

# Consumer Price Disinflation in Japan 1990-2004 A Management Perspective

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## ABSTRACT

It is our contention that the under-accredited presence of goods with high foreign produced content (FPC) in the consumer market basket has played a significant role in keeping price increases in check in Japan. FPC is a concept intended to measure the extent to which any direct or indirect foreign inputs are associated with a good in the core consumer market basket. We will attempt to demonstrate, with a variety of circumstantial arguments and evidence, that FPC has not been clearly reflected in Japanese statistics and this omission has likely misrepresented the extent to which reported changes in inflation reflect economic conditions or policy effectiveness. A conceptual framework is developed to support our assertion disinflation during this time period should, in large part, be viewed as economically beneficial to Japan.

## INTRODUCTION

The perceived role and importance of price level movements in the current episode of economic stagnation in Japan has evolved since the inception of the downturn in the early 1990s. The latter half of the 1980s was a period of high economic growth with dramatic appreciation of financial assets and real estate. Even at the time, the bubble-fueled rapid expansion was considered by many economists to be problematic and unsustainable. The over-accommodative monetary policy of the Bank of Japan (BoJ) was also considered by some to be a contributing factor. Thus, the ending of this phase of exuberant growth was not entirely unexpected.

However, what indeed surprised and has greatly puzzled many economists for well over a decade has been the depth and duration of the resulting downturn and, importantly, the persistent and sustained decrease in the general price level. Most economists automatically associate price deflation with the Great Depression and decreased economic activity and efficiency.<sup>1</sup> The purpose of this paper is to suggest this long period of Japanese price disinflation<sup>2</sup> has not been exclusively driven by depressed aggregate-demand, contrary to what is widely assumed. The on-going debate on appropriate government remedies, which has focused considerable scrutiny on monetary policy, has not adequately addressed other factors that have contributed to downward pressure on prices. This paper will attempt to identify some of these factors and clarify the decision environment underlying price level movements as induced by business managers during this time period.

It should be noted we are not addressing asset (financial or real estate) deflation but are directing our attention to the determinants of deflation as they impact consumer prices. Our contention is that there are factors beyond stagnant aggregate demand that have played prominent roles in this long period of consumer price disinflation. Further, we argue these disinflationary pressures in large part can be seen as beneficial to the long run economic health of the Japanese economy.

## DISINFLATION AND POLICY RESPONSE: A BRIEF HISTORY

Japan's annual core CPI inflation rate peaked at just above 3 percent in early 1991 (see Graph 1) as monetary policy began to tighten and the financial and real estate markets began to stumble under the weight of excessive and rapid appreciation. Between 1990 and 1994 Japan's economy fell from a level that was estimated to be 4 percent above capacity to 6 percent below capacity (Katz, 2003). During the 1990s, while several periods of recovery were allegedly stymied by restrictive fiscal policy<sup>3</sup>, it was monetary policy, purposeful or not, that was thought to be the brake on

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<sup>1</sup> Akerlof et al. (1996) estimates a 1 percent deflation, with downward wage rigidity, would increase long run unemployment in the U.S. from 5.8 percent to 10 percent. Kumar et al. (2003) found the cost of deflation may be less, dependent on wage rigidity assumptions, but still significant. Interestingly, Cole and Ohanian (1999) suggest that deflation had much less to do with the Great Depression than is commonly assumed.

<sup>2</sup> Although disinflation and deflation can be shown to have slightly different effects on economic activity, see, for e.g., Bordo et al. (2001), in this paper the terms are used interchangeably.

<sup>3</sup> Katz (2003), p. 106. The Hashimoto administration in 1996-1998, citing concerns over public debt and the futility of more public works, cut spending and increased the consumption tax from 3% to 5%. This is widely thought to have contributed to the worst recession in Japan since WWII in 1997-98. Later in 2001-2002 Koizumi's policies were criticized for emphasizing budget cuts instead of addressing the bad debt problem, Katz (2003) p. 11.

economic recovery.<sup>4</sup> As late as 1999 BoJ Deputy Governor Yamaguchi worried previous attempts to avert deflation with (modest) monetary easing “might have dampened the restructuring effort at Japanese financial institutions.”<sup>5</sup> The feeling still lingered at the BoJ that prolonged loose monetary policy contributed to the current circumstances and too rapid a recover would delay needed structural reform. With the exception of the consumption tax increase in 1997, the trend in the CPI throughout 1990-2004 was downward (Graph 1).

Toward the late 1990s, price deflation took center stage as a growing chorus of researchers began calling for a different policy response from the BoJ. Deflation began to be seen as more than a symptom of anemic aggregate demand, see for e.g., Krugman (1998, 1999): deflation came to be seen a problem in itself, and a cause of serious economic concern for policymakers. Falling prices not only lower corporate profitability and deter spending<sup>6</sup> but, to the extent it is not factored into loan agreements, deflation also increases the real burden of private and public debt.<sup>7</sup>

In March of 1999, the BoJ formally adopted what came to be known as its zero interest rate policy (ZIRP). With the exception of August 2000 – March 2001, interest rates were driven to and remained at very low levels (Graph 1). In March of 2001, ZIRP was supplemented with a more aggressive policy, quantitative monetary easing (QME), which supplied even more reserves to the banking sector and reinforced BoJ’s commitment to a zero interest rate policy until the deflationary concern was dispelled. The move to QME was supported by research, including Bernanke, et al. (1999) suggesting extraordinary monetary measures were required due, in part, to the presence of a liquidity trap and the inevitable zero percent floor on nominal rates. These extreme monetary policy measures were deemed necessary due to deflationary pressures and the resultant inability to push real interest rates low enough to stimulate aggregate demand. BoJ Governor Masaru Hayami ended his 5-year term on March 19, 2003 and Prime Minister Koizumi pledged to appoint an “aggressive deflation fighter” as his replacement, calling falling prices Japan’s “most urgent policy task” (Frederick, 2003a).

As would be expected, there was robust questioning in the academic literature concerning the conventional wisdom that the liquidity trap, brought about by falling prices, is to be avoided and is, in itself, a problem for Japan. But even one of the staunchest critics of this policy, Uhlig (2000), opined “current theoretical tools, including this paper, are unsatisfactory: they do not yet allow us to deal with a deflationary economy...” and concluded an extensive treatise on the theoretical treatment of deflationary monetary policy with “This time, more research really is needed.”<sup>8</sup> In any case, most researchers seem to have unanimity on the proposition “Deflation in Japan appears to reflect weakness in the economy, rather than positive supply shock.”<sup>9</sup>

Policy makers today seem to generally agree with the conventional view that deflation is economically harmful and reflective of weak aggregate demand. They have also expressed puzzlement over the exact nature of deflation. In April 2005, for e.g., Finance Minister Sudakazu Tanigaki said “the causes of deflation are hard to specify, given prices of some products started rising and corporate profits remain firm.”<sup>10</sup> From the beginning of the so-called ‘lost decade’, policy makers and researchers have changed their view of deflation from one of benign (or necessary) neglect to that of serious concern and confusion. In what follows, we hope to clarify (and perhaps sooth) concerns surrounding deflation and attach some caveats to the ‘conventional’ line of reasoning that slack aggregate demand is the sole determinant of consumer price disinflation.

## CONCEPTUAL FRAMEWORK: A MANAGEMENT PERSPECTIVE

Our study approaches the popular mystery of price disinflation in Japan from the perspective of business management rather than a macroeconomics (or macro-finance) perspective. As a result of how Japanese managers ultimately reacted to their changing economic environment (see Figure 1), our basic assertion is that there has ultimately been an unrecognized increase in the foreign produced content (FPC) of items in the consumer market basket. FPC is a concept measuring the extent to which any direct (e.g., sub-component) or indirect (e.g., final assembly) foreign inputs are associated with the physical good in the consumer market basket. Increasing FPC, for the reasons explored below, has played a significant contributing role in keeping price increases in check in Japan.

Furthermore, ever-increasing FPC has diluted the potency of the price signal as a clear reflection of domestic economic conditions and, as a result, has misled Japan’s policy makers (and, as noted above, many academic researchers). Reacting in the conventional way to lower prices, monetary policy makers in the early 2000s at the BoJ drove interest rates to very low levels. But monetary (and fiscal) policy failed to deliver the increased aggregate demand

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<sup>4</sup> As late as 2001, BoJ staff “repeatedly referred to a distinction between ‘bad deflation’ and good deflation’ and argued Japan’s was a ‘good’ type, Hayami (2001).

<sup>5</sup> Kyodo News (2000).

<sup>6</sup> The logic being expectations of lower future prices would result in current expenditures being postponed.

<sup>7</sup> The resultant transfer of wealth from creditors to debtors would further suppress spending and aggregate demand, as well as further aggravate the non-performing loan problem for banks.

<sup>8</sup> Uhlig (2000), p. 264 and p. 298, respectively.

<sup>9</sup> Baig (2003), p. 5.

<sup>10</sup> Speech posted to Angry Bear (2005).

and higher prices predicted by conventional economic theory. Indeed, even today, price deflation is still considered problematic in Japan<sup>11</sup>. Our research addresses this paradox directly.

We argue that changes in information technology and the regulatory environment (i.e., more open trade and liberal domestic distribution laws) have resulted in a much higher FPC in the Japanese consumers' market basket than is commonly recognized. This is largely, but not completely, reflected in the growing presence of Box Stores and the use of e-commerce and joint production agreements (especially with China). This has resulted, we contend, in the FPC portion of the Japanese market basket increasing significantly and this has, in turn, resulted in price disinflation.

## A CHANGING COMPETITIVE AND ECONOMIC ENVIRONMENT

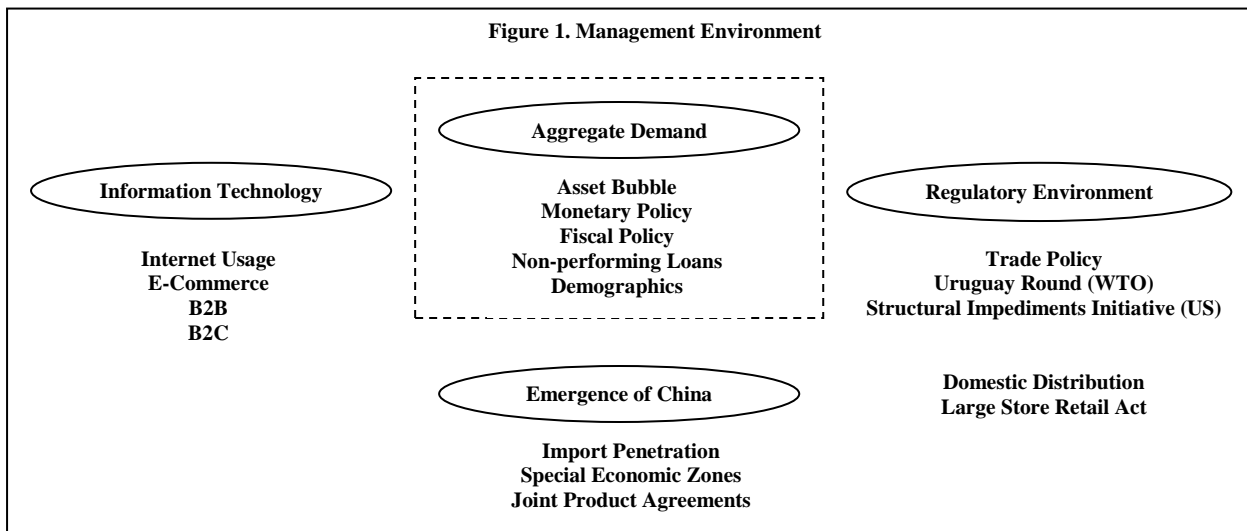
Managers faced a number of factors that contributed to decreasing prices during the late 1990s and into the 2000s (Figure 1). While decreased consumer demand is viewed as a major reason for price deflation, the competitive environment facing Japanese managers changed considerably in the late 1980s and early 1990s. These factors are described below.

### Stagnant Consumer Demand

Japan's economic prosperity lasted through 1989 when the real estate bubble burst and economic growth ground to a stop throughout the next 16 years. Consumer spending stagnated throughout the 1990s and early 2000s due to consumer uncertainty and government policies. While there were short periods in the late 1990s and early 2000s when the economy appeared to regain its strength, these bursts were short-lived. As a result, despite interest rate cuts throughout the period, consumers did not respond by increasing spending (Ito & Mishkin, 2004).

Government policies such as a new consumer sales tax and the banking crisis contributed to curtailed consumer spending. In 1989 Japan imposed 3% consumer sales tax for the first time which was raised to 5% in 1997. Combined with Japan's economic downturn, these taxes may have contributed to a decrease in Japanese spending, as well.

The problem of nonperforming loans for major Japanese banks continued to make headlines throughout the 1990s. Consumers continued to learn about the extent of the banking crisis as banks divulged "new" debts. A number of leading Japanese banks, weakened under the weight of their bad loans merged.<sup>12</sup> A number of Japanese firms restructured in the late 1990s leading to staffing reductions, and consolidations through mergers and acquisitions (Kikuno, 2003). This period of uncertainty could not have been encouraging for consumers.



### Changes in Regulatory Environment

In addition to economic forces that may have dampened consumer spending, a number of changes related to international trade, domestic distribution and internet usage placed downward pressure on prices, as well. During the 1980s, Japan faced severe international pressure to liberalize trade. Japan's exports outstripped its imports and Japan held significant trade surpluses with a number of its trading partners (New York Times, 1987). Japan's domestic prices were high compared to other OECD nations due in part to its restrictive trade policies and heavily taxed imports.

<sup>11</sup> On February 23, 2008 the Wall street Journal suggested recent pessimism over the economy and a December inflation rate of only .5% (fueled mostly by energy prices) could incline the new BoJ Governor toward a looser monetary policy (Moffett), p. A6.

<sup>12</sup> Fuji, Dai-ichi Kango Bank and Industrial Bank of Japan merged in 2000, Sumitomo and Sakura fully merged in 2002

Beginning 1989, in response to threats of retaliation by Japan's trade partners, Japan introduced a series of measures that would increase imports into Japan (USTR, 1996).

Related to the liberalization of international trade was the move to allow the formation of large retail establishments. Until 1989 Japan's retail scene consisted of numerous small, locally owned specialty shops clustered in neighborhoods or beneath covered arcades near train stations. Small stores could block the entry of both foreign and domestic more efficient, large retail operations through the Large Store Retail Act. The result was an inefficient and expensive distribution. Depending on the product, goods sold in these small shops could have passed through as many as 5 layers of wholesalers with costs passed down to the consumer (Martin, et al, 1998).

With U.S. pressure for Japan to open its markets, the Large Store Retail Act (*Daitenho*) was abolished in 1990. The removal of the Large Store Retail Act was the beginning of the end for the small shops and arcades as both domestic and foreign large retailers, such as "Toys R Us", "Eddie Bauer", "Pottery Barn", "Costco", entered the Japanese retail scene. These large retail establishments cut out a number of middlemen in the distribution chain, making distribution more efficient, lowering distribution costs and prices to consumers. In addition, the legislative reform in the retail sector also opened the door to the establishment of a flood of convenience stores, e.g. "Seven-11", "Family Mart", "Lawson" beginning the mid-1990s. These types of stores purchase in bulk cutting out middlemen, have developed sophisticated distribution systems, and have low prices on everyday goods (Frederick, 2003). As a result, consumers turned away from neighborhood shops which offered a limited product selection and began frequenting larger retail shops with a wide variety of products and lower prices. Graph 2 shows the decline in small, unincorporated retail establishments since 1990 as consumers began to shop at larger stores while Graph 3 shows the decline in individually owned wholesale establishments as retailers begin bypassing small wholesalers in the distribution chain.

In addition to bilateral trade agreements made between the U.S. and Japan under the Structural Impediments Initiatives (SII), Japan also agreed to a number of import tariff reductions under the Uruguay Round in 1993 (World Bank, 1995). These tariff reductions had the immediate effect of not only reducing tariffs on agricultural products, but also drastically reducing tariffs on industrial exports from developing Asian countries like China. The result was soaring imports from China of industrial goods which in turn were used in Japanese products.

### **Emergence of China**

By the mid 1990s the effects of import liberalization, the emergence of China as a growing importer of goods along with the emergence of large scale retailers were taking their toll on consumer prices. Graph 4 shows that during this time imports to Japan from China, rose considerably. Compared to imports from the U.S. and Korea, imports from China take a significant upturn in the early 2000s. These significant volumes of lower-priced goods from China exerted more downward pressure on prices.

The type of goods exported from China has also changed over time. In the 1990s China mainly exported low-priced textiles, foodstuff and manufactured goods mainly targeting the Japanese consumers. Beginning the early 2000s, China's export composition to Japan began to shift toward more sophisticated products. As Graph 5 shows, there has been explosive import growth in electric and non-electric machinery, manufactured goods, and machinery and equipment. These imports had a two-fold effect on lowering prices for consumers. First, as we have seen for many consumer products sold in the U.S., Chinese consumer goods directly lowered prices for consumers.

Unlike the U.S., which has reacted to high labor costs by shifting much of its manufacturing overseas, Japanese firms maintain manufacturing expertise as one of their key success factors. However, a number of exogenous factors make manufacturing in Japan very costly. Outside of nuclear power, Japan must import all its energy. Land in Japan suitable for production facilities is scarce, making the establishment of new facilities costly. Due to an aging and declining population, Japan's labor costs are the highest in Asia, roughly 20 times that of labor costs in China (Lett & Banister, 2006). Japan's firms faced the dilemma of where to manufacture its growing number of products.

China provided the answer to Japan's dilemma as many Japanese firms established manufacturing facilities in China. Japanese manufacturing firms facing high domestic labor costs could no longer rely on its domestic subcontracting network for its subcomponents. Japanese managers saw opportunities to lower costs by manufacturing the entire product in China or by increasing the product's foreign produced content specifically using lower cost Chinese made components. China is a logical outpost for this type of manufacturing as factors of production are a fraction of what they are in Japan, and China is one of Japan's closest neighbors.

To encourage foreign direct investment (FDI), China's provincial governments established Special Economic Zones (SEZ) beginning the late 1980s. Between 1989 and 1998 over 1000 Japanese affiliates invested in China<sup>13</sup>. Electric and General Machinery and the Electronics Industries represent over half of the Japanese firms (Wakatsugi, 2005). Although Japanese FDI to China dropped in 1999, it has been steadily rising since then, especially in the industrial sectors (Feller, 2003). The results of these investments into China correspond with the increase in industrial imports from China.

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<sup>13</sup> Does not include Hong Kong or Taiwan.

It is difficult to disentangle the proportion of the foreign produced content of products made in Japan. However, as Graph 5 shows, there was significant growth in imports of industrial products from China. The increase in the level of sophistication of the imports from China beginning the late 1990s also suggests that these imports were used as inputs to products manufactured in Japan. This data suggests that parts, electronic components and machinery used as inputs in production were imported from China lowering overall manufacturing costs for Japanese producers. The increase of lower-priced foreign produced content of products made in Japan since the late 1990s, lowered costs and placed further downward pressure on consumer prices.

Japan continues to maintain manufacturing excellence by developing new products and developing manufacturing processes for its leading edge products. Rather than manufacture all their products at home where costs are high, large Japanese firms tend to manufacture only their latest products using highly proprietary technology at home. Moreover, proprietary technology is less subject to patent infringement. As these products become standardized, their technology no longer state of the art, as manufacturing technologies are developed and perfected, and as pressures to increase scale economies rise, large Japanese manufacturers tend to shift production of these products overseas. Japan has been very successful at establishing joint manufacturing agreements in China. As a result, although Japan's imports from China have grown significantly, unlike the U.S., which has a significant trade deficit with China, Japan maintains a trade *surplus* with China (Odessey, 2005). In fact, in 2007 China was expected to overtake the U.S. as Japan's leading export partner (Sano, 2007). While China is still known for its low-priced exports to Japan, in 2006, Japan's technology exports to China were valued at \$5.24 billion, second to Europe, accounting for 23.8% of China's technology orders (Schwankert, 2007).

### **Advances in Information Technology**

Another factor that has contributed to lowering costs and prices is Japan's high rate of information technology use. Japan is second only to the U.S. in terms of broadband subscribers. As Graph 6 indicates there have been steady increases in total technology use since 1995. The diffusion rate of household internet subscribers in Japan increased from under 30% in 1999 to almost 87% by the end of 2005 (Statistical Handbook of Japan (SHJ), 2006, pp. 98-99).

Significant increases in internet adoption were made possible when deregulation forced open NTT's monopoly on the telecommunications industry (Katagiri, 2005). A series of policies to deregulate the telecommunications industry during the late 1990s and early 2000s resulted in greater competition and a reduction in prices for phone services. Foreign internet service providers like Yahoo BB (broadband) brought low cost DSL service in the early 2000s. As shown in Graph 6, bundled with low priced VOIP services, DSL adoption soared.

Not only were consumers adopting technology, Japanese enterprises were, as well. 85.7% of businesses with five or more employees and 99.1% of firms with 300 or more employees reported using the internet by the end of 2005 (SHJ, 2006, pp. 98-99). Large Japanese manufacturing firms have long used electronic data interchange (EDI) with their network of supplier firms so they are familiar with the use of IT (Dedrick and Kraemer, 2000). While it does not appear likely that the internet will replace EDI, studies suggest that Japanese manufacturing firms increasingly use the internet to enhance distribution of their products (Tachiki, 2004). Similar to EDI use with suppliers, it is not expected that the internet will replace existing distribution channels for manufacturers (*ibid*). Retail establishments such as supermarkets and large retail stores increasingly use the internet to bypass the multi-layered, traditional distribution channels and to buy directly from producers, cutting out the middlemen and lowering costs (*ibid*).

Not surprisingly, e-commerce has been growing steadily. In 2003, Japan had the third-largest e-commerce market in the world at \$255.7 billion behind the U.S. and Western Europe (ECOM trends). E-commerce has been rapidly growing; e-commerce sales were up 80% in 2001 over 2000, and it is anticipated that this pace will continue (Tarrioux & Brown, 2002).

While internet use is widespread, electronic commerce is spreading through an unlikely channel, convenience stores or "combinis" (Strom, 2000). The link between e-commerce and convenience stores is a function of the particular characteristics of Japan's consumers and parcel delivery services. Japanese consumers prefer to pay in cash and delivery companies will not leave packages unattended. Moreover, since deregulation of the retail sector, as of 2000, there were 50,000 of the ever-present "combinis". As a result of these factors, "combinis" have become a popular place for e-consumers to pay for their online purchases and a place for package delivery services to make one-stop neighborhood deliveries (Aoki, 2000). As is the case with the U.S., one would expect to see lower prices due to competition from e-commerce.

## **FPC, BUSINESS ADAPTATION AND CONSUMER PRICES**

The relatively sudden appearance of foreign goods on the shelves of Japanese stores was the collective result of forces described above that dramatically altered the business environment (Figure 1). The genesis of this onslaught was lower trade barriers, but other new laws easing restrictions on large-scale (and, importantly, foreign owned) retail outlets also played a key role in exposing consumers to imported goods – especially when compared to stock items traditionally available in the mom-and-pop-store dominated retail distribution system. Growing access to the internet

and use of retail e-commerce also contributed to making foreign goods more familiar and available to consumers. Finally, and needless to say, China was the origin of many of these lower priced goods threatening (from the perspective of domestic producers) to penetrate the Japanese market basket. Thus, management was forced to confront the tsunami of globalization sweeping across Japan's consumer markets.

Just as deregulation, new technology and China's emergence combined to create this competitive threat, the new business environment ultimately fashioned business opportunities of profound long-term benefit to the Japanese economy. The prospect of tapping into China's vast and fast growing retail market was made possible and facilitated by Japan's unprecedented corporate investment in China – especially in the so-called special economic zones (SEZ). Large scale investment in the SEZ's also, importantly, allowed Japan to tap into a large and willing low-cost labor pool, ideal for final assembly and sub-component production. Improvements in information technology and the growing use of B-to-B commerce provided communications and coordination support required for Japanese firms to maintain their involvement in the production of these globally competitive goods. These are the types of lower cost, globally competitive, high FPC goods - the production of which is orchestrated by Japanese management - that are becoming increasingly available in Japan and are responsible, in large part, for price disinflation.

## CONCLUSION

Businesses have reacted to changes in their economic environment during the 1990-2004 period (advances in technology, China's emergence and new government regulations) by increasing their investment in procurement, (joint) production methods and distribution systems that favor the production, distribution and consumption of high FPC products. The growing presence of FPC is an event exogenous to aggregate demand conditions, and it is this that has been a hidden force behind disinflation. To the extent changes in the business environment described in this research have contributed to consumer price deflation, it is our contention that (monetary) policies aimed at curing disinflation are misguided. The forces ultimately behind price deflation in Japan are best viewed as multi-layered (threatening and opportunistic) shocks to the competitive and economic environment of management, not as macro demand or supply shocks. Disinflation has not been driven so much by ineffective demand management (monetary and fiscal policy) or even general economic malaise<sup>14</sup> (e.g., demographics), but by the way business managers have reacted (it turns out, predictably) to changes in their overall economic business environment. We have argued the type (and extent) of investment that is being pursued by business firms and the type of, and composition of, items in the market basket are key contributors to price disinflation in Japan.

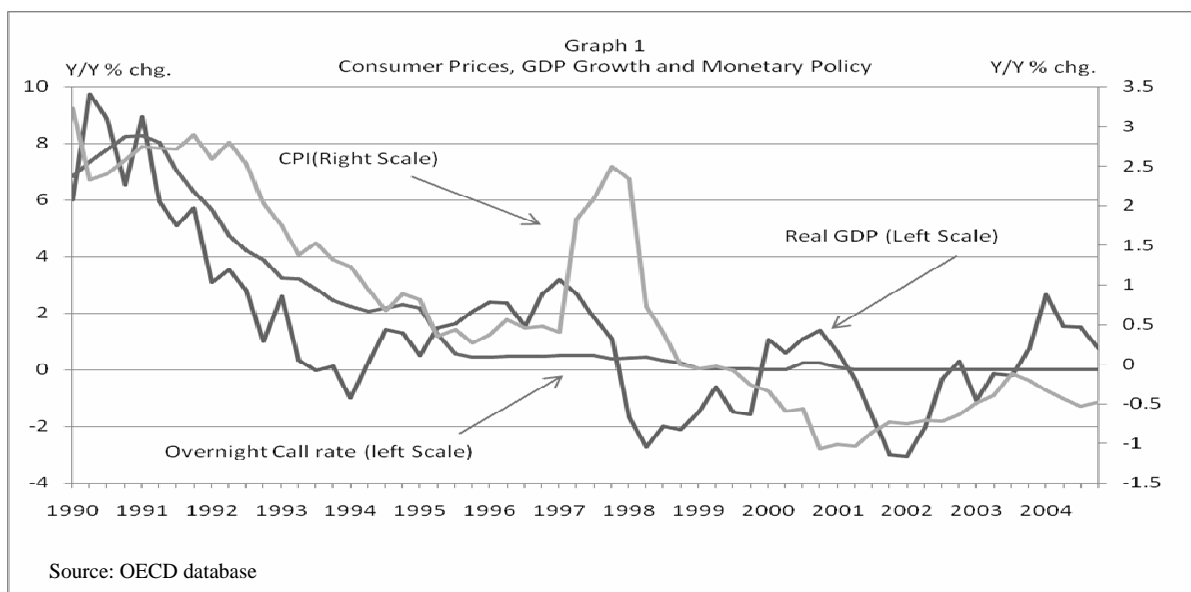
Clearly, consumers in Japan today are benefiting from lower prices and an increased selection of goods. At the same time, Japanese firms have had growing success in finding ways to participate in the production of globally competitive goods. Japan is adapting to the global marketplace in ways better suited to its natural economic comparative-advantage; adapting in ways that insure a prominent role for Japan in filling the global market basket of the 21<sup>st</sup> century. It has been suggested, in a somewhat different context, Japan may be suffering from 'good deflation' (Hayami, 2001). We concur with this positive assessment. Furthermore, we view the by-products of this deflationary period - increased production and distribution efficiency, enhanced global competitiveness, and greater consumer choice – as noteworthy signs of economic advancement in Japan.

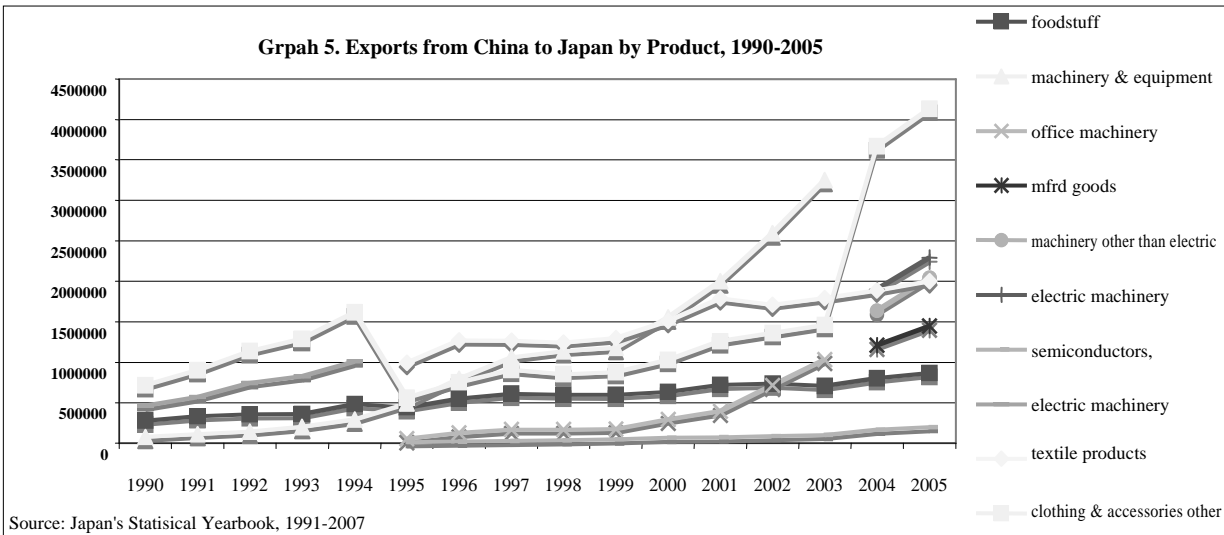
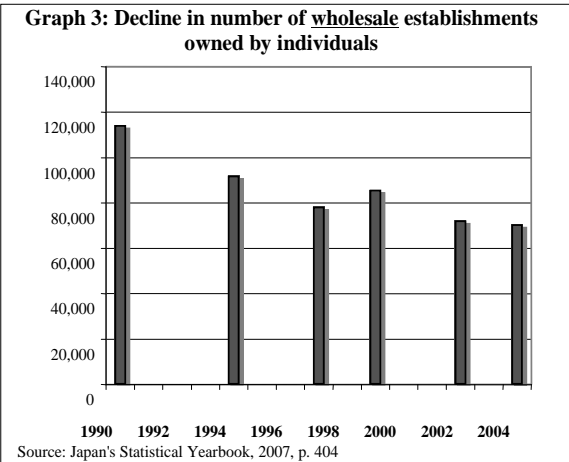
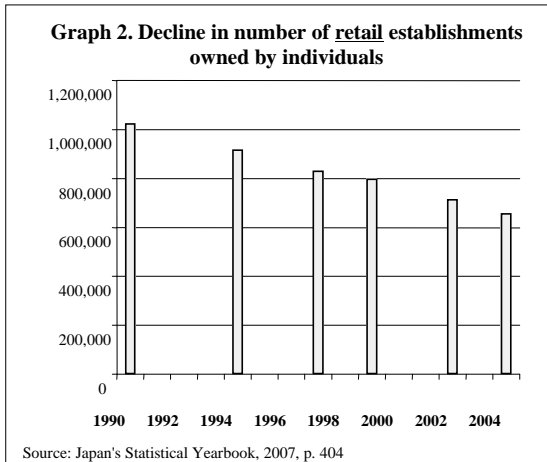
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<sup>14</sup> For e.g., if present trends continue with the work-age population shrinking by .5 percent per year, between 2005 and 2020 the working (and high consuming) population will shrink by 10 percent, Katz (2003), p. 37.

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Graph 6. Yearly increases in Japan's technology use, 1995-2005

