3. Dispatched Workers after the Global Financial Crisis

	2008	2009
Employee (exclude executive)	5539	5478
Standard Worker	3399	3380
Part-time Worker	821	814
Arbeit	331	339
Contract Employee	320	321
Dispatched Worker	140	108
Other	148	139

Note: units are 10,000 people

Source: Labor Force Survey (Roudouryoku Tyousa), Bureau of Statistics, Ministry of Internal Affairs and Communications.

<http://www.mhlw.go.jp/stf/houdou/index.html>

Table A4-1. Japanese Agricultural Policies: 2001-2010

Government	Prime Minister	Primary goal	Target of support	Date	Policy (Political event)
LDP	Koizumi (Apr.2001-Sep.2006)	Respond to globalization	Large scale farmers	Apr. 2004	Major reform of rice production adjustment system
				Mar. 2005	Basic Plan for food, agriculture, and farm village
				Apr. 2005	Basic Strategy of agriculture and forestry marine products export promotion
				Jun. 2006	New subsidies to large scale farmers announced
	Abe (Sep.2006-Sep2007)			Apr. 2007	New subsidies to large scale farmers introduced
	Fukuda (Sep.2007-Sep.2008)	Increase the food self sufficiency ratio	All farmers	Fall 2007	Purchase of rice to support rice price Expanded subsidies for furlough
Aso (Sep.2008-Sep.2009)	Apr. 2009			Subsidies to production of rice for rice flour or feeding	
DPJ	Hatoyama (Sep.2009-Jun.2010)			Apr. 2010	Direct payment income support system

Note: LDP stands for the Liberal Democratic Party of Japan. DPJ stands for the Democratic Party of Japan.

Source: Authors' compilation based on the information from Godo (2010).

Table A4-2. Farm Sizes in Various Countries

Survey Year	Country	Farm Size (ha)
1997	China	0.67
1995	Japan	1.2
1995-97	India	1.41
1990	Switzerland	11.65
1995	Israel	12.35
1999-2000	Belgium	23.12
1999-2000	Germany	40.47
1999-2000	France	45.04
1999-2000	U.K.	70.86
2002	U.S.	178.35
2002	New Zealand	222.64
2001	Canada	273.4

Source: Eastwood, Lipton and Newell (2010)

Table A4-3. Average Farm Size for Japan: 2006-2009

Year	Average size (ha)
2006	1.79
2007	1.83
2008	1.87
2009	1.91

Source: *84th Statistical Yearbook of the Ministry of Agriculture, Forestry, and Fisheries Japan Statistics Department*. Table II-1-(6).

Table A5-1. Numbers of Special Zones established by types

	2003	2004	2005	2006	2007	2008	2009	2010
Welfare, medical care	58	57	112	95	20	18	15	6
Education	44	68	66	78	30	8	0	2
Agriculture	57	89	43	28	14	22	12	18
New industry creation	56	30	15	11	9	1	0	0
International exchange and logistics	21	2	3	4	1	0	1	0
Total	236	246	239	216	74	49	28	26

Table A5-2 Examples of Special Zones

	Yokohama Emergency Medical Service Reform Zone	Kamikatsu Paid NPOs Transportation Service Zone
Sponsor	Yokohama City	Kamikatsu-Cho, Katsuura-Gun, Tokushima Prefecture
Date of Approval	March 31, 2008 (16 th cycle)	May 23, 2003 (2 nd admission)
Date of Nationwide Application (Duration)		June 14, 2004 (13 months)
Goals	To increase the number of medical rescue teams to keep up with the increased demand	Provide transportation to the residents, especially the old, in a rural town of Kamikatsu, where they lacked the service from private-run bus and taxi companies
Deregulatory Measures Applied	Legally, an emergency medical service team is required to have at least 1 ambulance and 3 emergency medical technicians (EMTs). The zone allowed an emergency medical service to be formed with 1 ambulance and 2 EMTs for some lower priority emergency conditions (based on the call-triage assessment)	The special measures allowed the NPOs in the zone to operate transportation service without drivers with commercial licenses
Progress	Introduction of call-triage system and deregulation on EMTs allowed the city to use more resources for high priority cases	The service improved the means of transportation for visiting relatives. The number of NPO drivers registered increased from 14 to 20. By 2008, the transportation served a total of 6,096 people
Nationwide Application		NPO is not required to have drivers with commercial licenses to run transportation services. NPO is allowed to provide transportation services with private vehicles

	Gunma Foreign-Language Education Zone	Joint-Operation of Elementary and Middle School Zone
Sponsor	Ota City, Gunma Prefecture	Shinagawa Ward, Tokyo
Date of Approval	April 21, 2003 (1 st admission)	August 29, 2003 (2 nd admission)
Date of Nationwide Application (Duration)	July 9, 2008 (63 months)	July 9, 2008 (59 months)
Goals	To accommodate children of foreign workers better in public education. Ota City is a manufacturing powerhouse. It is home to the car manufacturer Subaru, a subsidiary of Fuji Heavy Industries. Foreign workers for manufacturing factories have significant presence in the city	To better integrate public education in elementary and middle schools
Deregulatory Measures Applied	More flexible school curriculum. The special measures enabled English immersion program in every subject except Japanese and Social Science. Joint operation of elementary, middle, and high school provided a more coherent English learning environment to the students	Divided 9-year compulsory education into three phases – 4 years of fundamental class, 3 years of intermediate class, and 2 years of advanced class. Introduction of new subjects: 1) “Citizenship” for 1 st ~ 9 th grades; 2) English for 1 st ~ 6 th grades; and 3) “Step-Up Learning” for 5 th ~ 9 th grades. Step-Up Learning is an honor course in which each student can pursue more rigorous curriculum for his or her subjects of interests. To enroll in Step-Up Learning, the student needs to demonstrate superior academic performance in the introductory courses

		(Shinagawa City 2008)
Progress	The English immersion program has demonstrated some success; 12 third-graders passed intermediate level of high school English exam (the number was zero when they were first-grade). Likewise, 30 sixth graders who transferred from other schools have passed higher level of high school English exams (the number was zero when they transferred in their fourth-grade) (Gunma Kokusai Academy 2007)	Increased applicants to the school. The percentage of parents in this school district who wish to enroll their children to the school increased from 17.0% to 29.8%
Nationwide Application	Greater flexibility on the school curriculum. The school installed foreign language immersion program and pioneered English instruction for math and science classes	Greater flexibility on the school curriculum. The school does not need to adhere to the standard curriculum requirement laid down by the Ministry of Education; the school created two new subjects (Citizenship and Step-Up Learning) and allocated more time on English

	Iwate Homeland Revitalization Zone	Ozu-Uchinomi Olive Production Zone
Sponsor	Tono City, Iwate Prefecture	Uchinomi-Cho (Ozu Island), Kagawa Prefecture
Date of Approval	November 28, 2003 (3 rd admission)	April 21, 2003 (1 st admission)
Date of Nationwide Application (Duration)	July 9, 2008 (63 months)	November 22, 2005 (17 months)
Goals	To attract tourists from the urban area to experience the lifestyle of the Japanese countryside. To promote local economy through tourism	To vitalize the town by utilizing olives, a local specialty product of Ozu
Deregulatory Measures Applied	Allowed brewing of <i>doburoku</i> (Unrefined Sake); solicitation of corporate firms to the agricultural business through land-leasing; deregulation on the minimum farming area required, which was 1.25 acres	Allow corporate firms to enter agricultural-business through land-leasing
Progress	The <i>doburoku</i> brewing business increased the number of tourists, from 1.50 million in 2002 to 1.53 million in 2008. For those who stayed overnight, the number increased from 57,000 in 2002 to 61,000 in 2008. Deregulation on the floor of required farming areas attracted more business to pursue agriculture in the region – 4 new <i>doburoku</i> brewery and 5 new agricultural firms	6 firms have entered the agricultural business and utilized 28.4 acres of previously unused farmland. In 2008, the town earned ¥250 million from agricultural output, a 25% growth from 2003, and ¥100 million from tourism
Nationwide Application	Brewing of <i>doburoku</i> , entry of for-profit corporations in agricultural business through land-leasing, and	Allow for-profit firms to enter agricultural-business through land-leasing

	deregulation on the minimum farming area required	
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	Kobe Biomedical Innovation Cluster	Mie High-Tech Industry Revitalization Cluster	Kitakyushu International Exchange Zone
Sponsor	Kobe City, Hyogo Prefecture	Yokkaichi City, Mie Prefecture and Yokkaichi City Port Authority	Kitakyushu City, Fukuoka Prefecture
Date of Approval	April 21, 2003 (1 st admission)	April 21, 2003 (1 st admission)	April 21, 2003 (1 st admission)
Date of Nationwide Application (Duration)			
Goals	To form an international cluster of medical-related industries	To rejuvenate the town through structural reform	Located midway between Tokyo and Shanghai, Kitakyushu aims to become an international hub for traffic and trade through deregulation
Deregulatory Measures Applied	Foreigners who work in this special zone are prioritized in the visa-acquiring process. The special zone also waived the prohibition on national university faculties to participate in additional jobs	Relaxed layout requirement on petroleum refineries. 24-hour customs clearance	Solicitation of foreign researchers; deregulation of visa-related procedures; 24-hour custom clearance; subsidized rate for overnight services; easier application for the change of landfill usage
Progress	177 companies have entered the Kobe special zone to pursue innovations in biomedical fields via partnerships among industry and	The special zone increased the demand for overnight services. It also facilitated the research and development for fuel cell batteries.	24 hour clearance and reduced overnight rate facilitated a 50% growth (from 2004 to 2009) in demand for harbor access. 27 firms

	academia. By 2013, the special zone expects to create 5,400 jobs and produce ¥99 billion in output	By 2014, the special zone expects to attract ¥75 billion in investment, create 1,800 jobs, and generate ¥40 billion additional output	have entered the special zones. The gross investment as a result of the new firm entry is projected to reach ¥190 billion and create 4,800 jobs
Nationwide Application			

Table A6-1. Local Government Revenues: 1970-2010 (¥ trillion)

Fiscal Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Total	10.10	12.18	15.09	18.22	23.49	26.04	29.50	34.01	39.13	43.13
Local Allocation Tax Grants	1.80	2.10	2.55	3.13	4.20	4.47	5.19	5.71	7.04	7.71
State Subsidies	2.08	2.55	3.35	3.76	4.98	5.82	6.61	7.78	8.93	9.72
Local Bonds	0.64	1.12	1.64	1.64	1.93	3.18	3.68	4.29	4.98	5.10
Local Taxes	3.75	4.24	5.00	6.49	8.24	8.15	9.56	11.01	12.24	14.03

Fiscal Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total	46.80	50.10	52.17	53.46	54.97	57.47	60.08	64.66	68.01	74.57
Local Allocation Tax Grants	8.11	8.72	9.18	8.87	8.55	9.45	9.83	10.56	11.21	13.46
State Subsidies	10.51	10.94	11.04	10.75	10.60	10.42	10.28	10.36	9.91	10.28
Local Bonds	4.73	4.91	4.92	5.23	5.01	4.50	5.26	5.97	5.63	5.62
Local Taxes	15.89	17.33	18.63	19.84	21.49	23.32	24.63	27.20	30.12	31.80

Fiscal Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	80.41	85.71	91.42	95.31	95.99	101.32	101.35	99.89	102.87	104.01
Local Allocation Tax Grants	14.33	14.89	15.68	15.44	15.53	16.15	16.89	17.13	18.05	20.86
State Subsidies	10.63	11.17	12.86	13.61	13.71	14.96	14.67	14.26	15.63	16.48
Local Bonds	6.26	7.26	10.20	13.37	14.30	16.98	15.62	14.08	15.14	13.07
Local Taxes	33.45	35.07	34.57	33.59	32.54	33.68	35.09	36.16	35.92	35.03

Table A6-1. Local Government Revenues: 1970-2010 (¥ trillion), continued

Fiscal Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*	2010*
Total	100.28	100.00	97.17	95.00	93.40	92.90	91.50	91.10	92.20	82.56	82.13
Local Allocation Tax Grants	21.78	20.35	19.55	18.06	17.00	17.00	16.00	15.20	15.40	15.82	16.89
State Subsidies	14.45	14.55	13.17	13.14	12.50	11.89	10.53	10.34	11.69	10.30	11.57
Local Bonds	11.11	11.82	13.32	13.79	12.37	10.37	9.62	9.58	9.92	11.83	13.49
Local Taxes	35.55	35.55	33.38	32.67	33.54	34.80	36.80	40.27	39.56	36.19	32.51

* The initial budget numbers are shown for fiscal years 2009 and 2010.