Working Paper Series

Could Japan's Financial Mount Fuji Blow Its Top?

David L. Asher and Robert H. Dugger
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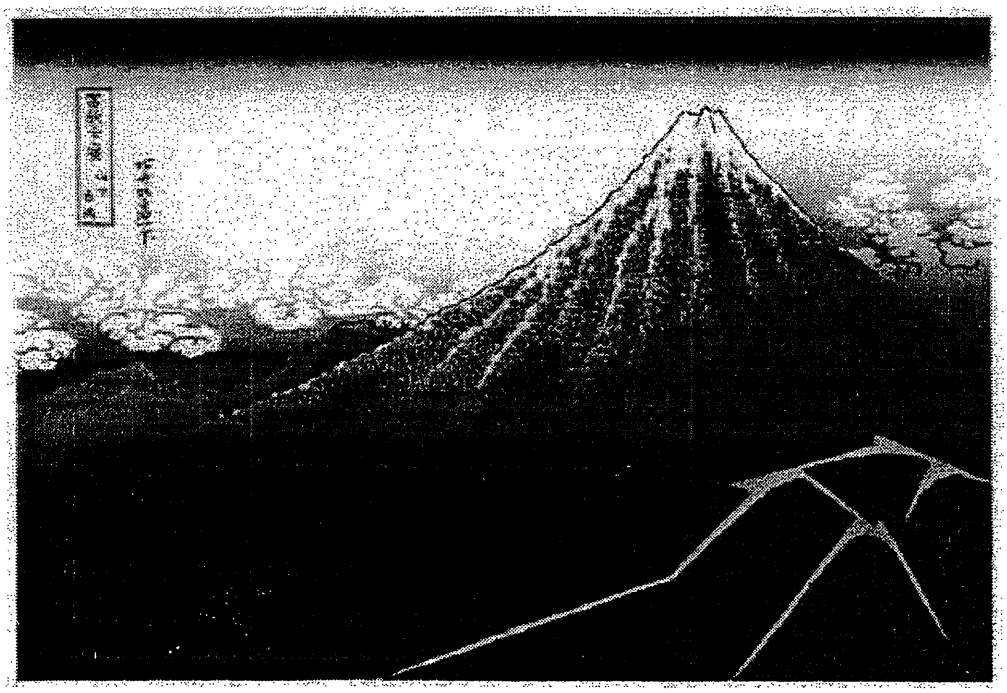
MIT International Science and Technology Initiatives



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Summary of Findings

It is well known that over the last decade Japan has amassed a government debt burden of historic proportions. This paper fully documents the dimensions of that burden. Furthermore, it seeks to answer two central questions of vital importance for the future: 1) How has Japan so far avoided a debt crisis despite having far exceeded the normal boundaries of fiscal sustainability; and 2) Will Japan continue to be able to avoid a large-scale sustainability crisis for much longer?

For answers to these questions we begin by noting Japan's remarkable internal political-economic cohesion, illuminating the matrix of elite actors whose rough unity has enabled Japan to stay "incorporated" in the midst of protracted economic malaise and asset market decline. We also underline the role of Japan-US economic codependency, the roots of which lay deep in the Cold War, in helping Japan fiscally "go where no country has gone before." We then look critically at the possibility for Japan to grow its way out of its debt problems, showing how even prodigious growth in the much-hyped "new Japan" sectors almost inevitably will be unable to support the debt architecture of the over-leveraged, unproductive, and politically protected "old Japan" economic sectors. Thereafter we systematically examine the remarkable facts and features of Japan's volcano-like mountain of national debt from a comparative and historical perspective.

We conclude by stressing that Japan's "financial Mount Fuji" is in serious danger of a major pyroclastic event with global fall-out. As with many imminent geological shifts, although the financial fault-lines are clearly visible on the Japanese home front, the actual trigger of a debt crisis is likely to be a shift in the economic tectonic plates far offshore, in this case in the United States. Specifically, should the US household savings rate begin to rise and personal consumption level decline – as would be likely in the wake of a sustained drop in American asset markets and the commencement of an economic slowdown brought on by rising interest rates – a vital safety valve for the pressure building up inside the Japanese economic system would be shut-off. Absent broad and quickly implemented reforms to reduce the underlying financial stress, Japan's debt volcano would be left open to erupt.

The extent to which the Japanese government faces up to its myriad public and private debt problems after the coming parliamentary elections will be crucially important in determining the nation's medium-to-long-term economic trajectory. In this regard, we identify three possible scenarios for Japan in the next five years. The most favorable involves Japan's political leadership developing and adopting tough pension and healthcare reforms, public and private debt restructuring, and aggressive reductions of central and regional government deficits. Together these measures would establish a long-term rebuilding process for the nation's finances while also imposing long-needed market discipline on its non-productive sectors and maximizing labor mobility and productivity. However, we also propose two other, more depressing, scenarios. The most probable of these involves the current political regime continuing with its convoluted mix of financial reform and financial socialism until an external crisis, such as a sharp State-side economic adjustment, engenders a crisis. The remaining scenario is the most disturbing but also fortunately the least likely. In it the Bank of Japan is forced to yield to political pressure for aggressive debt monetization both as a perceived means of macroeconomic stimulus and to "relieve" the fiscal constraint imposed by the growth in national debt. We fear the economic outcome of such a policy shift would be severe price instability as increased inflation and an enlarged default premium send debt funding costs skyward (setting off a vicious debt-inflationary cycle).

In our view there is no easy way out of Japan's debt trap. Despite its admitted intellectual allure, given the massive amount of floating public and private sector liabilities, the popular idea of introducing an inflation target at this stage seems imprudent and possibly dangerous. Instead, Japan's best choice is to maintain the current accommodative monetary policy while aggressively pursuing economic structural and national financial reform. In this regard, international understanding and cooperation will be vital if Japan's economy is to weather the coming period of tumult and transformation. The G7 must constructively engage Japan on fiscal reform while also tolerating a weaker Yen and an enlarged current account surplus (the likely result of substantial capital outflow from Japan). There is no room for either gloating or indifference regarding Japan's plight. Japan's future is intimately tied to the future of the global economy. Helping Japan today will be helping ourselves down the road.

I. INTRODUCTION

A. A Very Political Economy

Japan has the most rapidly aging population, the largest gross debt and deficit, and the most underfunded social security system of all the world's industrialized countries. Moreover, unique in the G7 today, Japan is plagued by a dim growth outlook, unceasing deflation, and continued private sector leverage *en extremis*. These "dismal trinities" obviously create the grounds for considerable economic, financial, and political instability in the coming years.

The problem with such "logical doomsaying" is that by almost all comparative and historical benchmarks for sustainability, Japan already should be in the throws of a public sector crisis – one that almost certainly would set-back private sector rationalization and reform efforts. For behind almost every negative headline number that emerges, such as a level of gross debt to GDP that flatters even the Italians, there is another much more dire figure related to the criss-crossed, double leveraged nature of the Japanese public and private financial systems (for example, a conservatively estimated public sector negative net worth that is approaching 125% of GDP with as much as 1/3 of the private sector's paper wealth locked up in government controlled investment accounts). If rational expectations were freely effecting market outcomes the way they have in other "open economies" Japan's bond market certainly would have crashed by now and fears of hyper-inflation, not incessant deflation, would be on the front pages of the daily 'shimbun.' Yet, as financial strategists and traders have learned over the last few years, trading against the bear fundamentals alone can be a dangerous business in Tokyo.

This paper argues that in order to understand both how Japan has avoided another market meltdown in the midst of continuing economic and fiscal deterioration and why it could yet face a multiplexed public-private sector economic crisis in the next few years, a simple fact must be kept in mind. Behind the cloak of the "big bang" Japan remains a highly politicized economy. Veritably unique among its peers in the first world, the Japanese state has been both ready and able to harness a large part of the nation's liquid wealth to achieve its stated financial market objectives (be it holding up the stock market via "price keeping operations" keeping long-term Japan Government Bond rates down via Trust Fund Bureau operations, or both).[1] Moreover, the government has been prepared to throw fiscal caution to the wind and put forward the largest program of economic stimulus in peacetime history. Fourteen separate supplementary economic packages have been introduced since 1992 with a total headline amount of stimulus of ¥125.4 trillion ($1.1 trillion at an exchange rate of ¥110 to the dollar). Up to now this indirect or direct economic interventionary and stimulatory power – centered on the Ministry of Finance (MOF) – has been a key factor in keeping "Japan Inc." from breaking apart.

However, as in the Soviet Union in the late 1980s, in today's Japan regime fatigue is accelerating in the midst of economic decline while a viable "new economy" still is more rhetoric than reality. The big bang may be Japan's perestroika policy but like its Russian counterpart it seems grossly insufficient to rescue the old economic order and instead has only accelerated its decline.[2] Today with the MOF's market "restraining powers" (*kosokuryoku*) dramatically eroded by deregulation, the Trust Fund Bureau (TFB) facing growing financial

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[1] The 'miraculous" government bond "market" provides a very good case in point. The mystery of how the yield spread has remained so small in the face of growing default/inflation risk and ratings downgrades is solved as soon as one realizes the dominant role that government controlled accounts have played in absorbing net issuance. With public sector controlled (i.e. the TFB) or 'public sector beholden' (i.e. the bank's and life's) accounts doing virtually all of the net buying, it should be no surprise that the market has rallied. That is to say if one dares to deem the bond "market" in Japan a market at all in the economic sense of the word. If it is a market for risk in the conventional sense, then it is a market for the political risk its members would face if ever it were to unwind. Like all good pyramid schemes this is what has kept it going so far and what insider pray will sustain it into the future.

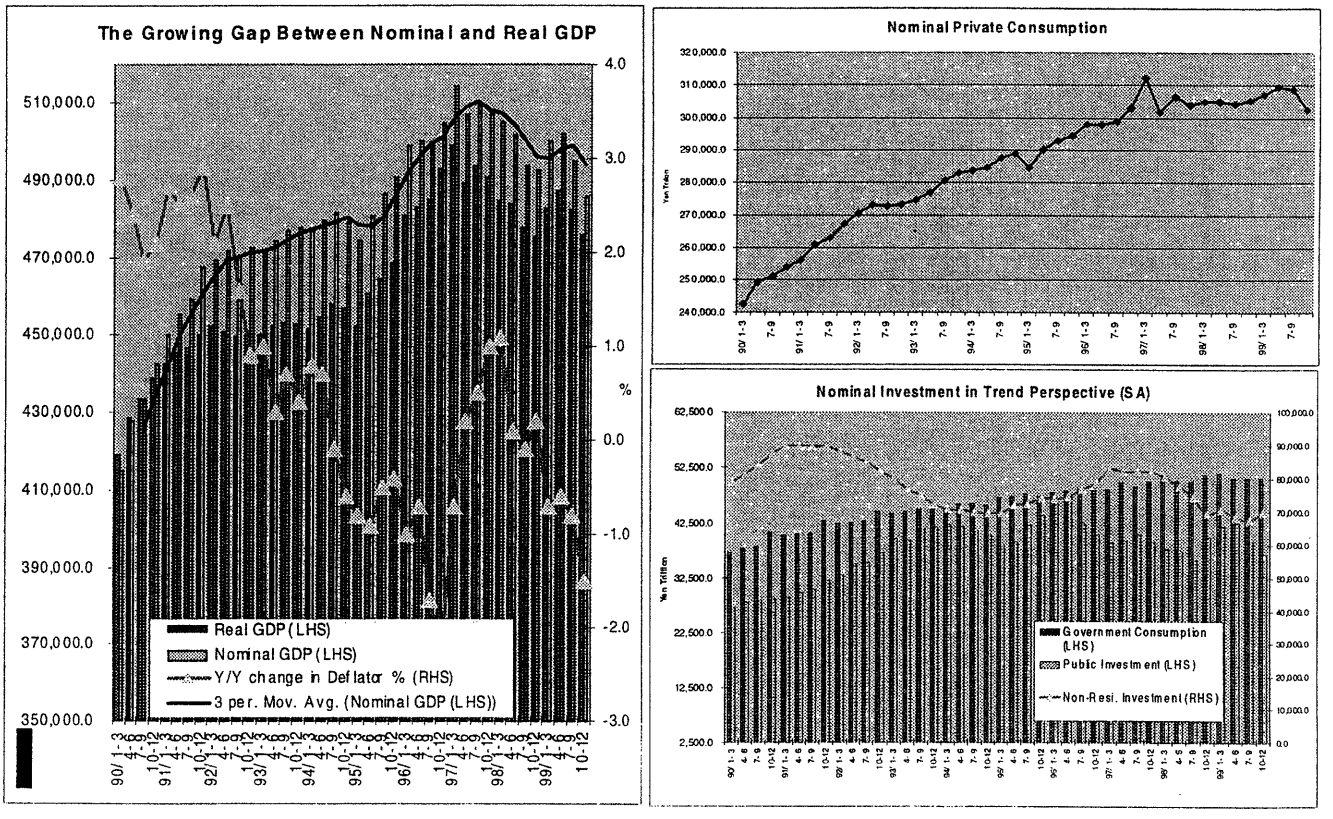
[2] Japan's economy has a great many positive things going for it that the FSU did not and there is a danger of over-doing the comparison. Yet, there is an equal danger of assuming the LDP centered "1955" political economic order continues to be financially viable (and finance is the key factor for our assessment, not industrial competitiveness).

problems of its own, and the government's main-line finances strapped almost to the hilt, Japan's political leaders are starting to run out of options for keeping "Japan Inc." (what we will alternatively call "old Japan") together.

The government's long-held hope remains that it can "pass the baton" to the private sector via a "new Japan" engendered self-sustaining economic recovery. However, despite repeated injections of fiscal stimulus, the economy nominally has contracted 8 of the last 10 quarters, "new Japan" entrepreneurial ventures with few exceptions have yet to make any real money (i.e. operating profits), and "old Japan" industrial bankruptcies are running at a rate of nearly 3% of GDP. As a result the odds are high that there will be no viable runner ready to receive the "baton" when it is passed.

Government statistical tomfoolery, such as the failure to adjust the first quarter 2000 GDP data for the leap-year, may temporarily boost Japan's economic performance figures in a way that is helpful to incumbent politicians seeking to be re-elected. However, creating an expectation of full-fledged recovery also carries with it numerous dangers. Most notably, data indicating sustainable economic expansion, justified or not, are likely to cause medium- to long-term interest rates to rise. Increased interest rates in turn would exacerbate the indebted corporate sector's financial problems, impart substantial losses to the nation's leading banks (which have derived over 50% of their profitability in recent years from JGB trading), and considerably complicate the challenge of funding what may be as much as ¥125 trillion in public sector debt issuance in FY2001. Furthermore, if foreign investors – who accounted for well over 90% of net buying on the leading Nikkei 225 index in 1999 – start to see through the government's statistical meddling and suddenly pull back funds from Japan, the Tokyo stock exchange (which faces a composite P-E ratio higher than at the height of the late 80s bubble economy) could quite possibly crash.

The Nominal Reality of Japan's Economic "Recovery"



B. "Japan Inc." Has Become "Old-Japan"

Modeling the economy as two sectors, old and new-Japan, highlights the seriousness of Japan's financial and structural problems. Put simply, "Old-Japan" for us is made up of the economic sectors – such as agriculture, construction, retailing, transportation, and heavy industry – that are incapable of financially supporting themselves. During the Cold War years, these sectors including the government entities that managed them and the households that depended on them, were heavily subsidized, protected, and regulated. The driving goal was to achieve rapid import-substitution and export-led growth following World War II.

These sectors and the laws, institutions, and practices that led to Japan's Cold War era economic success were what people called "Japan Inc." However, today much of "Japan Inc." faces insolvency without the helping hand of the government.

In contrast, "New-Japan" is comprised of the sectors of the economy that are doing well without Cold War era subsidies and protections. This is the Japan of high-end manufacturing and design, bio-medical research, information technology, communications, environmental protection, consumer entertainment, and a few government entities. Ironically, many leading corporate members of the "New-Japan" community are well-established, large firms that have managed to consistently transform themselves with the changing times without the help of government coddling. Thus Sony, Toyota, Murata, and Takeda can be counted in the "New-Japan" ranks alongside relative upstarts like Softbank, Hikari Tsushin, Docomo, and Orix.

The widening divide between old- and new-Japan is the driving force behind Japan's expanding national debt load. Although "New-Japan" is growing rapidly, its GDP share is too small for its growth to offset the shrinkage of the "Old-Japan" sectors, which account for around 65% of economic activity. Thus while "Old-Japan's" shrinkage is desirable and necessary from an economic restructuring standpoint, it has the adverse effect of causing Japan's debt mountain to grow all the more. Furthermore, the decline of "Old Japan" drags down national GDP and forces the government to borrow and spend sufficiently to offset the negative growth effect.

The tables below illustrate the interaction of these two tiers in the Japanese economy. We estimate that "Old-Japan" constituted about 80 percent of GDP in the mid-1990s and has been shrinking 3 to 4 percent per year.[3] The contraction in 1998 following the Asian downturns was particularly violent. So violent in fact that the fiscal stimulus needed to stabilize the economy in 1999 was almost enough to cause old-Japan to grow. In 2001 and beyond we assume old-Japan's contribution to GDP is negative, but less so each year.

"New-Japan" we estimate constituted about 20 percent of GDP in 1996. We project its growth rate to increase steadily from 7 percent in 1996 to 15 percent in 2001 and decline thereafter.[4] The projections are constrained to align with the discussion in Section A below on central government debt levels and dynamics, with one important difference. The projections below include expected pension fund borrowings. GDP is assumed to grow 1 percent per year after 2000.

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[3] From data on prefectural and central government spending and from official discussions, we estimate that about 75% of the government's roughly 20% share of GDP, is committed to "old Japan". The remaining 25%, we judge can be reliably allocated to "new Japan".

[4] Several commentators on an earlier draft of this paper pointed out the existence and function of a third component of GDP -- a, so to speak, "Interim Japan". It consists of businesses, households, and government entities that are in transition from dependence on noncompetitive export-led growth strategies, to non-Cold-War era domestic growth strategies. This component is actively restructuring but is not yet providing a net addition to GDP. A Bank of Japan commentator estimated interim-Japan now accounts for about 10 percent of GDP.

Old-Japan, New-Japan Sector Effect on GDP (Trillions of Yen and % of GDP)

	1996	1997	1998	1999	2000	*2001*	*2002*	*2003*	*2004*	*2005*
Nominal GDP	503.8	505	494.5	493	500	*505*	*510.1*	*515.2*	*520.3*	*525.5*
Old-Japan GDP Share	80%	79%	68%	67%	63%	*60%*	*56%*	*53%*	*51%*	*50%*
Old-Japan Growth Rate		-1%	-14.5%	-1.0%	-5.5%	*-6.0%*	*-5.5%*	*-5.0%*	*-4.0%*	*-3.5%*
New-Japan GDP Share	19%	20%	22%	24%	26%	*30%*	*33%*	*37%*	*40%*	*42%*
New-Japan Growth Rate		7.0%	7.5%	8.0%	9.0%	*15.0%*	*12.0%*	*12.0%*	*7.0%*	*6.0%*

Fiscal Stimulus Needed to Offset Old/New Japan Effect (Trillions of Yen)

	1996	1997	1998	1999	2000	*2001*	*2002*	*2003*	*2004*	*2005*
Nominal Target GDP	503.8	505.0	494.5	493.0	500.0	505.0	510.1	515.2	520.3	525.5
Old + New Japan GDP	498.8	502.6	442.9	446.9	445.4	*450.1*	*456.0*	*466.6*	*473.7*	*481.5*
Needed Fiscal Stimulus		2.4	51.6	46.1	54.6	*54.9*	*54.0*	*48.6*	*46.6*	*44.0*

Total Public Sector Borrowing (Fiscal Stimulus plus Debt Service)

	1997	1998	1999	2000	*2001*	*2002*	*2003*	*2004*	*2005*
Needed Fiscal Stimulus	2.4	51.6	46.1	54.6	*54.9*	*54.0*	*48.6*	*46.6*	*44.0*
Debt Service (4% rate)	18.4	19.2	22.1	24.5	*27.2*	*31.4*	*36.3*	*42.0*	*50.8*
Total Borrowing Need	20.8	70.8	68.2	79.1	*82.0*	*85.4*	*84.8*	*88.7*	*94.8*
Total Public Sector Debt		551	613	680	*762*	*847*	*947*	*1049*	*1163*
Total Public Sector Debt/GDP		112%	124%	136%	*151%*	*166%*	*184%*	*202%*	*221%*

In this projection, to keep GDP at roughly 500 trillion yen, total central and local government deficit spending has to remain at between 40 and 50 trillion yen through 2002. The emergence of pension deficits in 2003 and beyond keeps the total public sector borrowing needs above 70 trillion yen through 2005. As shown in the table above and on page 10 of Section A below, given the current trajectory, the sum of Japan's central and local government bonds and borrowings will approach 140% of GDP in 2000 and exceed 220% in 2005. This debt growth is the sum of borrowing to cover the interest and amortization expense on existing debt, borrowing to finance spending to offset the "new-old Japan" negative GDP effect, and more borrowing to pay the interest on new rounds of borrowing.

C. America's Role as "Consumer of Last Resort"

A particularly worrisome aspect of Japan's debt situation is the fact that it is worsening at a time when global growth, led by a record-setting US economy, is generally strong. The US role is critical. Just as it did during the Cold War years, the United States for the past decade has served as the importer-consumer of last resort. This role stabilized the global economy following the Tequila, Asian, and Russian crises, and has enabled many nations to preserve democratic stability and initiate needed reforms.

For the United States the role of global growth-engine has driven its trade and current account deficits to record levels, triggered a steady round of Federal Reserve rate increases to prevent inflation, and led to G7 calls for the US to increase savings in the face of an "unsustainable situation." If the Federal Reserve is successful in slowing the economy and calls for increased savings are heeded, import growth rates must decline. Thus, for Japan and Asia generally, a slowing of the American economy is a serious risk.

Asia's dependence on US imports has risen sharply since the mid-1990s. South Korea's US exports accounted for 21% of its total 1999 exports, up from 16% in 1996. China (including Hong Kong and Taiwan) is the most dependent large Asian nation on the US economy. Exports to the US in 1999 totaled almost 27% of all Chinese

exports, up from 17% in 1996.[5] A downturn in US Asian imports would depress the entire Asian trade matrix in which Japan is the key participant.

Japan is heavily dependent on trade growth. Data for March 2000 indicate Japan's trade surplus expanded 23% year-over-year in dollar terms. In volume terms, real exports climbed by 5.9% compared with the final three months of 1999 -- an annual rate of 25%. Imports rose by only 0.1%. The difference is giving Japan's GDP a significant boost. Japan's bilateral trade surplus with the United States is 40% higher than the same period a year ago and implies that its trade imbalance with the US has reached a record $66 billion in the past twelve months. With US nominal GDP growth running at almost 9% and real growth over 6%, these trade deficit numbers should not be surprising.

Japanese exports are a key supporting element of Japan's debt structure. Export related companies are leading income earners and taxpayers. A meaningful reduction in Japanese exports would have multiplier effects that would ripple through the already heavily stressed economy and seriously aggravate the debt problem.

In sum, if Federal Reserve and Treasury efforts are successful in slowing the US economy and increasing household savings rates, the merchandise trade deficit will decline. If the trade gap is cut merely back to its 1999 level, the net reduction could be as much as 30%. From a US perspective such a contraction would be regarded as moderate and salutary. From an Asian perspective, a 30% drop in exports would be difficult to accommodate. Directly and indirectly, we estimate Japanese GDP growth could be depressed a full percentage point.

D. The Looming Specter of a Public Sector "Big Bang-kruptcy"

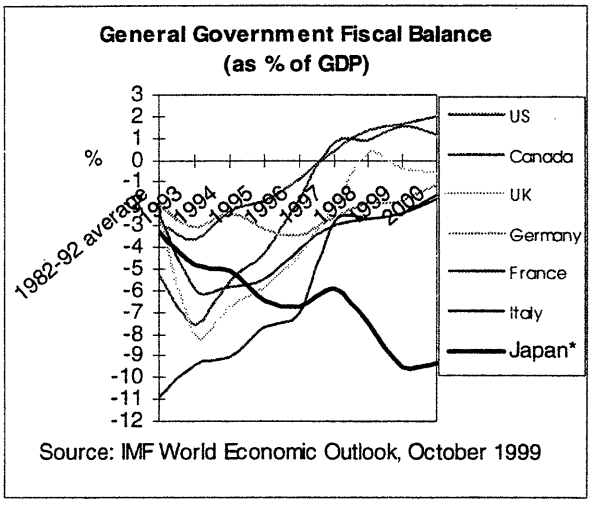
Even assuming prodigious growth in the new economy, our two-sector model makes it clear that the only way to avoid a Japanese GDP implosion is to massively increase "real water" fiscal spending. To accomplish this, however, will require the GOJ to capture and/or control a much larger share of Japan's huge private-sector savings surplus. Yet, "capture" in this regard means increasing taxes, something that is both politically difficult and macroeconomically dangerous; while "control" means rolling back asset-liability reforms that if delayed will only increase the risk of a collapse of public and private sector financial institutions and investment entities. Thus the Japanese LDP old guard is left with a very disturbing situation where events are beginning to evolve beyond their control.

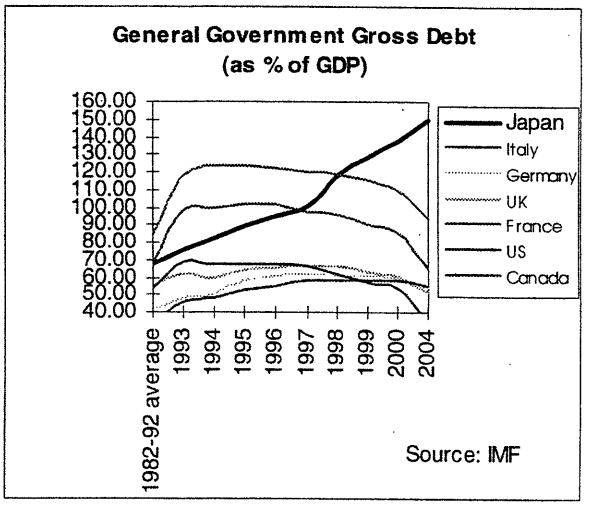
Given this dark backdrop, a truly historic downside risk is emerging in Japan today, posing a threat to global economic stability that makes crises in Mexico in 1994, Russia in 1995, and South East Asia in 1997 pale in comparison. To anticipate adverse market developments, one must be able to combine an exceptionally rigorous analysis of the underlying economic and financial data with a clear understanding of the "political priorities" of the ruling elites in government, finance, and industry. Understanding the likely trajectory of fund-flows is vital but not sufficient. Equally, it is essential to understand how certain elites may respond to adverse market developments and to be aware of their power to stifle what appear to be "logical economic outcomes." Before Japanese and non-Japanese policy-makers can assess how and when a public sector "big bang-kruptcy" could occur and prepare accordingly, the facts need to be laid out that show why, sadly, such a failure seems increasingly possible unless sweeping reforms are implemented in the near future.

[5] Morgan Stanley Dean Witter, Global Insights, "Fatal Attraction: Asia's Rising Export Dependence on the US", April 19, 2000.

II. The Facts

A. Central Government Debt Explosion





By the end of fiscal year 2000 Japan will have racked up the largest gross debt-load in the history of the OECD. Ministry of Finance data indicate that the combine sum of Japan's central and local government outstanding bonds and borrowing will approach 140% of GDP in FY2000 and the gross fiscal deficit will exceed 11% of GDP. By these standard sustainability measures, Japan now can only meaningfully be compared to third world nations like Albania.

CY	*Year-End Accumulated JGBs*	*Projected Total Central Govt. Debt)*	*Interest Rate Expense on JGBs*	*Implied Interest Rate on JGBs*	*Regional Government Debt (adjusted for double-counting)**	*National Debt per MOF Projection*	*Total Govt. Debt as % GDP per MOF estimate***	*Total Govt. Debt as % of GDP at current trajectory****
2000	364	518.66	10.58	2.91%	161	679.66	141.39%	141.00%
2001	390.51	556.44	11.56	2.96%	171	727.44	148.73%	152.00%
2002	419.93	598.36	12.9	3.07%	181	779.36	156.60%	166.00%
2003	452.52	644.80	14.51	3.21%	191	835.80	165.05%	180.56%
2004	485.3	691.50	15.83	3.26%	201	892.50	173.22%	195.69%
2005	515.31	734.27	17.45	3.39%	211	945.27	180.30%	211.42%
2006	544.74	776.20	19.11	3.51%	221	997.20	186.94%	227.77%
2007	571.99	815.03	20.74	3.63%	231	1046.03	192.72%	244.77%
2008	597.48	851.35	22.73	3.80%	241	1092.35	197.79%	262.44%
2009	626.25	892.34	24.36	3.89%	251	1143.34	203.47%	280.81%
2010	653.37	930.99	25.78	3.95%	261	1191.99	208.47%	299.90%
2011	680.53	969.69	27.02	3.97%	271	1240.69	213.26%	319.74%
2012	707.2	1007.69	28.09	3.97%	281	1288.69	217.70%	340.37%
2013	732.49	1043.73	29.12	3.98%	291	1334.73	221.60%	361.82%

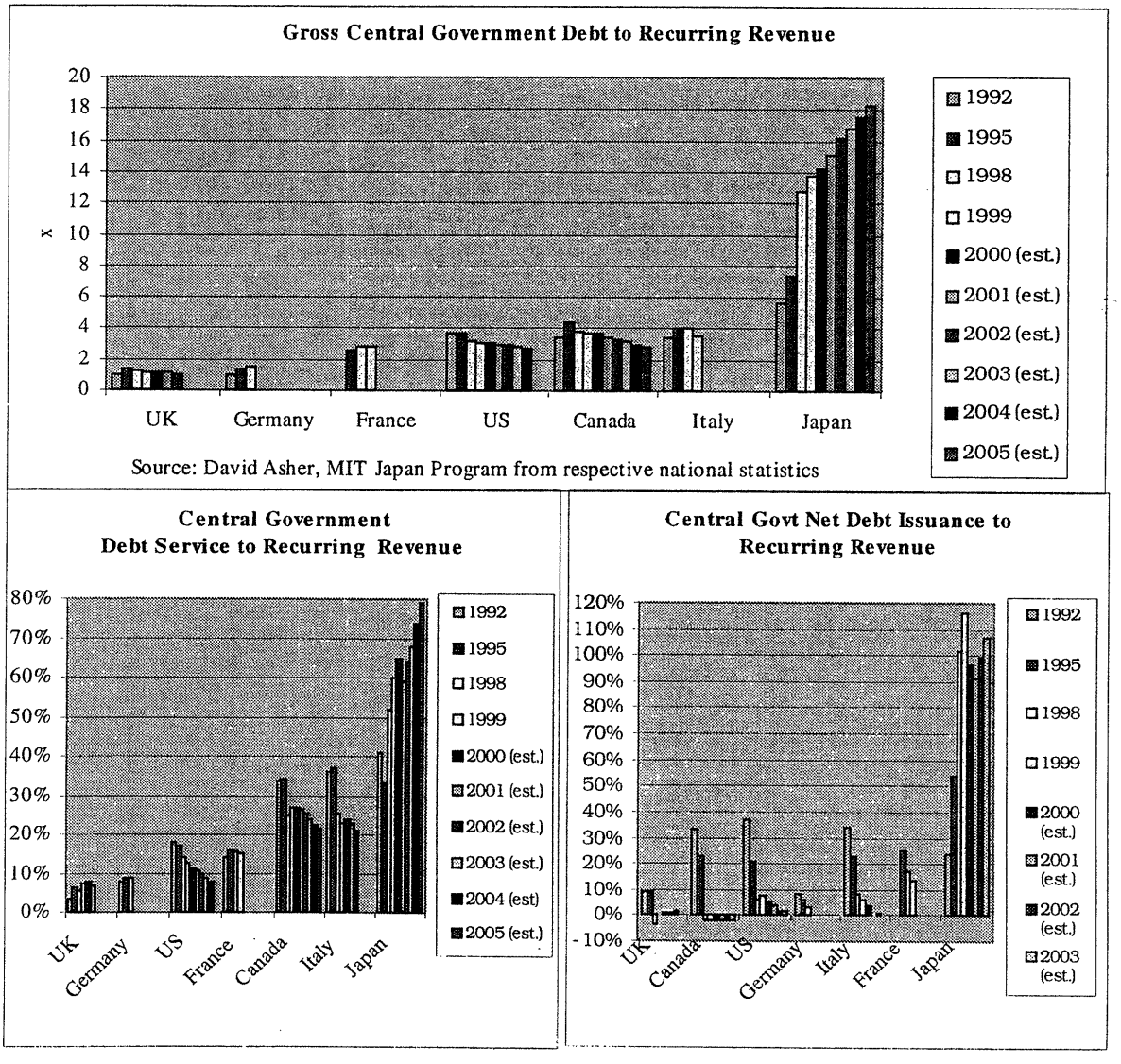
(¥ Trillion)
* Regional govt. debt is boldly assumed to expand at only a ¥10 trillion P.A. rate
**1.75% growth rate, 3.5% interest rate, deficit falling from 9.8% to 6% 9 (deficit extrapolated from MOF data).
***Average 8% primary deficit, .5% nominal growth rate, 4% rate of interest on outstanding debt
Source: MOF and Asher Associates calculations

Furthermore, there is no sign that the rate of debt accumulation will slow significantly even if the economic and fiscal outlook begins to improve. As the above long-term projection compiled by the MOF in January of 2000 reveals, even given almost impossibly optimistic assumptions of a 1.75% average growth rate, average interest rates on government debt of around 3.5%, and a gradually falling gross deficit (from 9% to 6% of GDP

between 2001-2013), the level of debt still will exceed 200% of GDP by the end of the decade. However, if the economy grows at only 0.5%, the deficit averages 8% of GDP, and the average cost of debt remains in line with the current 5-year average, the debt to GDP level instead will exceed 200% in FY2005 and touch 300% of GDP in FY2010. Of course, as we will discuss later on, even these more sober assumptions are probably far-too-optimistic given the likelihood that rates will shoot up in line with the expanding inflation/ default premium and since they do not include the annual 1.5-2% of GDP increase in the deficit the OECD calculates will be imposed by growing social security costs.

Nonetheless, in many ways the popularly cited debt to GDP figures significantly understate the severity of Japan's government financial situation. The following graphs comparatively illustrate Japan's government financial position on a "cash flow basis," i.e. in terms of the revenue available to service debt, the cost of servicing debt as a percentage of revenue, and the long term cost of refunding debt out of revenue. By these measures Japan faces what appears to be an unprecedented situation in modern economic history for an advanced industrialized nation in a time other than during or just after a war (and even in this regard there are almost no meaningful comparisons).

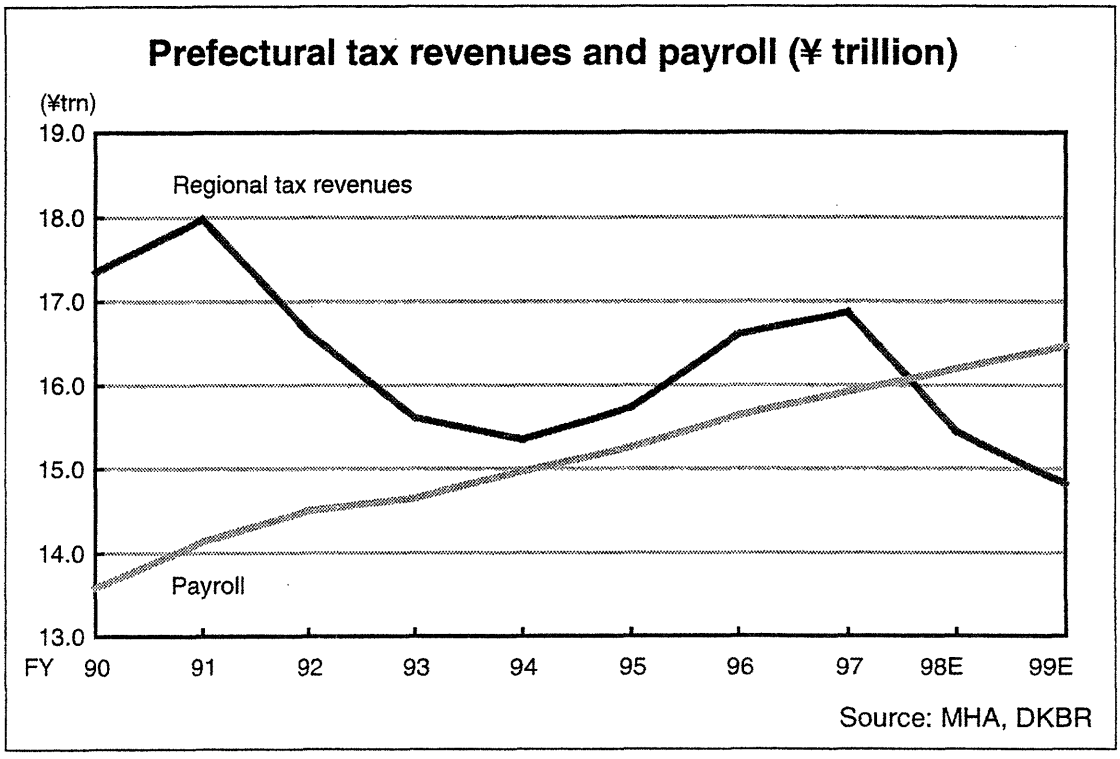
The Nail that Sticks Up Gets Hammered Down?



Based on Japanese official projections, in FY2000 over 65% of central government retained tax revenue (after mandatory tax transfers to regional governments) will go to debt service, the central government will issue 100% more debt than it retains in revenue, and the long term debt to revenue ratio will exceed 1,400%. By these measures, Japan's government fiscal situation today is over four times worse than that in the US and more than three times as bad as that found in the debt ridden Italian state sector at its worst point in the early 90s. Moreover, the gap between Japan and the other G7 countries (which have adopted fiscally prudent policies) is projected to widen dramatically in the coming three years. This begs the question, when will the fiscal "nail that sticks up" get "hammered down?" After all, if a company faced a similar financial situation, undoubtedly it would be on the verge of bankruptcy if not already declared insolvent, not accorded a AAA credit rating.

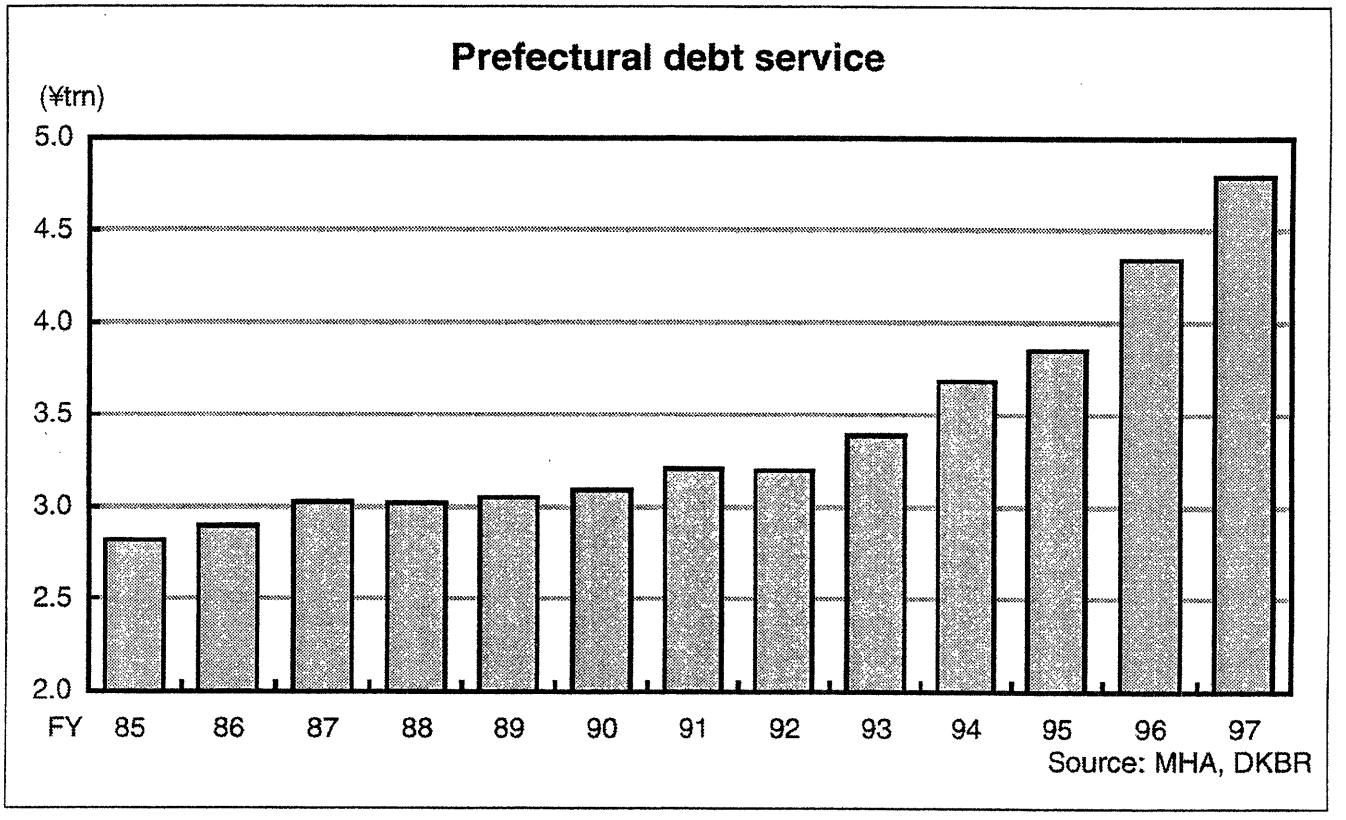
B. Prefectures Face Financial Crisis

The perilous state of an increasingly large number of regional and municipal governments complicates the central government's considerable financial problems. Japan's 47 prefectural governments had a combined budget deficit of ¥87.2 billion in fiscal 1998. This was the first deficit in 20 years and the second largest ever (they had a combined surplus of ¥145 billion in FY97). The prefectural governments in the worst financial shape also happen to be the country's largest with Tokyo recording a ¥106.7 billion deficit, the first red ink in 18 years, and Kanagawa (within which Yokohama is located) sinking ¥30.3 billion into deficit, the first shortfall in 23 years. In addition, the trouble-rife Osaka government plunged into the red for the first time in 17 years, with a deficit of ¥12 billion while the Aichi prefectural government had a deficit of ¥22.8 billion, its first in the postwar era.[6] Furthermore, even though interest rates have fallen precipitously the cost of debt service as a percentage of revenue has escalated markedly. Regional governments allocated 15.6% of their disposable revenue to redeem bonds and pay interest in fiscal 1998, the highest percentage ever. As the following chart shows Japan's prefectural governments are no longer even able to cover payroll expenses out of tax revenue.



[6] See "Japan Prefectures Rack Up 87.2 billion Yen Deficit in 1998," *Nihon Keizai Shimbun*, January 15, 2000

Although these deficit and debt service numbers on the surface pale in comparison with those for the central government, given the terms of Japan's local finance law (which was designed carefully to prevent prefectural government's from running deficits in the first place) they are even more deleterious. For example if a prefecture's debt exceeds 5% of its yearly budgeted expenditure it must be designated as a "fiscal restructuring municipality." This condition, essentially a legal declaration of bankruptcy, forces local prefectures to abide by austerity measures dictated by the central government.[7] As many as half of the prefectures in Japan currently are on the brink of breaching this limitation. For example, if Tokyo's deficit were to rise to over ¥340 billion (from the current ¥106 billion) it would lose its financial autonomy. Even worse, if Kanagawa's deficit rises by another ¥20 billion or if Aichi falls ¥30 billion more into the red, they would be forced into receivership in FY2000 (although there has been some talk of loosening this threshold ratio, the American credit rating agencies reportedly have warned the Japanese government that such a move would warrant further downgrading).



The fact that so many large prefectures have dropped into fiscal deficit and face the prospect of nationalization is all the more remarkable since the central government extensively subsidizes regional governments with "revenue disbursements" and "Local Tax Allocation Special Account" grants.[8] In FY99 revenue disbursements amounted to over ¥13.5 trillion (largely to support joint public works projects, disaster relief, and compulsory education). Meanwhile, special account grants topped ¥8.5 trillion.

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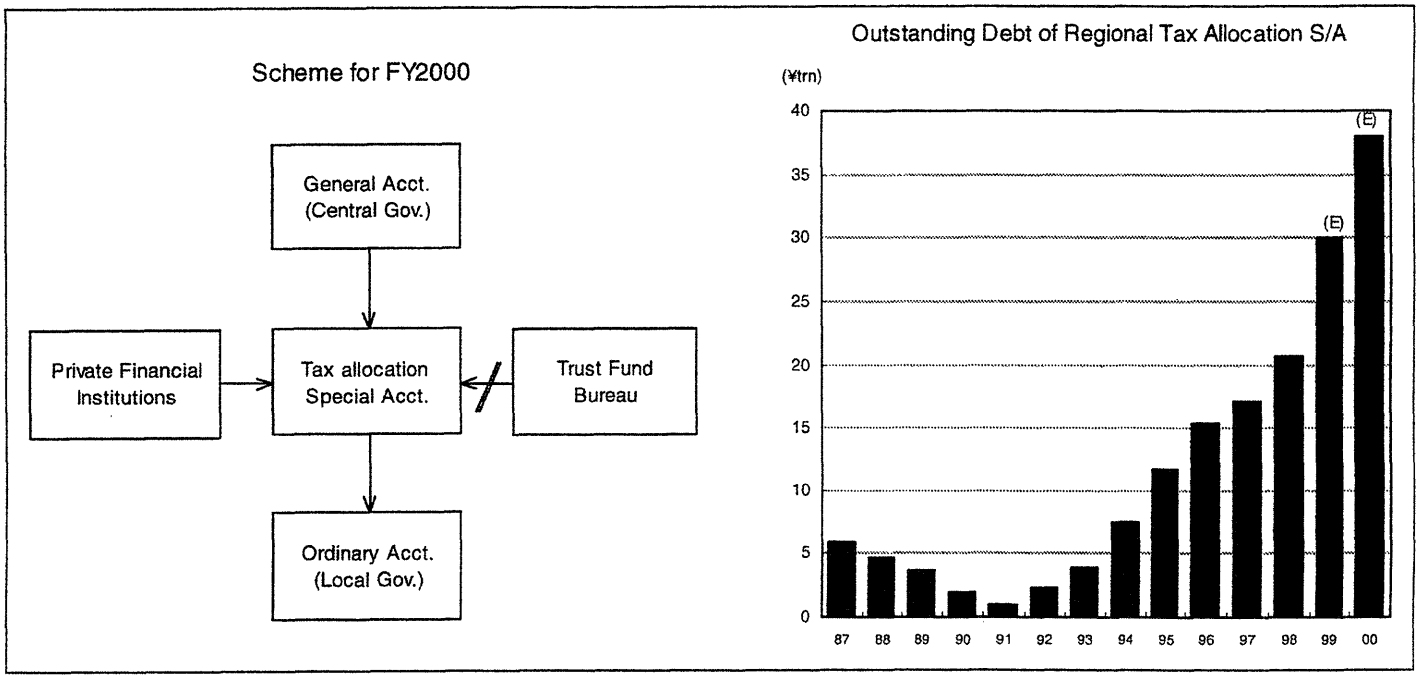
[7] Even if a regional government is able to avoid being put into "custodial care" of the national government other "emergency limitations" can apply such as if its debt service ratio (i.e. cost of debt service as % of revenue) exceeds 20% for three consecutive years. If this occurs the central government is obligated to step forward and force cut backs in expenditure and bond issuance in order to "restore fiscal equilibrium."

[8] According to the MoF's 1999 "Budget in Brief", the Local Tax Allocation system was designed to "ensure equalization of the local government revenues and to guarantee revenues of local authorities as a whole." As mentioned earlier, the central government also transfers about 1/3 of the tax revenue it collects each year to the prefectures. This is the "tax" part of the Local Tax Allocation account. These compulsory transfers of recurring revenue (the so-called "regular allocation tax") are based on a fixed formula of 32% of total yields of the income tax, corporation tax, and liquor tax as well as 29.5% of the consumption tax and 25% of the tobacco tax.
As a "beneficial service for the prefectures" the central government also collects what is known as the "Local Transfer Tax" comprised of the local road tax, ½ of the petroleum gas tax, 2/13 of the aviation fuel tax, ¼ of the motor vehicle tonnage tax, and ¼ of the special tonnage tax. This money also goes into the Local Tax Allocation Special Account (but, unlike the "regular tax allocation," does not show up as tax revenue on the books of the general account – *ippan kaikei* – of the central government).

A key point to understand about these so-called "tax grants" is that they are not financed by tax revenue at all but by borrowing from the Trust Fund Bureau or – from FY2000 onward – from banks (and thus directly add to the Japanese national debt). Another point to remember is that they are explicitly designated to meet regional governments' revenue shortfall. Nonetheless in FY99 they, too, have fallen far short. It is because of this fact that across Japan prefectural governments – with Tokyo in the lead – are planning to impose special taxes on the gross operating profits of banks. Banks traditionally have been the largest corporate income tax payers in Japan but have "avoided" paying taxes at their former high rate in recent years as a result of their huge write-offs of bad loans. Thus, Tokyo Mayor Ishihara Shintaro's bank tax plan is essentially a retaliatory attack (*hofuku kogeki*) against the central government's unwillingness to boost regional tax allocation. Ironically – and making matters all the more complicated -- these very city banks to be taxed under the Tokyo plan are being asked by the MOF to make special loans in FY2000 to fund the ¥8 trillion in subsidy allocation to the prefectures (Tokyo included). Thus, the enraged city banks potentially could pull away from this subsidy loan deal leaving the central government to issue an additional ¥8 trillion in bonds or even declare its own fiscal emergency.[9]



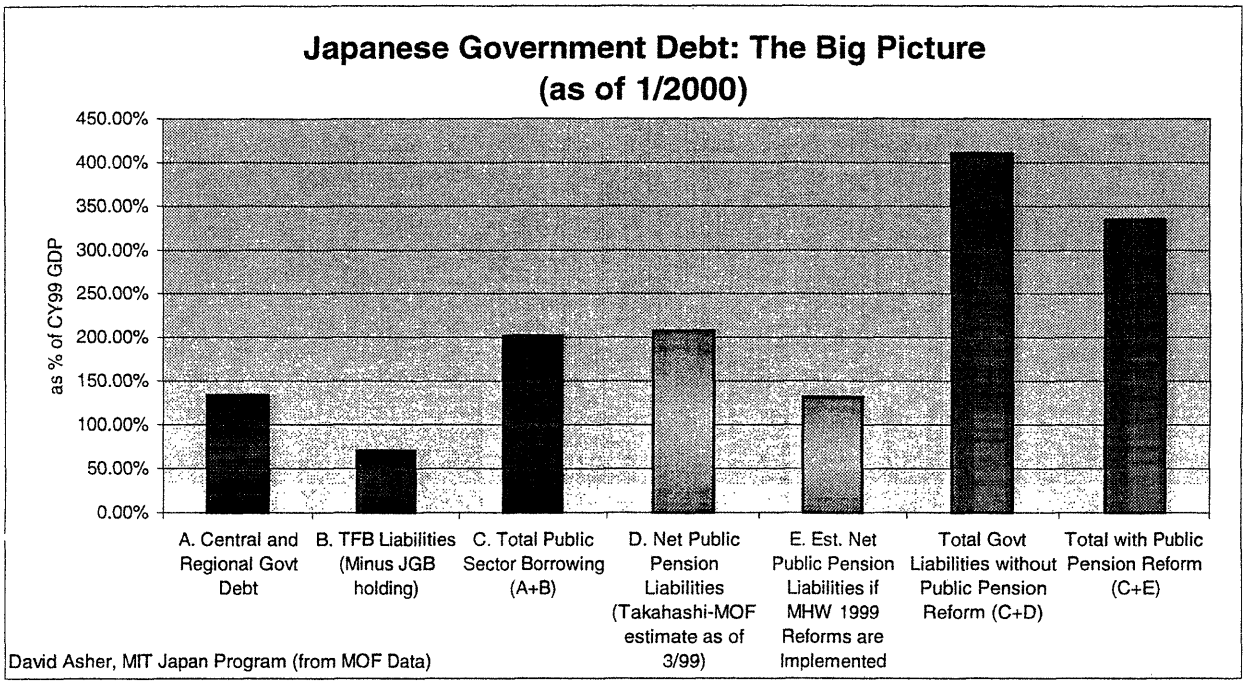
Source: Dresdner Kleinwort Benson

C. The FILP: Uncertain Solvency and National Debt Nonetheless

Still lurking off the balance sheet of the national government is the 70% of GDP in Trust Fund Bureau (TFB) borrowing to fund the Fiscal Investment and Loan Program (FILP). Whether this FILP money is invested wisely or foolishly, the government technically borrows it and it ultimately must be repaid by the government to the people whose postal deposits, life insurance plans, and pension funds the government draws on. Theoretically, it should be added to the national debt. After all, it is not a true "contingent liability" as is frequently portrayed. Despite the deceptive way the Japanese government accounts for this borrowing, debt is debt, pure and simple. The only contingent element is what degree of it is bad. Consolidating the liabilities of the Trust Fund Bureau

[9] The way most leading Japanese finance officials apparently see it, the idea that the banks would back away from buying the regional subsidy bonds is "very hypothetical" and unlikely since the banks are "extremely exposed to the government bond market themselves" (in FY99 banks absorbed over ½ of the JGB issuance and over 55% of banks operating profit is estimated currently to come from bond trading). Moreover, the ¥8 trillion in lending to the special account is in some ways the banks way of "recycling" the emergency fund injections they received from the government in FY98 back into the public sector (i.e. "a way of saying thank you"). The question, nonetheless, is how much financial punishment the banks will be willing to endure in terms of loss of profits from the Ishihara operating revenue tax plan before they decide to break out of the MOF's government bond market "convoy system?"

with the gross sum of national debt as of the 3Q of FY 99 brings Japan's public sector debt to over 200% of GDP (an amount that gets much bigger if unfunded public pension liabilities are added in).



Nonetheless, an increasingly large part of the gross public sector debt appears to be bad. In fact it is very likely that the bad debts of the public sector could be larger than the amount of problem loans thus far acknowledged by the banks. This estimate is based on the reasonable assumption that the government would be very unlikely to have a default rate on its investments and loans lower than that found in the private sector. After all, not only do the FILP funded organizations like the Housing Loan Corporation directly compete with the private sector in many areas, frequently undercutting the margins of the banks, the FILP is the major source of high risk, low return financing for the government's public works budget. For it not to be in worse financial shape than the banks would be a true Japanese miracle. Yet, unbelievably, the MOF claims that only around 1% of FILP loans are in trouble.

TOO GOOD TO BE TRUE –
BAD LOAN RATES IN THE PUBLIC FINANCIAL SECTOR (FY98)

	Bad Loans (¥bn) (A)	Total Lending (¥bn) (B)	Bad Loan Ratio (%) (A/B)
People's Finance Corporation	216	8,906	2.4
Housing Loan Corporation	216	70,106	0.3
Small Loan Corporation	201	7,249	2.8
Agriculture Forestry and Fisheries Finance Corporation	93	4,490	2.1
Export-Import Bank of Japan	91	9,180	1
Japan Development Bank	46	15,834	0.3
Hokkaido Tohoku Development Finance Corporation	26	1,468	1.7
Okinawa Development Finance Corporation	24	1,629	1.5
Environmental Sanitation Business Financing Corporation	23	1,093	2.1
TOTAL	**935**	**119,955**	**0.8**

Source: MOF

Despite MOF denials that many problem loans exist, one can make an educated guess about the exact size of the bad debts in the public sector. In the fall of 1998 Robert Feldman, Morgan-Stanley's Chief Economist in Tokyo, wrote a compelling analysis of the FILP that continues to be very relevant. Feldman divides the FILP balance sheet up between claims on the private sector (about ¥180 trillion) and claims on the public sector (around ¥200 trillion).[10] He notes:

> Given the problems regarding the private financial system experience with asset quality, it would be imprudent to consider all of these assets held in the public sector to be sound. For example, for the main 19 banks, about ¥50 trillion of the total lending of ¥400 trillion is considered impaired to some degree, by the banks' own self-assessment. (The true figure could easily be double this amount.) If the same 1/8 (or even 1/4!) of public sector loans to the private sector were considered non-performing, the government's net debt position would seem considerably worse.

Public Sector Balance Sheet

	Assets A	Liabilities B	Total Capital C	Cushion Ratio C/A	Debt/Equity C/B
Special Accounts	61,370	49,210	12,097	19.7%	24.6%
Public Lenders	144,477	139,960	4,518	3.1%	3.2%
Public Corporations	249,909	252,638	-2,729	-1.1%	-1.1%
Known Problems	17,091	31,940	-14,849	--	--
JNR Settlement	3,693	24,720	-21,027	--	--
OECF	9,175	4,535	4,641	50.6%	102.3%
Petroleum Corp.	4,223	2,685	1,538	36.4%	57.3%
Ex. Problems	232,619	220,698	12,121	5.2%	5.5%
Total	671,712	661,726	9,986	**1.5%**	1.5%
Total Ex. Problems	654,621	629,786	24,835	**3.8%**	3.9%

Source: MSDW-Tokyo, September 1998

Feldman then evaluates how bad the public sector's problems could be. The table above depicts the public sector's balance sheet, circa 1996. Among the three categories of borrowers – the special accounts of the government, public lending institutions, and public corporations – total capital is only high for the special accounts. Nonetheless, there is strong anecdotal evidence that even many of these special accounts are impaired by hidden liabilities. For the other two categories, though, the problem is plainly evident. He explains,

> Even excluding the most prominent known problem corporations as of the time of this data (1996), the cushion ratio (= capital / assets) for public corporations was only about 5%. That is, if anything more than 5% of their assets prove unrecoverable, then the public corporations would be (as a group) in a negative capital position. A 20% unrecoverable rate would mean ¥46 trillion of write-offs, against only ¥12 trillion of remaining capital. (And this assumes that the known problem corporations are cleaned up without resorting to use of the capital of the remaining ones. In the case of the Overseas Economic Cooperation Fund, the clean up was handled by merging the institution with the Japan Export Import Bank. This "solution" only shifted the bad debts to another part of the government sector.)

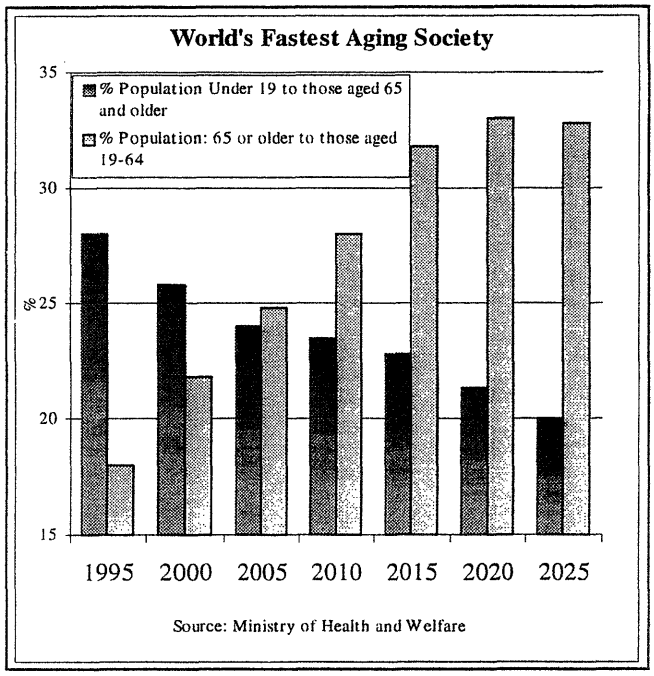
If the same 20% bad debt ratio is applied to the entire set of public sector funded entities (excluding the known problem corporations), the level is much greater. Total public finance assets, excluding the known

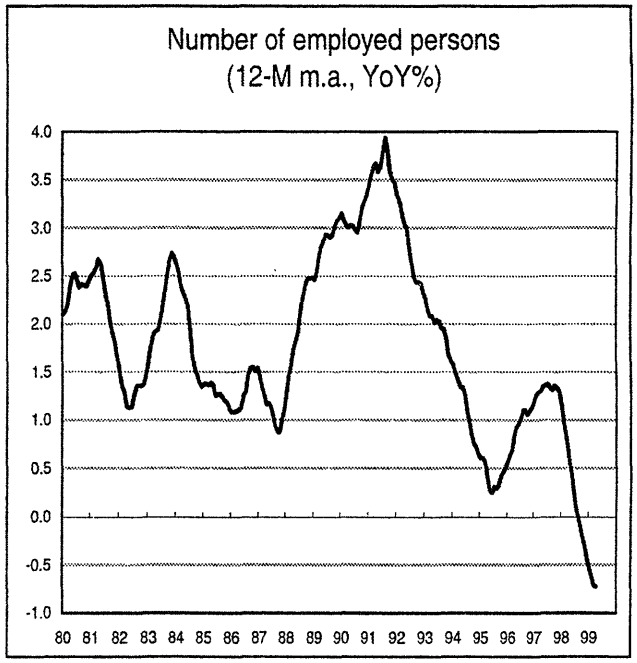
[10] See Robert Feldman, "Gross Debt is Better, But Not Good Enough," Morgan Stanley- Japan, September 5, 1998

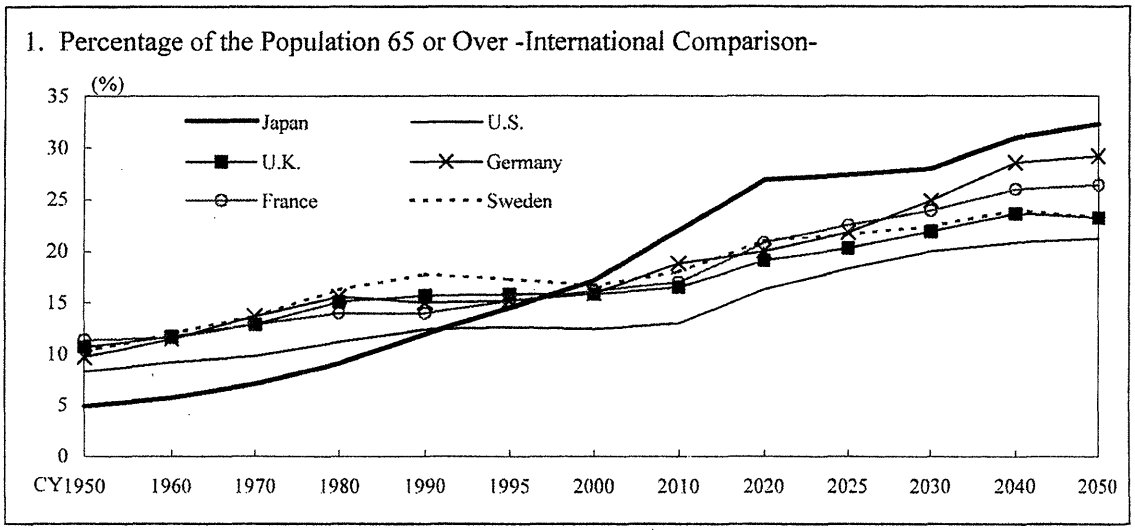
problem corporations, are ¥654 trillion. A 20% non-recovery rate would mean ¥131 trillion in losses need to be absorbed, against only ¥24 trillion of capital.

D. Demography and Social Security Deepen the Problem

Nonetheless, ballooning gross liabilities and public sector bad debt are hardly the only major challenge facing the Japanese government. Equally significant are Japan's adversely shifting demographic structure and its massively underfunded social security system. The Japanese working population is already contracting by .6% per year and this rate will accelerate from 2005 onward. By 2020 there will be two working adults for every elderly person – versus over four today – and 25% of the population will be over 65 – versus 14.5% today.







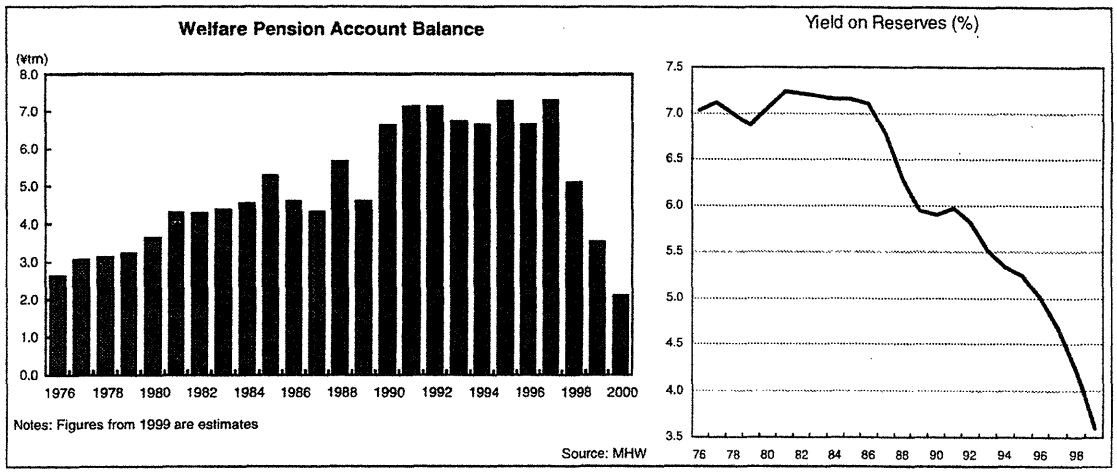
The collision of demography and public pensions is not a long-term problem as in the US or most European countries. It is a problem plaguing Japanese public finance today. Even with considerable aid from state revenue transfer, the main Employee's Welfare Pension Insurance (EPI) account (the largest component of social security in Japan) is likely to sink fully into the red in FY 2001 due to sharply declining returns on investment and

accelerating benefit expenditures. In fact all of the other social security accounts except the EPI have faced substantial working deficits for many years (with tax revenue filling the growing gap).

Japanese Social Security: Running Hard into the Red

	1970-74	1975-79	1980-84	1985-89	1990-94	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
												Projection				
Balance	0.94	-0.44	-2.28	-3.89	-3.57	-7.09	-8.37	-8.14	-8.92	-9.44	-9.97	-10.49	-11.02	-11.54	-12.07	12.59
GDP Ratio, per cent	0.92	-0.23	-0.83	-1.08	-0.77	-1.45	-1.66	-1.61	-1.73	-1.81	-1.89	-1.97	-2.05	-2.13	-2.21	-2.29

Source: OECD and authors' estimates based on strait-line projection all public pension accounts. Note: Tax subsidy contributions are excluded.



Source: Dresdner Kleinwort Benson

Welfare Pension Special Account Balance (Yen billion.)

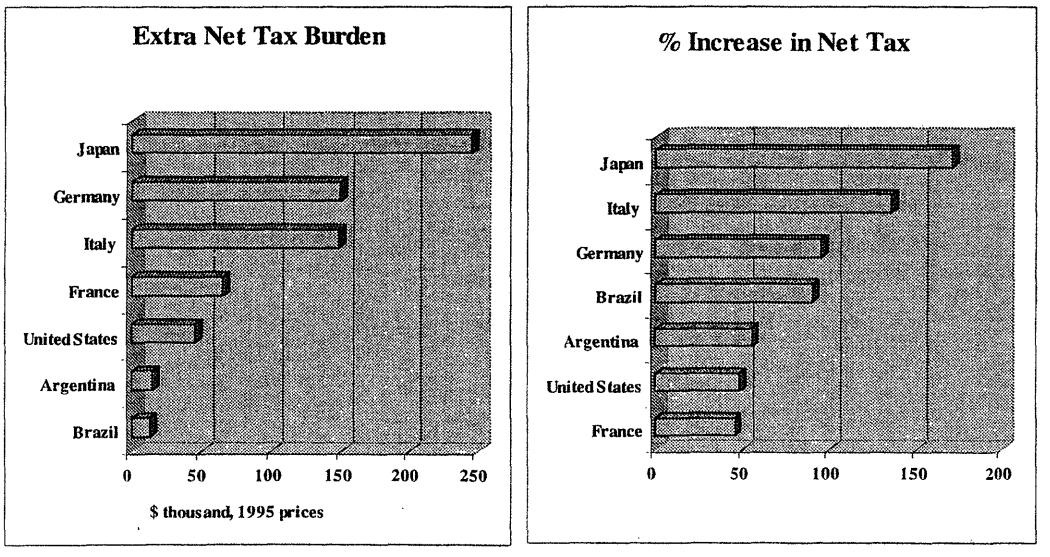
(Estimate prepared by Kunji Okue)

Fiscal Year	Revenue Total	Net Total	Contribution Revenue	Gen. Acct. Allowance	Investment Revenue	Expenditure Total	Net Total	Pension Payment	Others	Balance	Reserve	Investment Rate of Return
1976	4,041	4,032	2,857	251	924	1,408	1,399	1,365	34	**2,633**	14,916	7.03
1977	4,959	4,947	3,458	357	1,132	1,895	1,883	1,845	38	**3,064**	17,974	7.12
1978	5,476	5,459	3,718	420	1,322	2,339	2,321	2,271	50	**3,138**	21,108	6.99
1979	5,982	5,964	3,988	464	1,511	2,735	2,717	2,656	61	**3,247**	24,352	6.87
1980	7,071	7,058	4,701	573	1,785	3,437	3,424	3,252	173	**3,634**	27,984	7.05
1981	8,425	8,413	5,628	677	2,109	4,127	4,115	3,922	193	**4,298**	32,280	7.24
1982	8,990	8,975	5,999	577	2,400	4,705	4,690	4,489	201	**4,285**	36,563	7.21
1983	9,617	9,603	6,291	620	2,692	5,237	5,223	5,010	213	**4,380**	40,942	7.19
1984	10,334	10,323	6,576	755	2,992	5,790	5,778	5,528	250	**4,545**	45,484	7.16
1985	11,795	11,778	7,505	944	3,329	6,491	6,475	6,227	248	**5,303**	50,783	7.16
1986	15,359	13,862	8,602	1,620	3,641	10,855	9,259	7,621	1,639	**4,603**	55,281	7.11
1987	16,550	14,379	8,914	1,677	3,788	12,227	10,056	8,236	1,820	**4,323**	59,964	6.77
1988	18,247	16,272	9,451	2,995	3,827	12,597	10,622	8,768	1,854	**5,650**	65,613	6.29
1989	17,984	16,137	10,491	1,730	3,916	13,379	11,532	9,628	1,904	**4,605**	70,218	5.94
1990	26,101	19,449	13,051	2,183	4,215	19,458	12,805	10,503	2,302	**6,644**	76,861	5.90
1991	29,558	21,293	14,214	2,414	4,665	22,421	14,156	11,323	2,833	**7,137**	83,997	5.97
1992	31,726	22,559	14,955	2,648	4,955	24,589	15,422	12,146	3,276	**7,137**	91,134	5.82
1993	33,034	23,305	15,348	2,880	5,077	26,296	16,568	12,906	3,663	**6,737**	97,871	5.52
1994	34,772	24,626	16,340	3,024	5,262	28,109	17,964	13,828	4,137	**6,662**	104,532	5.34
1995	38,124	27,096	18,693	2,876	5,527	30,841	19,813	15,041	4,772	**7,283**	111,811	5.24
1996	39,374	27,544	19,371	2,567	5,606	32,723	20,893	15,689	5,204	**6,651**	118,458	4.99
1997	33,226	29,010	20,683	2,763	5,564	25,925	21,709	17,290	4,419	**7,301**	125,756	4.70
1998	N.A.	28,661	20,615	2,830	5,216	N.A.	24,795	18,282	6,513	**5,116**	130,872	4.15
1999	32,414	29,400	20,986	3,636	4,778	28,873	25,860	19,067	6,793	**3,540**	134,412	3.65
2000	**31,685**	**29,066**	**20,955**	**3,721**	**4,390**	**29,656**	**26,972**	**19,590**	**7,382**	**2,094**	**136,506**	**3.27**
2001	30,449	27,949	20,491	3,636	3,822	30,659	28,159	20,452	7,707	**-210**	136,297	2.80
2002	30389	27,889	20,437	3,636	3,816	31,926	29,426	21,372	8,054	**-1,537**	134,760	2.80
2003	30308	27,808	20,399	3,636	3,773	33,250	30,750	22,334	8,416	**-2,942**	131,818	2.80
2004	30138	27,638	20,311	3,636	3,691	34,634	32,134	23,339	8,795	**-4,496**	127,322	2.80
2005	29934	27,434	20,233	3,636	3,565	36,080	33,580	24,389	9,190	**-6,146**	121,177	2.80

Note: Net total excludes some redundant associated with pension accounts transfers, and is the sum of number shown respectively for revenue and expenditure.
Total revenue and expenditure for FY1998 is not disclosed yet while its net revenue and expenditure was disclosed.
Numbers from FY1999 to FY2000 are budgeted numbers. From FY2001 to FY2005 are DKBR's estimates based on the contribution rate remaining static.

To keep up an appearance of long-term solvency, the Ministry of Health and Welfare plans to boost transfers from the central government budget from 1/3 to ½ of "basic" public pension spending from 2004 onward. Unfortunately, this step will only imperil the government's financial stability further – by depriving it of precious tax revenue and hence forcing it to issue even more bonds – while doing nothing to remedy the underlying insufficiency of public pension premiums compared to the rapidly growing burden of mandatory expenditure.[11] Moreover, even under the recently passed "reform plan," from 2001-2004 the entire pension system is likely to be in "temporary deficit" despite the current 1/3 of expenditure subsidy.[12] This will necessitate substantial JGB sales or JGB issuance to cover the shortfall (how substantial is hard to calculate given the limited amount of data available but it could exceed ¥2 trillion per year according to some sources). Covering this deficit would *add* to the 2% of GDP annual increased financing burden that expanded public health and welfare spending will impose on the government budget in years ahead. In light of the inability of tax revenue -- as things stand -- to cover the costs of even ½ of entitlement spending after debt service costs are provisioned, obviously the implications of accelerating social security shortfalls on the government bond market could be huge (and have largely been ignored by Japan market watchers).

Even if this near-term disaster-in-the-making is somehow avoided, without large-scale and painful reform, the long-term situation will remain dire. In fact, according to one recent study, the net level of underfunding in the public pension accounts could be as high as ¥1,026 trillion (over 200%of GDP).[13] The potential future impact of public pension underfunding on the real economy is clearly illustrated in a report done for the US National Bureau of Economic Research by economists Laurence Kotlikoff and Willi Leibritz. Kotlikoff and Leibritz compiled "generational accounts" for a number of leading countries, including Japan. The concept of generational accounting is based on the assumption that a future generation will have to pay for the unfunded pension liabilities and accumulated national debt that the present generation leaves behind. The two authors tried to "measure the present value of net future taxes (that is, taxes to be paid minus benefits, such as pensions, to be received) for individuals of different ages over their remaining lifetimes and, collectively, for future generations."[14]



Source: "An International Comparison of Generational Accounts," NBER Working Paper 6447, March 1998

[11] See "Pension Reform Won't Fix Big Problems," *Nihon Keizai Shimbun*, (Internet edition), 3/24/2000

[12] Our initial analysis of the recently passed public pension reform law does not lead us to believe that the 5% reduction in earnings related benefits for the EPI will be able to offset the declining investment returns and increased expenditures related to the growing number of workers over age 60 claiming partial benefits before the official retirement age of 65. Essentially it will merely maintain the current downward sloping trajectory in the system until 2004 when the government subsidy is boosted.

[13] For detailed analysis and estimates, see Yoichi Takahashi, *On the Japanese Pension System,* Center for International Studies, Princeton University, April 1999. In an article in the July 1999 issue of *Zaikai* magazine he increased his estimate of unfunded pension liabilities to ¥1,026 from the ¥970 in the Princeton paper.

[14] See "The Perils of Privatization," *The Economist*, August 15, 1998.

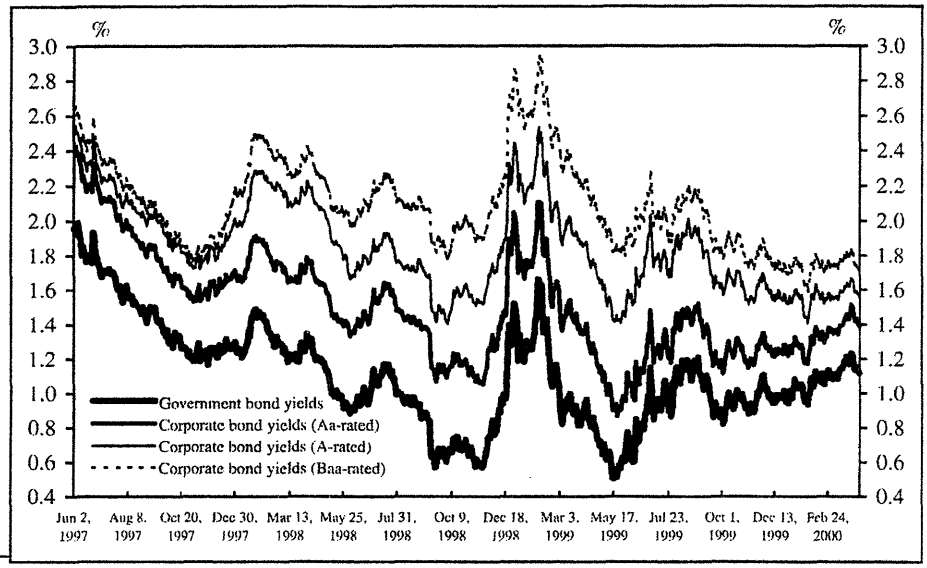
The results of this exercise in cost projection are stunning. Future Americans are likely to be saddled with a tax burden that is 50% higher than those born today while Germans of the 21st century face paying 90% more net taxes over the course of their lives. Yet, the projections for America and Germany are inconsequential alongside those for Japanese. Based on relatively conservative fiscal, demographic, and social security funding assumptions, future Japanese may have to pay well over 160% more in net taxes than those in the contemporary! Indeed, to fulfill promised pension benefits and reestablish sustainable fiscal equilibrium, the national burden rate -- the combined sum of tax and pension premiums as a percent of income -- could have to rise from around 37% today to over 75% in the next two decades. Such a massive tax hike seems almost impossible for any democratic society to bear, especially one where the working population is in severe decline. The longer Japan waits to implement reform (for example, by radically cutting benefits to pensioners and raising the age of retirement), the greater the cost to society, both today and for generations to come.

E. No More Room for Fiscal Expansion

Despite the skyrocketing debt and deficit, some economists continue to argue that the Japanese government still has considerable room for fiscal maneuvering.[15] In defense of such a view they make a number of arguments. For example, one frequently hears that the extraordinary strength of the Japanese bond market shows that the risks of fiscal problems are overplayed. Alternatively, optimists cite figures showing that on a *net* basis (i.e. after government and social security financial assets are counted against accumulated gross liabilities) Japan has the lowest level of debt to GDP in the G-7. They also argue that Japan's $1 trillion in net overseas assets and $6 trillion in savings provides a reliable cushion. Finally we are told that the success of Italy, Ireland, and Canada in the last 15 years or Britain and the US after WWII in dealing with their fiscal imbalances shows that Japan's situation is not nearly as dire as is portrayed in the media by certain pessimistic commentators. Yet, with veritably no exception, such arguments run counter to reason.

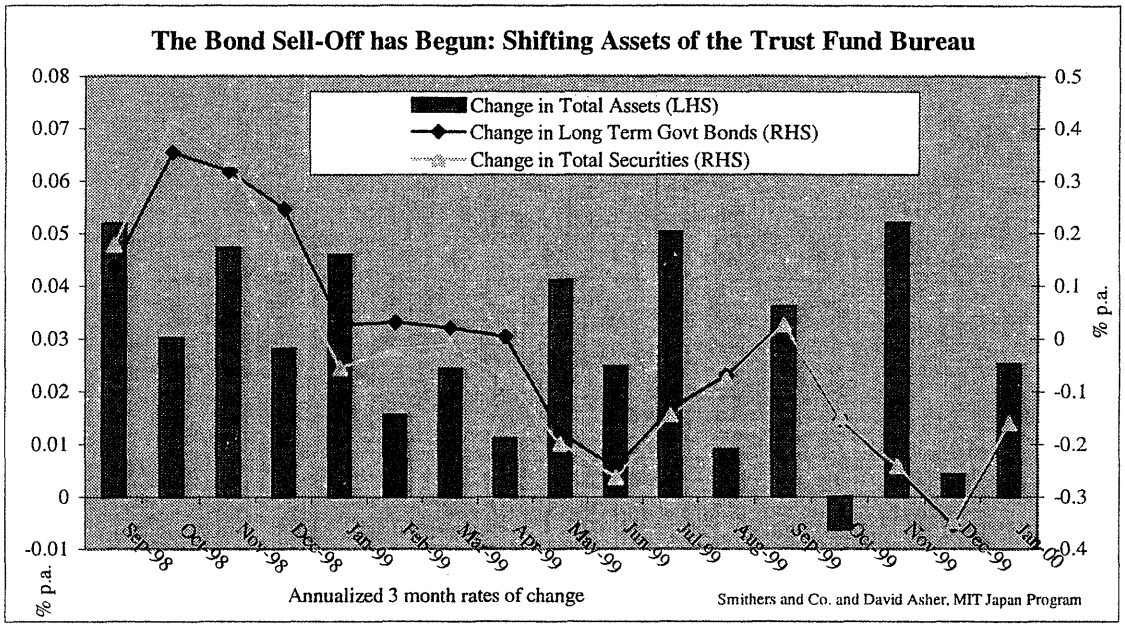
1. Bond Prices Reflect Public Sector PKO more than Economic Fundamentals

Strength in the JGB market in the face of escalating debt and deficits is hardly an accurate indicator of underlying government bond risk in Japan. Despite all the talk about high "real rates" or "non-inflationary growth recovery prospects" justifying an incredibly small yield-spread, the bottom line is that there is no adequate way to explain the JGB market's behavior from a purely economic perspective. In fact, by global standards of liquidity and transparency, the Japanese Government Bond "market" hardly functions as a "market" at all. In essence the participants in the primary and secondary bond markets have long played a game of "follow-the-leader up the pyramid" with the game's leader being the MOF's Trust Fund Bureau (aided increasingly by the BOJ).



[15] For a report highly representative of this view, see Peter Morgan, "Japanese Government Debt: Myth Perceptions," HSBC Economics, June 14, 1999

The central role of the TFB in this pyramid game was revealed to the uninitiated in early October of 1998 when the MOF announced that it was backing out of participation in JGB auctions. For a few months thereafter yields shot skyward (rising by over 100 basis points) until the Finance Minster Miyazawa reversed rhetorical course and announced in February 99' that the TFB would continue to buy new bonds on a "temporary basis." On the basis of this episode it objectively can be said that the only "rational expectations" guiding the Japanese Government Bond market are political expectations that that the TFB always will be there to stop prices from sliding. Investors are buying JGBs in view of 'Price Keeping Operations' (PKO) much more than underlying economic and supply-demand fundamentals.



Fiscal Investment and Loan Program (Yen Billion)

Fiscal Year	1999	Change	Ratio	2000	Change	Ratio
Expenditures						
General Program	39,349	7.4%	74.4%	37,466	-4.8%	85.8%
Fund Management	13,550	1.9%	25.6%	6,210	-54.2%	14.2%
Bond Subscription	0	-100.0%	0.0%	0	0.0%	0.0%
Total	52,899	-8.4%	100.0%	43,676	-17.4%	100.0%
Revenues						
Trust Fund Bureau	43,716	-9.1%	82.6%	33,305	-23.8%	76.3%
Postal Savings	11,500	0.9%	21.7%	0	-100.0%	0.0%
Public Pensions	4,310	-28.2%	8.1%	2,720	-36.9%	6.2%
Fund Repaid	27,906	-9.1%	52.8%	30,585	9.6%	70.0%
Postal Insurance	6,580	-7.0%	12.4%	6,380	-3.0%	14.6%
Govt Guaranteed Bonds	2,500	0.0%	4.7%	3,881	55.2%	8.9%
Special Account	104	64.4%	0.2%	110	5.8%	0.3%
Total	52,899	-8.4%	100.0%	43,676	-17.4%	100.0%

Trust Fund Management (Yen Billion)

Fiscal Year		1999	2000
Postal Savings S/A			
	Budget Allocation	8,500	2,000
	Redemptions	3,000	3,500
	Outstanding	57,304	55,804
Pension Welfare Corp.			
	Budget Allocation	3,050	2,710
	Redemptions	2,050	2,040
	Outstanding	24,511	25,181
Postal Insurance S/A			
	Budget Allocation	2,000	1,500
	Redemptions	0	0
	Outstanding	15,332	16,832
Total			
	Budget Allocation	13,550	6,210
	Redemptions	5,050	5,540
	Outstanding	97,147	97,817

Source: DKB and MOF

Nonetheless, despite its continued appearances at high profile JGB auctions, overall in the last 24 months the Trust Fund Bureau has become a major net seller of accumulated bonds in its portfolio. These sales are a result of preparations for an exodus of Post Office 10-year CD withdrawals in FY200-2001, declining investment yields, and the establishment of clearer asset-liability management criteria. Making matters worse, the TFB's withdrawal from the bond market is set to sharply accelerate in FY2000 with its "fund management allocation" (i.e. the

money that is newly invested in bonds and stocks) falling by a whopping 54.2% year on year. This does not augur well for the maintenance of the status-quo-ante vis-à-vis Japan's "bond buying syndicate." Thus, suddenly now that banks and life insurers have become the largest net buyers and holders of government paper, any factors that diminish their willingness to absorb issuance or hold JGBs are bound to push yields higher (even if stepped-up BOJ "liquidity management operations" were initially to create an artificial air of stability). The bottom-line: fiscal 2000 could be the year that the "bond market becomes a real market" in Japan. Economists who propose that the government bond market's apparent tranquility is a good leading indicator of sustainability should remember that exceptionally smooth waters typically proceed the really big *tsunami*.

JGB Investment (Holding) by Investor Type
(Yen Trillion)

	Public Sector				Banks				Trust	Pension	Insurance Institutions	House -hold	Overseas	Other	All
	Total	BOJ	TFB	Post Office	Total	Domestically Licensed Banks	Financial Institutions for Small Business	Financial Institutions for Agriculture, etc.							
CY 1998	33.8	7.1	21.8	5.0	-5.3	-6.8	0.3	1.7	0.6	1.2	6.1	-0.5	0.8	-12.9	24.5
FY 1998	25.4	6.6	19.4	5.4	4.6	0.1	0.1	2.6	0.9	0.6	7.9	-0.6	0.4	-2.7	36.8
98 Q3	6.1	1.5	3.2	1.4	1.1	1.8	0.0	-0.8	-0.1	-0.8	0.8	-0.1	-0.1	0.6	7.5
98 Q4	10.2	2.2	5.7	2.2	5.5	3.7	0.2	1.8	-0.9	1.0	3.2	-0.1	-2.8	-3.0	13.1
99 Q1	3.3	1.2	0.6	1.5	0.1	-2.5	0.7	0.9	1.4	0.3	2.3	0.0	2.1	2.9	12.3
99 Q2	-2.0	1.2	-4.3	1.1	-7.8	-4.7	0.4	-2.7	1.9	2.1	3.7	-0.3	-1.3	10.1	6.5
99 Q3	-3.9	-3.0	-1.0	0.1	12.0	11.3	0.4	0.0	-2.0	-1.1	2.3	-0.2	-0.3	0.5	7.3
Holding at the end of 99 Q3	157.0	30.0	95.0	31.9	51.6	30.2	8.4	7.6	3.9	18.1	60.4	6.2	8.5	50.6	356.2
(Share %)	44.1	8.4	26.7	8.9	14.5	8.5	2.4	2.1	1.1	5.1	17.0	1.7	2.4	14.2	100.0

Note: Net basis except for outstanding balance at the end of 99Q3, according to the Flow of Funds (new series released from 1998).
Figures include treasury bills (TB) but do not include financing bills
Source: BOJ, Goldman Sachs estimates.

JGB Issuance by Sector

	FY 2000	FY 1999		FY 1998
(Yen Trillion)	Initial (estimate)	Suppl. (estimate)	Initial	After 3rd Suppl.
Public Offering	55.7	51.3	40.8	32.4
30 Year	0.4	0.5	0.4	
20 Year	2.4	2.4	2.4	2.4
6 Year	0.5	5.5	5.0	5.2
5 Year	16.5	2.0	0.0	0.0
4 Year	1.0	5.5	5.0	5.1
2 Year	9.2	8.4	5.2	2.7
TB	25.7	27.0	22.8	17.0
Syndicate	17.0	17.0	20.2	18.3
10 Year	16.8	16.8	20.0	18.1
5 Year Discount	0.2	0.2	0.2	0.2
Private Sector Demand Total	72.7	68.3	61.0	50.7
(excluding TBs)	47.0	41.3	38.2	33.7
Public Sector Demand	10.0	10.1	10.1	25.7
(excluding TBs)	10.0	10.1	10.1	25.1
Issuance Grand Total	82.7	78.4	71.1	76.4
(excluding TBs)	57.0	51.4	48.3	58.8

Note: FY 1998 figure excludes the additional JGB issuance accompanying the transfer of former Japan National Rail debt to the general government account.
Source: Japan Bond Underwriting Association and Goldman Sachs estimates

2. There is No "Net Debt" Margin

"Net debt" is an absurd concept for a country facing as huge a demographic shift and as large an unfunded public pension position as Japan. In calculating net debt, the 44% of GDP in surplus funds accumulated in the social security account are counted as a state asset but not the 200% of GDP in unfunded future liabilities. Furthermore, the vast majority of Japan's national pension assets are invested in highly illiquid public works projects. Unlike bonds accumulated in a social security trust fund account, these funds cannot be drawn on in a crisis to help the government finance fiscal expansion. Likewise, most of the 23.3% of consolidated government assets the GOJ also counts as part of the "net" are similarly illiquid or illusory, being in the form of loans to/or investments in "needy" (i.e. financially troubled) public and private enterprises. There is little doubt that a large amount of these loans will never be repaid. In fact, Japan's government may have no net worth to rely on at all.

Japan's Negative Net Worth (trillion Yen)
General Government

Assets		Liabilities	
Liquid Assets	118	Liquid Liabilities	107
Fixed Assets	797	Fixed Liabilities	597
		Net Assets	212
Total	915	Total	915
		Total Net Worth 96'	-368
Est. net incr. central & local govt. debt '96-99			149
Est. total govt. net worth 1999			-517
Net Worth Plus Unfunded SS Liabilities			-1543
*Est. Net Worth as a % of GDP (1999)			-321%

Source: MOF and PHP Institute
MIT Japan Program

A report published by the non-profit PHP Institute in 1999 assessed the balance sheet of the Japanese state by adjusting the book value of potentially saleable national assets for expected market prices while also estimating the value of bad debt in the public sector. In doing so PHP researchers discovered even as of FY96 the government of Japan had a negative net worth of well over 70% of GDP. Adjusting the PHP estimates simply for the increases in government debt up through the fall of calendar Year 1999 brings this level of negative net worth to 104% of GDP (¥517 trillion). Incorporating the MOF projected net addition of national debt in FY2000 (¥48 trillion) and the as yet unfunded portions of the bank and insurance bail-out schemes (at least ¥50 trillion) produces a prospective negative net worth estimate for FY2000 of ¥615 trillion or roughly -125% of GDP. Simply to remedy this gap (let alone fund additional requirements in the future), the consumption tax would have to be raised an additional 10% and kept there for the next 15-20 years.

3. Japan's Domestic Savings and Overseas Net Asset Position: No Salvation

Does the massive paper wealth of Japan's household sector mediate against any of the abovementioned problems? The answer: only to the extent the government can put this capital at its direct disposal. The vast majority of the net overseas liquid assets and domestic savings the Japanese government purports to have at the ready belongs to the people and not the government. The only way to capture these funds is by raising taxes (something that seems politically impossible at the moment). And it is hard to imagine Japanese companies "patriotically" liquidating their US operational assets or investments to help the GOJ underwrite its funding gap.

Moreover, if the GOJ ever were to increase its capture rate of the flow of Japanese liquid private sector wealth the impact on the foreign capital dependent US economy and financial markets would be huge. A major cut in Japan's current account surplus likely would trigger a sizeable slowdown in the American economy, a decrease in merchandise imports, and a compensatory rise in US savings. A drop in the willingness of the "American consumer of last resort" to buy Japanese goods could in turn negate the GOJ's expected revenue boost from higher marginal tax rates on the corporate sector since the profits of exporters would be cut so significantly. Such is the delicate nature of Japan-US economic co-dependence.

Japan's Net Foreign Asset Position

(Yen in Trillions, and percent)	1980	1990	1996
Foreign Assets	39	279	281
Securities	5	85	99
Loans	18	126	94
Other	16	68	88
Foreign Liabilities	36	229	185
Securities	11	59	60
Bonds	7	46	28
(Foreign Currency Bonds)	3	35	16
Equities	3	12	32
Borrowings	19	144	94
Other	6	26	31
Net Foreign Assets	3	49	97
Foreign Assets / Total Assets	1.50%	3.90%	3.80%
Foreign Liabilities Total Liabilities	3.00%	7.60%	5.00%
Net Foreign Assets Net Worth	0.20%	1.20%	2.60%

Source: MSDW; Economic Planning Agency-SNA

Households: Balance Sheets, Ratios, and Sensitivities

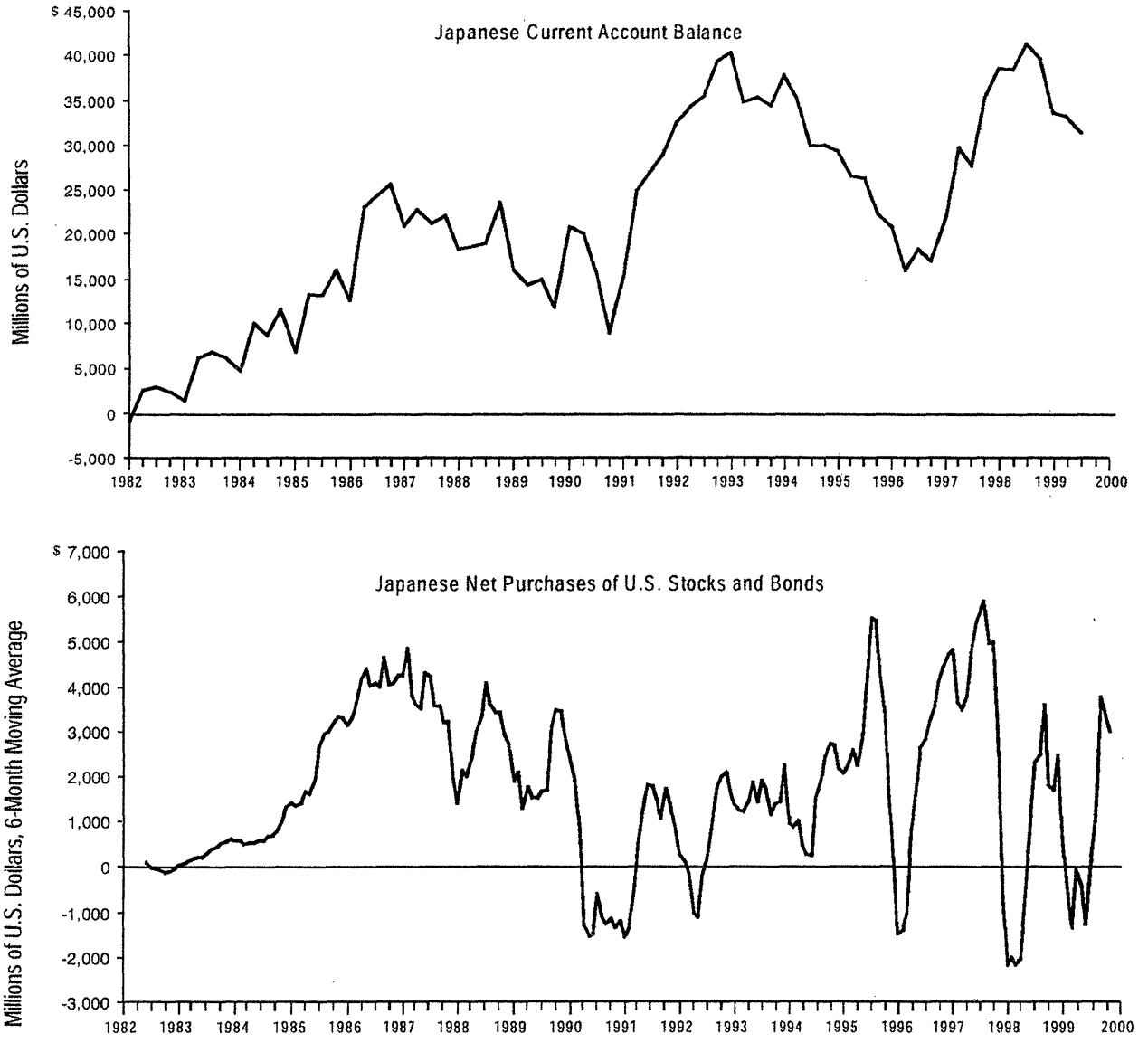
(Yen in billions. and %)

	1980	1990	1995	1996	*1997E*	*1998E*			
Total Assets	987,609.8	2,704,562.7	2,561,087.1	2,585,556.5	***2,604,274***	***2,627,911***			
Fixed Assets	646,348.9	1,755,857.5	1,417,895.9	1,408,751.3	***1,386,634***	***1,372,768***			
Non-reproducible	494,829.0	1,518,139.9	1,152,997.5	1,134,791.1	***1,106,374***	***1,084,815***			
Financial	341,260.9	948,705.2	1,143,191.2	1,176,805.2	***1,217,640***	***1,255,144***			
Total Liabilities and NW	987,609.8	2,704,562.7	2,561,087.1	2,585,556.5	***2,604,274***	***2,627,911***			
Financial Liabilities	130,378.0	326,251.4	370,891.8	371,701.4	***371,330***	***370,587***			
Net Worth	857,231.8	2,378,311.3	2,190,195.3	2,213,855.1	***2,232,944***	***2,257,324***	***1969-1987***		
Financial NW	210,882.9	622,453.8	772,299.4	805,103.8	***846,310.6***	***884,556.6***	***Avg***	***Max***	***Min***
Liquidity Ratio	34.6%	35.1%	44.6%	45.5%	***46.8%***	***47.8%***	35.3%	38.9%	31.0%
Leverage Ratio	15.2%	13.7%	16.9%	16.8%	***16.6%***	***16.4%***	14.8%	16.2%	12.4%
Asset damage limit	86.8%	87.9%	85.5%	85.6%	***85.7%***	***85.9%***	87.1%	89.0%	86.1%
Hidden liability limit	657.5%	729.0%	590.5%	595.6%	***601.3%***	***609.1%***	678.7%	807.8%	617.3%

Note: Financial NW is financial assets less financial liabilities. The liquidity ratio is the ratio of financial assets to total assets. The leverage ratio is the ratio of financial liabilities to net worth. The Asset damage limit is the ratio of net worth to total assets (this ratio shows the proportion of assets that would have to be non-recoverable before net worth is wiped out). The hidden liability limit is the percentage rise of liabilities (e.g. from listing of off-balance sheet activity) that would be needed to wipe out net worth, at the initial level of assets.

Source: Economic Planning Agency, and Morgan Stanley Dean Witter Research. Figures for 1997 and 1998 are MSDW estimates.

CAPITAL FLOWS BETWEEN JAPAN AND THE UNITED STATES

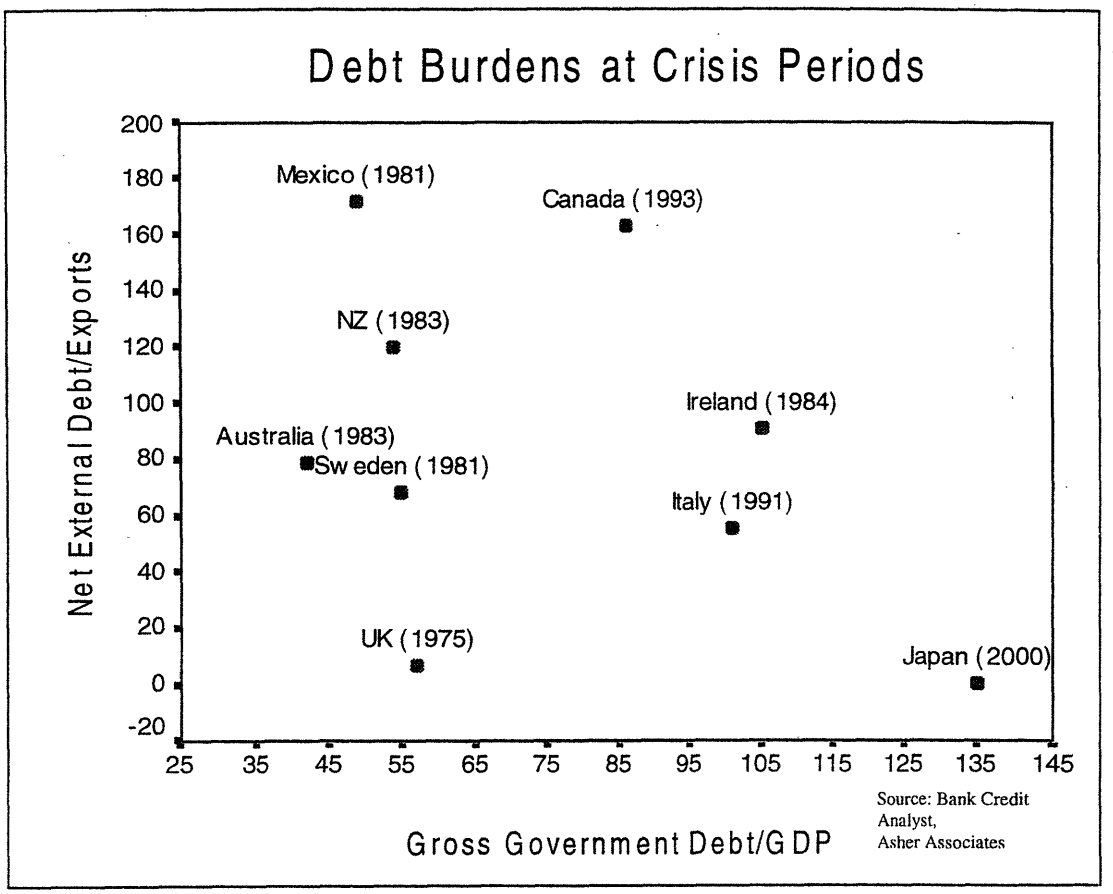


Source: Goldman Sachs

4. The Nail that Sticks Up: Japan vs. Other Cases of Fiscal Sustainability Crisis

Last but not least, how does Japan stack up to other countries that have faced fiscal crisis in the past? Because this is such unexplored territory we have compiled a comprehensive data set comparing the relative severity of Japan's current and near-term future fiscal situation to 11 prominent country cases.

We not only consider conventional figures such as gross debt to GDP and net external debt to exports, we more importantly examine the cash flow position of the state sectors of the countries in question at the time each went into an acknowledged crisis. Is Japan an outlier? As the saying goes: you be the judge.



CONSOLIDATED DEBT-TO-CASH-FLOW RATIOS FOR THE TOP 10 MAJOR COUNTRIES THAT HAVE GONE INTO FISCAL CRISIS IN THE LAST 50 YEARS

#1

JAPAN FY	Debt/ Tax Revenue	Debt Service/ Tax Revenue	Net Financing/ Tax Revenue
1997	1026.34%	43.69%	111.33%
1998	1245.63%	49.14%	132.61%
1999	1485.35%	60.85%	118.73%
2000	**1548.45%**	**65.16%**	**120.04%**
2001	1646.27%	52.66%	124.03%

* Tax Revenue is retained tax revenue after mandatory transfers to regional govts

#2

Great Britain	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
1946	694.95%	13.96%	64.40%
1947	707.50%	13.85%	15.71%
1948	638.72%	12.75%	-16.40%
1949	603.83%	11.93%	-20.48%
1950	629.63%	12.19%	-13.85%
1951	623.54%	12.39%	-17.80%
1952	694.95%	12.13%	-8.80%
1953	707.50%	13.77%	-2.65%
1954	638.72%	14.48%	-2.81%
1955	603.83%	13.56%	-9.08%
1956	629.63%	14.67%	-8.40%

#3	Italy	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1991	290.05%	29.02%	31.94%
	1992	347.10%	36.67%	34.86%
	1993	386.96%	39.36%	35.39%
	1994	391.08%	34.37%	29.61%
	1995	400.70%	35.71%	23.11%
	1996	438.62%	37.44%	26.86%
	1997	405.99%	30.67%	6.35%

#4	Mexico	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1980	0.00%	11.74%	20.88%
	1981	204.82%	20.11%	46.80%
	1982	321.09%	29.88%	104.07%
	1983	269.22%	58.04%	49.34%
	1984	255.68%	52.12%	48.27%

#5	Canada	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1990-91	327.45%	35.68%	26.81%
	1991-92	348.41%	33.74%	28.15%
	1992-93	387.27%	32.25%	34.08%
	1993-94	438.17%	32.75%	36.22%
	1994-95	442.47%	34.09%	30.38%
	1995-96	440.74%	36.00%	21.96%
	1997-98	413.91%	31.92%	6.31%

#6	Ireland	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1983	264.32%	26.74%	32.25%
	1984	273.47%	27.74%	29.67%
	1985	286.01%	30.41%	31.15%
	1986	307.19%	28.27%	30.49%
	1987	318.68%	25.39%	24.02%

#7	New Zealand	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1980	164.73%	12.63%	21.82%
	1981	163.46%	13.65%	23.95%
	1982	185.43%	14.58%	23.60%
	1983	209.44%	19.25%	30.65%
	1984	236.21%	21.13%	27.01%
	1985	223.37%	23.05%	14.56%

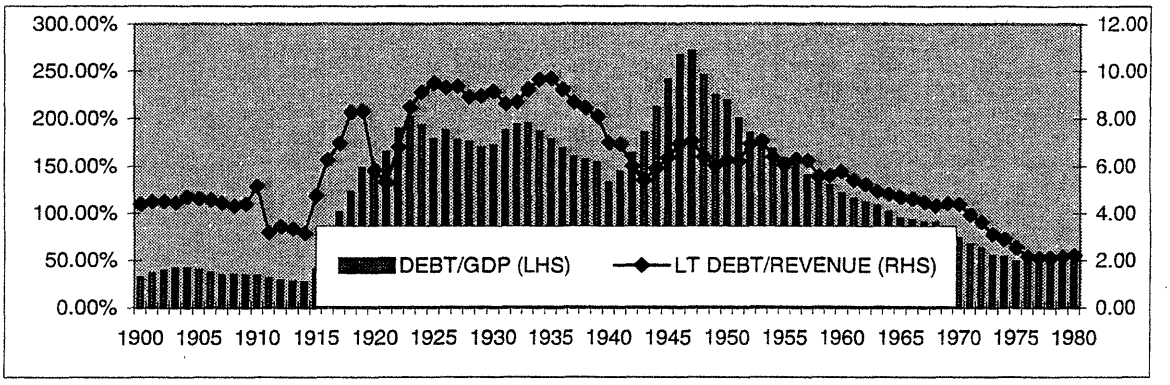
#8	Sweden	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1978	61.97%	5.15%	15.21%
	1979	78.42%	6.15%	23.22%
	1980	99.96%	9.09%	26.96%
	1981	115.57%	12.88%	27.93%
	1982	134.25%	13.64%	25.88%
	1983	154.38%	21.11%	26.34%
	1984	157.62%	22.97%	18.25%

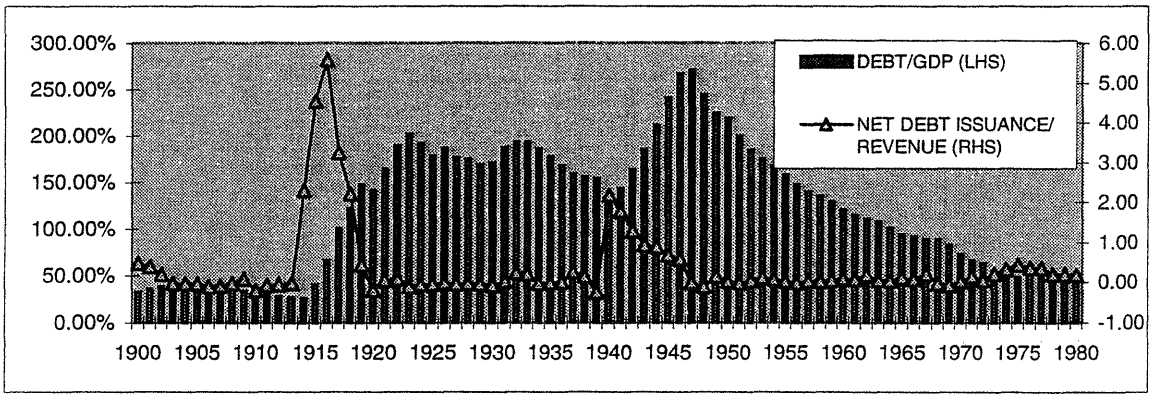
#9	UK	Debt/Tax Revenue	Debt Service/Tax Revenue	Net Financing/Tax Revenue
	1972	183.15%	9.32%	9.21%
	1973	184.40%	10.48%	12.41%
	1974	166.33%	10.18%	14.85%
	1975	162.81%	10.60%	23.81%
	1976	164.96%	11.10%	18.82%
	1977	167.42%	11.16%	10.41%
	1978	169.30%	12.51%	16.71%
#10	Australia	**Debt/Tax Revenue**	**Debt Service/Tax Revenue**	**Net Financing/Tax Revenue**
	1980	0.00%	8.12%	7.46%
	1981	0.00%	7.89%	3.19%
	1982	82.00%	7.62%	1.49%
	1983	90.53%	8.25%	11.05%
	1984	101.69%	9.69%	17.91%
	1985	103.22%	10.71%	12.84%
	1986	93.01%	12.02%	9.96%
REF:	Germany	**Debt/Tax Revenue**	**Debt Service/Tax Revenue**	**Net Financing/Tax Revenue**
	1920-21	184.00%	9.00%	49.00%
	1921-22	216.00%	10.00%	57.00%
	1922-23	9.00%	4.00%	5.00%

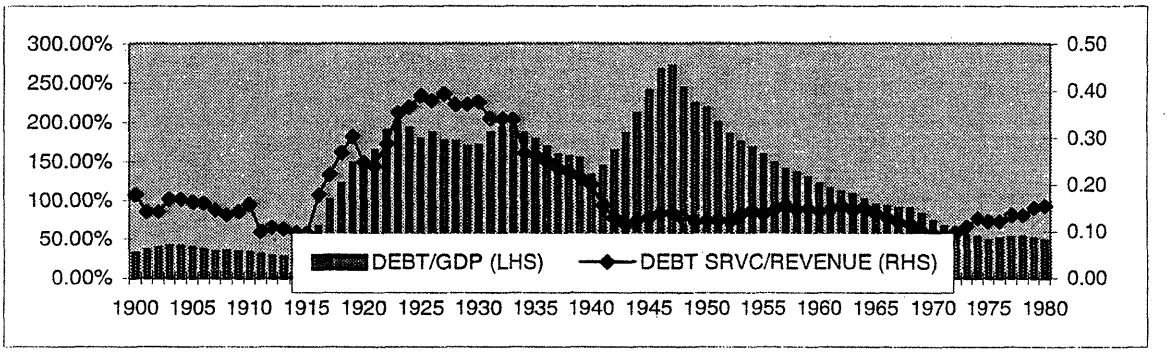
Sources: IMF Government Financial Statistics Yearbook (various years) and official statistics of the respective countries

WHY POST WWII BRITAIN JUST DOES NOT COMPARE

Great Britain after World War II found itself saddled with an enormous gross debt burden (exceeding 270% of GDP in 1947). Some economists see the fact that Britain was able to avoid default as evidence that Japan faces "no obvious limit on gross debt" (in the words of HSBC Japan Chief Economist, Peter Morgan). However, not only was the UK's debt offset by the residual assets of empire, the British government took extraordinary measures to deal with its dire financial straits. These steps included running fiscal surpluses from 1948-1972, nearly doubling the rate of corporate taxation, and raising effective personal income taxes to over 90% for wealthy individuals. As a result of such fiscal restrictions Britain's debt service ratios (debt/revenue, debt service/revenue, and net financing/revenue) never reached levels equal to even 1/2 of Japan's today. Nonetheless, by 1975 the years of big (but balanced) budgets, public industrial bloat, and labor union wage aggression had eaten hard into the UK government finances, sending the nation into a state of fiscal emergency (even though its debt and debt service ratios were near a 50 year low!).



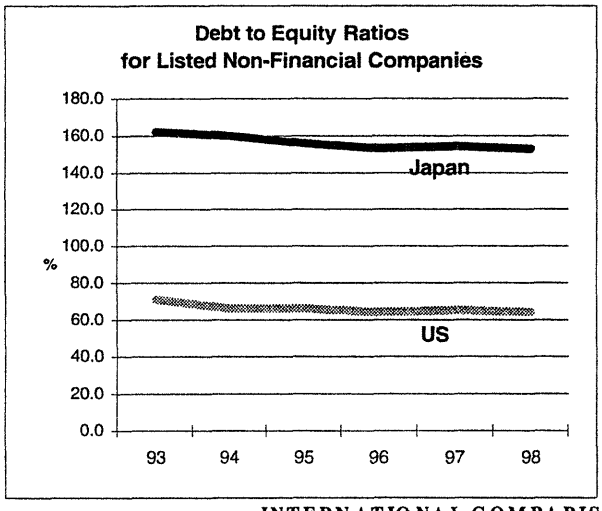


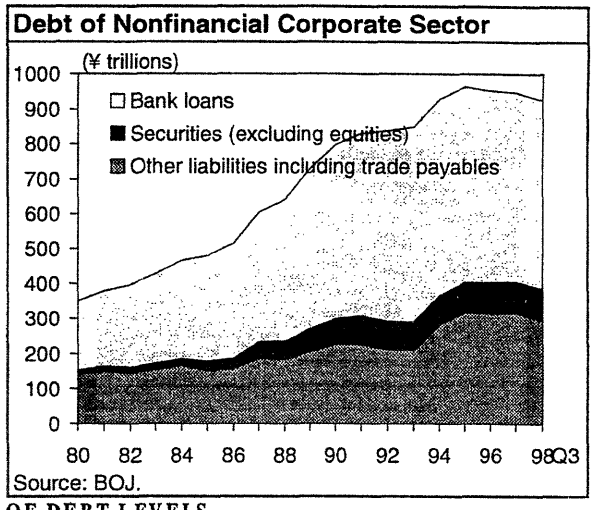


David Asher, MIT Japan Program

F. Japan's Debt Trap: The Private Sector Dimension

It is impossible to avoid the conclusion that Japan's public sector is mired in a debt trap of historically unprecedented depth and severity. Unfortunately, as we explained at the outset, it is not just the public sector that is caught in this trap. With all too few exceptions, the companies in Japan's private sector that comprised the core of Japan's Cold-War import-substitution and export-led growth strategy continue to be hampered by a surfeit of debt over equity, saddled with bad loans, and weighed down with unfunded pension liabilities. In fact, especially among non-manufacturers, gearing ratios have increased, not decreased, since 1990 with loans to the non-financial private sector growing by over ¥300 trillion. As a result, Merrill Lynch Bank Analyst Koyo Ozeki estimates that after a half-decade of huge write-offs banks still are carrying ¥120trn in broadly defined bad assets and ¥40trn in unreserved, latent losses, an amount that is only slightly less than the total value of capital for the Japanese banking sector.[16]



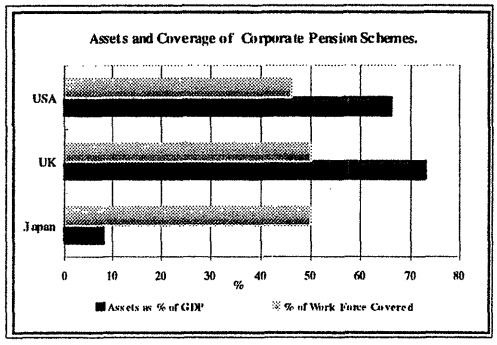


INTERNATIONAL COMPARISON OF DEBT LEVELS

	Level of Debt		Breakdown	
	US Dollars (trillion)	*Ratio to GDP (%)*	*Bank Borrowings (share %)*	*Corporate Bonds (share %)*
US	7.1	83.1	18.5	24.5
Germany	3.8	152.1	70.8	1.8
Japan	9.1	188.7	58.1	10.0

Source: Goldman Sachs

From April 1, 2000 Japanese companies will have to start marking pension assets and cross-shareholdings to market. Although the results of this exercise will not be made public until the end of the fiscal year, it undoubtedly will start to have a visible impact on corporate and financial institutional behavior well before then. As a result FY 2000 could be the start of a much larger credit crunch and more vicious weed-out of bad assets.



Source: Smithers & Company

Year 2000 Pension *Tsunami:*
Adverse Impact on Nikkei 225
ROE, P/E, Debt/equity ratios

	Before	After	Change
Market Capitalization	204	**204**	0
Total Liabilities	264.1	**290.3**	26.3
Shareholder's Equity	129.6	**129.6**	0
Net Profits	3.7	**0.6**	3.1
ROE	2.84	**0.45**	
Debt/Equity Ratio (X)	2	**2.2**	
P/E (X)	55.4	**346**	
P/B (X)	1.6	**1.6**	

Source: Kathy Matsui, Goldman Sachs -Tokyo

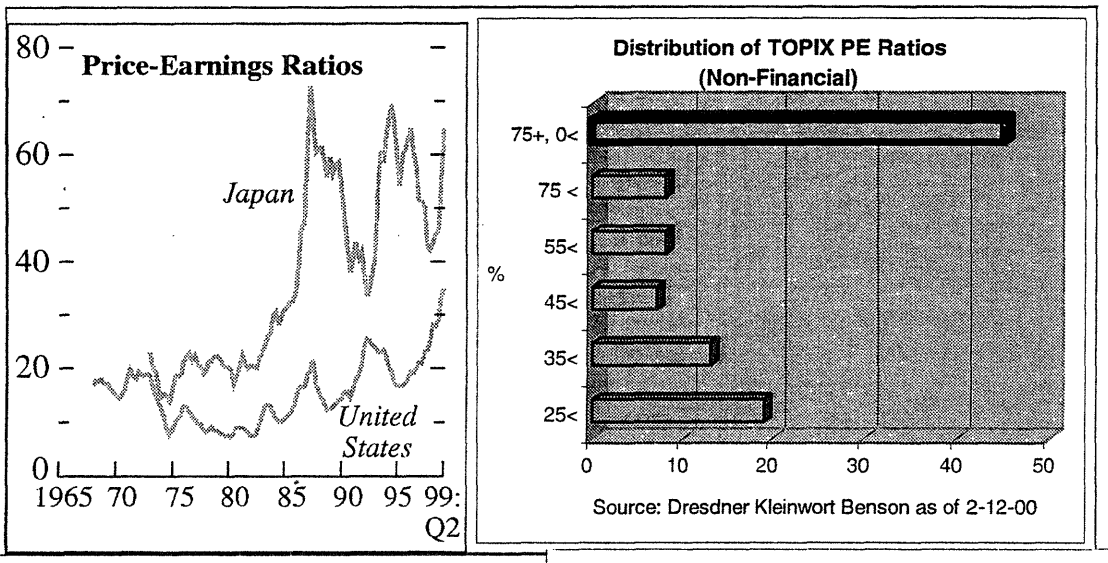
[16] See "Bubble After-Effects not Over Yet," Merrill Lynch-Japan *Fixed Income Weekly*, March 3, 2000

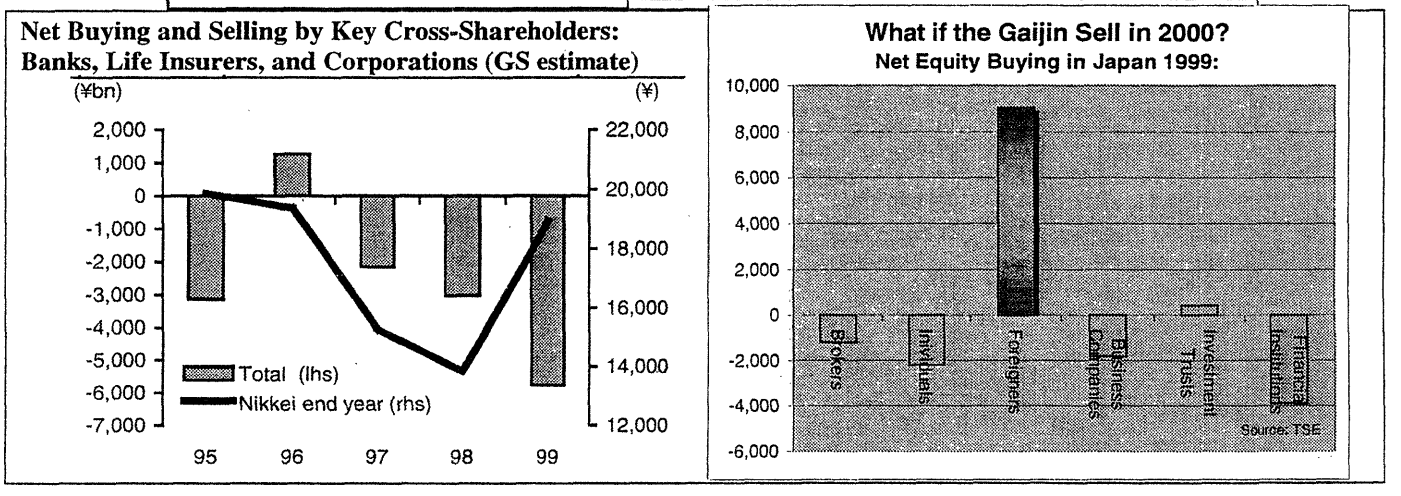
G. Japan's Valuation Bubble: Can it be Sustained?

Japan's private sector's debt and pension problems would be significantly exacerbated by a fall in equity markets. Remarkably, PE ratios for listed non-financial companies in Japan are higher today than at the top of the bubble economy both on a trailing and one-year forecast basis while the average ROE remains near a 20 year low of 3% (the long-term historical average is upwards of 9%). Moreover, although Japanese non-institutional investors have been consistent net sellers over the last two years foreigners have been massive net buyers.

Now that the economy is back in recession, Japanese companies are unloading long-term cross-shareholding onto the market at an unprecedented rate, and the outlook for a corporate profit resurgence is becoming increasingly dim, can Japan's "new economy" and recovery themes continue to captivate the "gaijin"? If not, Japan's equity markets could be in for another hard landing in the next twelve months, this time with little hope for traditional PKOs to provide base support and accounting rules in place that could force numerous financial institutions to the wall if their "hidden equity" is wiped out.

Furthermore, since the government has guaranteed the viability of the banking and insurance systems and extended over ¥30 trillion in credit guarantees to small and medium sized corporations, financial difficulties or failures in the private sector undoubtedly will have a direct negative impact on the public sector's balance sheet. Unfortunately Japan has become more, rather than less, "incorporated" over the last decade.





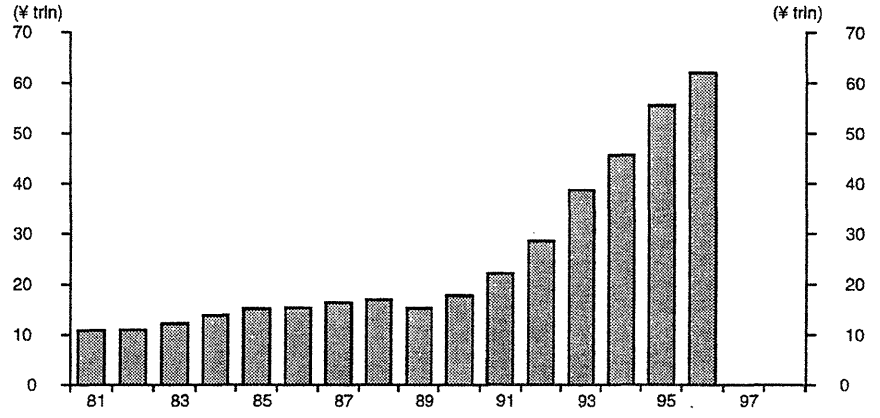
III. Conclusion:

No Easy way Out of Japan's Debt Trap

In conclusion, with serious public financial reform off policymakers' radar screens, Japan's government debt and deficit are on an explosive and unsustainable trajectory. Moreover, the financial burden on the government imparted by the decline of the "old Japan" segments of the economy is growing rapidly. Without sweeping and fundamental reforms of Japan's debt architecture a major crisis seems likely in the coming few years.

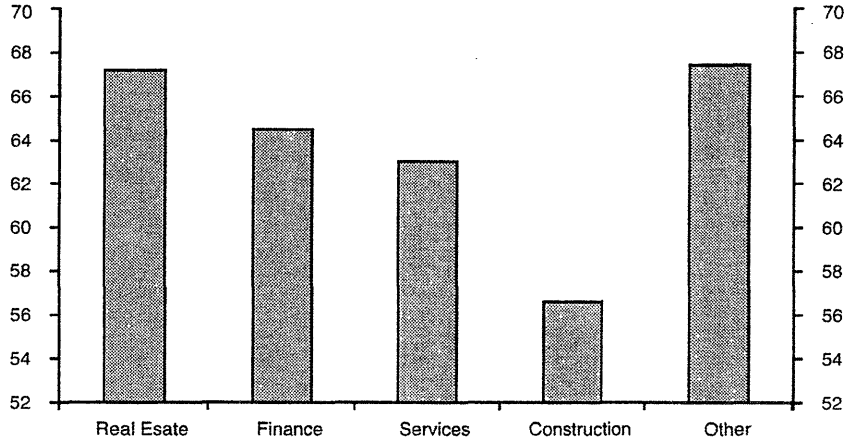
Unfortunately, there is no easy way out of Japan's debt trap. Even an economic recovery would not produce increased tax revenue in the first 2-3 years since the Japanese corporate sector now has over ¥60 trillion in outstanding tax-loss carry-forwards on its books. Furthermore, a recovery ironically could be quite dangerous since it would bring on higher interest rates. Given both the financial vulnerability of the public and private sectors to higher debt service costs, a GDP rebound could trigger a crisis unless it was preceded by comprehensive balance sheet reform.

Amount of Losses Deferred into the Next FY



Source: NTA

Ratio of Loss-making Corporations by Sector (FY96)



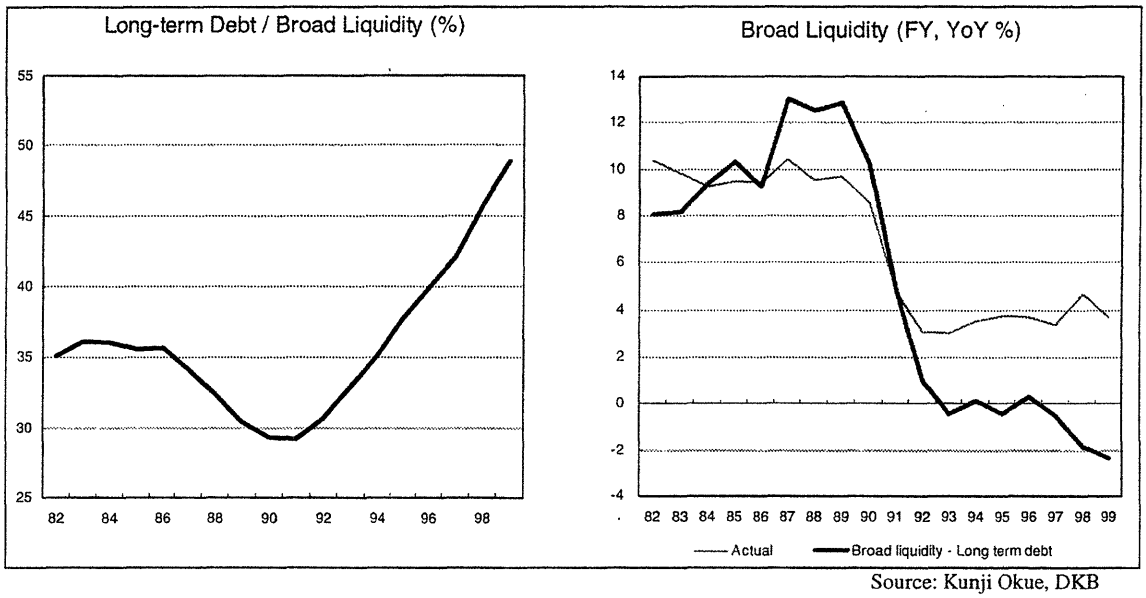
The sort of government balance sheet restructuring needed to prevent a crisis undoubtedly will be politically difficult and macroeconomically dangerous. Halting Japan's debt explosion by 2005 requires the government to run at least a 3% primary fiscal surplus, not an 8% primary deficit and make large concurrent cuts in social security benefits. Even a "moderate" stabilization plan, under which Japan would run a 2.2% fiscal surplus would only slow – not stop – the hemorrhaging of national debt.

Japan's Stabilization Dilemma

	Stabilization Strategy 1: Aggressive	Stabilization Strategy 2: Moderate	Current Trajectory
Average Nominal Interest on Debt	**2.90%**	**4.00%**	**3.50%**
Nominal GDP Growth	**1.00%**	**1.50%**	**0.05%**
Average Primary surplus/deficit	**3.00%**	**2.20%**	**-8.00%**
2000	141.00%	141.00%	141.00%
2001	149.00%	149.00%	152.00%
2002	148.83%	150.53%	165.24%
2003	148.66%	152.09%	178.94%
2004	148.48%	153.69%	193.12%
2005	148.30%	155.33%	207.78%
2006	148.12%	157.02%	222.95%
2007	147.94%	158.74%	238.64%
2008	147.75%	160.51%	254.87%
2009	147.55%	162.32%	271.67%
2010	147.36%	164.18%	289.04%
2011	147.16%	166.09%	307.01%
2012	146.95%	168.04%	325.60%
2013	146.75%	170.04%	344.84%

Source: Asher Associates calculations

Debt is "Crowding Out" Economic Recovery



Source: Kunji Okue, DKB

Moreover, remedying the underlying asset-liability imbalance in the non-financial private sector requires companies to make huge capital write-offs and engage in large-scale debt-to-equity swaps with the financial sector. Yet, if these steps were to be taken the net worth of both sectors easily could become substantially negative. As the following charts from Robert Feldman's superb report *When will Japan Run out of Money* show, a 30% drop in the non-financial private sector's assets combined with a 30% increase in liabilities would wipe out its net worth. In addition, given both the considerable overstatement of the value of land assets on the books of companies and the widespread practice of guaranteeing partner firms' liabilities, a "30-30" drop is very conceivable in the coming 24 months as the big weed-out goes into high gear. Likewise, the banking sector is well on the way to having a 4% drop in assets and 3% increase in liabilities by 2001. "Japan Inc." could well face a "big bang-kruptcy" in both the public and private sectors in the years ahead if current trends persist.

Non-Financial Corporations: Balance Sheets, Ratios, and Sensitivities

(Yen in billions, and %)

	1980	1990	1995	1996	*1997E*	*1998E*			
Total Assets	786,369.2	1,978,728.7	1,824,999.7	1,837,381.0	*1,861,634*	*1,820,492*			
Fixed Assets	469,360.1	1,173,783.6	1,096,336.7	1,106,356.0	*1,140,990*	*1,125,647*			
Non-reproducible	187,928.6	669,291.4	500,726.0	492,207.0	*482,363*	*472,716*			
Financial	317,009.1	804,945.1	728,663.0	731,025.0	*720,644*	*694,845*			
Total Liabilities and NW	786,369.2	1,978,728.7	1,824,999.7	1,837,381.0	*1,861,634*	*1,820,492*			
Financial Liabilities	402,228.3	855,215.5	967,039.0	979,398.0	*996,929*	*1,000,119*			
Net Worth	384,140.9	1,123,513.2	857,960.7	857,983.0	*864,705*	*820,373*	*1969-1987*		
Financial NW	-85219.2	-50270.4	-238376.0	-248373.0	*-276,285*	*-305,274*	*Avg*	*Max*	*Min*
Liquidity Ratio	40.3%	40.7%	39.9%	39.8%	*38.7%*	*38.2%*	42.4%	46.6%	39.5%
Leverage Ratio	104.7%	76.1%	112.7%	114.2%	*115.3%*	*121.9%*	113.4%	139.2%	80.9%
Asset Damage Limit	48.8%	56.8%	47.0%	46.7%	*46.4%*	*45.1%*	47.1%	55.3%	41.8%
Hidden Liability Limit	95.5%	131.4%	88.7%	87.6%	*86.7%*	*82.0%*	89.8%	123.6%	71.9%
Credit Crunch Escape Ratio	18.2%	4.3%	21.7%	22.4%	*24.2%*	*27.1%*	18.2%	24.6%	2.0%

Note: Financial NW is financial assets less financial liabilities. The liquidity ratio is the ratio of financial assets to total assets. The leverage ratio is the ratio of financial liabilities to net worth. The Asset damage limit is the ratio of net worth to total assets (this ratio shows the proportion of assets that would have to be non-recoverable before net worth is wiped out). The hidden liability limit is the percentage rise of liabilities (e.g. from listing of off-balance sheet activity) that would be needed to wipe out net worth, at the initial level of assets. The credit crunch escape ratio is the percentage of fixed assets that would have to be sold (at initial prices) in order to eliminate net financial indebtedness.

Source: Economic Planning Agency, and Morgan Stanley Dean Witter Research. Figures for 1997 and 1998 are MSDW estimates.

Solvency Ratios for the Japanese *Non-Financial* Corporate Sector
(How far could assets fall and liabilities increase before statistical insolvency?)

Rise of Liabilities

Drop of Assets	**0.0%**	**10.0%**	**20.0%**	**30.0%**	**40.0%**	**50.0%**	**60.0%**	**70.0%**	**80.0%**
0.0%	820	720	620	520	420	320	220	120	20
-10.0%	638	538	438	338	238	138	38	-62	-162
-20.0%	456	356	256	156	56	-44	-144	-244	-344
-30.0%	274	174	74	-26	-126	-226	-326	-426	-526
-40.0%	92	-8	-108	-208	-308	-408	-508	-608	-708
-50.0%	-90	-190	-290	-390	-490	-590	-690	-790	-890
-60.0%	-272	-372	-472	-572	-672	-772	-872	-972	-1,072
-70.0%	-454	-554	-654	-754	-854	-954	-1,054	-1,154	-1,254
-80.0%	-636	-736	-836	-936	-1,036	-1,136	-1,236	-1,336	-1,436

Solvency Ratios for the Japanese *Financial* Corporate Sector
(How far could assets fall and liabilities increase before statistical insolvency?)

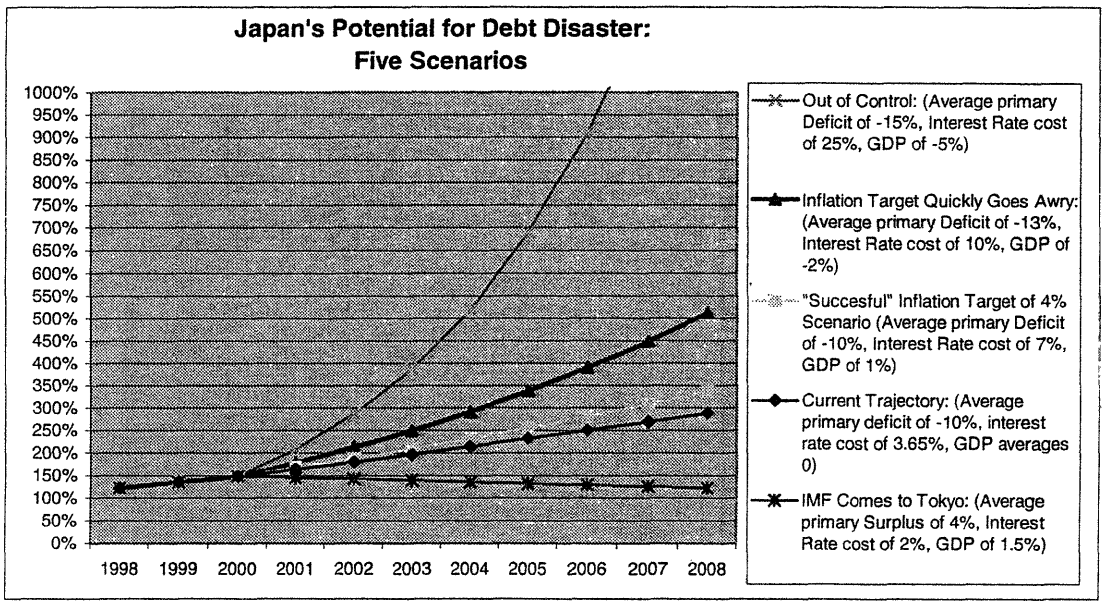
Rise of Liabilities

Drop of Assets	**0.0%**	**1.0%**	**2.0%**	**3.0%**	**4.0%**	**5.0%**	**6.0%**	**7.0%**	**8.0%**
0.0%	141	121	101	81	62	42	22	2	-18
-1.0%	120	100	80	60	40	20	1	-19	-39
-2.0%	98	79	59	39	19	-1	-21	-41	-61
-3.0%	77	57	37	18	-2	-22	-42	-62	-82
-4.0%	56	36	16	-4	-24	-43	-63	-83	-103
-5.0%	35	15	-5	-25	-45	-65	-85	-104	-124
-6.0%	13	-7	-26	-46	-66	-86	-106	-126	-146
-7.0%	-8	-28	-48	-68	-87	-107	-127	-147	-167
-8.0%	-29	-49	-69	-89	-109	-129	-148	-168	-188

An Inflation Target: Even Magic Bullets can Kill

Adopting a 2.5-4% inflation target is frequently portrayed as Japan's last untried policy option both for getting out of its debt-deflation trap and jumpstarting growth. If Japan were not in such a perilous financial condition, inflation targeting might make good sense. Yet, the lesson of history, both distant and recent, is that for a country that has a large burden of floating short-term debt like Japan, aggressive debt monetization – needed to jump-start inflation in a deflationary setting – easily could make a bad situation much worse (triggering a combustive interaction between floating debt, high powered money, and prices).

Most obviously an inflation target would immediately force nominal interest rates higher (the last thing that either the indebted government or the private sector need). Higher rates would then increase the rollover costs on outstanding JGBs and boost the cost of issuing new bonds to underwrite government spending since base revenue is so insufficient. In turn, increased debt issuance would push rates up further as the default/inflation premium expanded. Meanwhile, real tax revenue would be unlikely to keep up with the pace of escalating nominal inflation thereby exacerbating, rather than solving, the government's funding problems (this has been the case in numerous countries that have adopted monetization policies). A vicious cycle could be set in motion. The experiences of Germany in the 1920s, Argentina in the 1980s, or Russia in the 1990s shows that hyperinflation cannot be ruled out should Japan aggressively exercise the "printing press option."



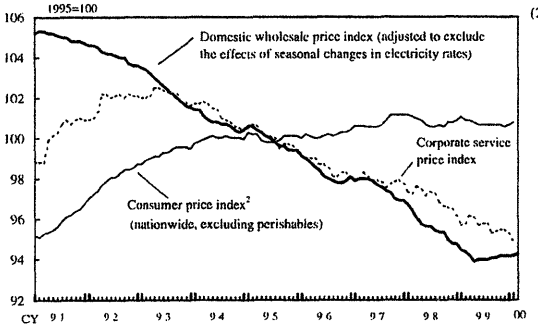
So, what could Japan do to get out of its debt trap without an across-the-board crisis? However incredible, Japan may be the nation in Asia most in need of an IMF-*style* restructuring package: cutting government spending, raising taxes, privatizing state assets, and reforming pensions. Combined with opening the door much further to inward direct investment and corporate acquisitions by foreign companies, Japan probably could turn its government finances around in a 5-7 year period and could produce a genuine economic recovery far sooner (as the crisis hit, reforming Asian economies have shown). Such a turnaround truly would be another Japanese economic miracle. It is our sincere hope that such a miraculous recovery is just over the horizon.

Beware of "Kofusai"

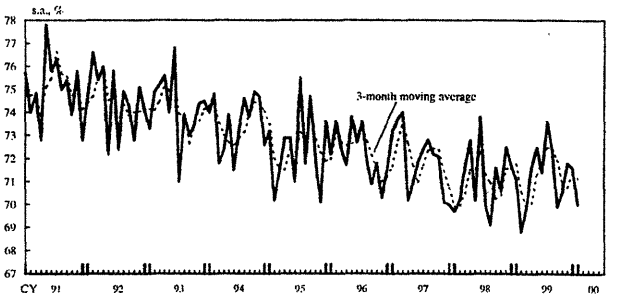
Japan seems to be drifting towards debt monetization. Although the BOJ Policy Board has held fast so far, political heat on the Board to change course is increasing. As rumor has it, senior government officials are contemplating seeking a Diet mandate for the MOF Trust Fund Bureau to underwrite a portion of FILP expenditure with 'kofu kokusai' (subsidy bonds). These "kofu-sai" are essentially open-ended "IOUs" to the BOJ that the Bank is obligated to redeem. They were last prominently used toward the end of WWII and in the early stages of the Occupation to fund welfare expenditure as tax and conventional bond generated revenue collapsed. They were of course highly inflationary. Officials at the BOJ have intimated that they "would take the government to court rather than redeem such worthless paper." Nonetheless, legally it appears there is little the BOJ could do to stop such an action.

Japan's Debt Trap

Although falling prices certainly have hurt the over-leveraged private and public sectors, from the standpoint of the consumer Japan clearly is not in a deflationary spiral comparable the US in the 1930s. In fact, the marginal propensity to consume has only declined by a few percentage points from the bubble era peak levels while consumer prices have remained remarkably stable given the huge fall in producer prices and assets. Moreover, it appears that consumption has increased most significantly in sectors, such as consumer electronics, where prices have fallen the furthest. This is largely due to the fact that until recently Cold-War era "import-substitution" and "cost-protectionist" regulatory barriers pushed up domestic prices in many sectors – such as consumer electronics – to a point that actively inhibited consumption.



(2) Propensity to consume (Family Income and Expenditure Survey)

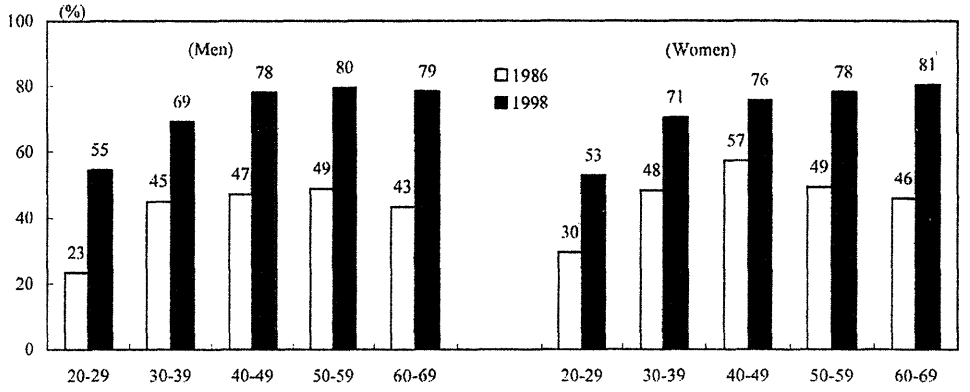


Source: Bank of Japan

Overall, consumption in Japan is "rationally suppressed" by structural factors outside of the range of monetary policy influence. As a June 1999 study by the BOJ* concluded, unless and until pensions are comprehensively reformed, savings will continue to substantially exceed investment/consumption. A large body of survey evidence shows that Japanese institutions and individuals rationally expect to need their "excess savings" in order to finance their retirement since they do not believe in the future they will receive anywhere near the promised level of private or public pension income. Moreover, with public anxiety over the ballooning government debt growing it seems that this is generating a fair degree of Ricardian "precautionary saving."

Thus, at root, we conclude that Japan is not in a liquidity trap. Rather it is caught in a debt trap. Getting out of this debt trap requires sweeping public financial and national pension reform. Given the fiscal and structural backdrop, aggressive inflation targeting would be more likely to stifle demand than enliven it. Japan must avoid the temptation to play economic "Russian roulette" with a gun full of purported monetary "magic bullets."

1. Anxiety Regarding Post-retirement Livelihood



Note: Percentage of individuals who responded that "they feel some anxiety" to the question "Do you feel some anxiety regarding your post-retirement livelihood, or do you feel no such anxiety?"

Source: Management and Coordination Agency, Labor Force Survey, 1998

* See Shinobu Nakagawa, *Why Has Japan's Household Savings Rate Remained High even during the 1990s?* Tokyo: Bank of Japan, Research and Statistics Department, July 1999)

IV. Three Scenarios for Japan 2000-2005

1) Taisho Repeat (50%)

Politics:

- Weak, Consensus-Based Political Leadership, [ideologically opposed] 2 ½ Party Politics with the LDP and the Democrats Alternating in the Lead of Coalitions

Economic Policy:

- Government Continues with Half-Baked Reform Course (Financial Deregulation Concurrent with Financial Socialism)

Economic Outcome:

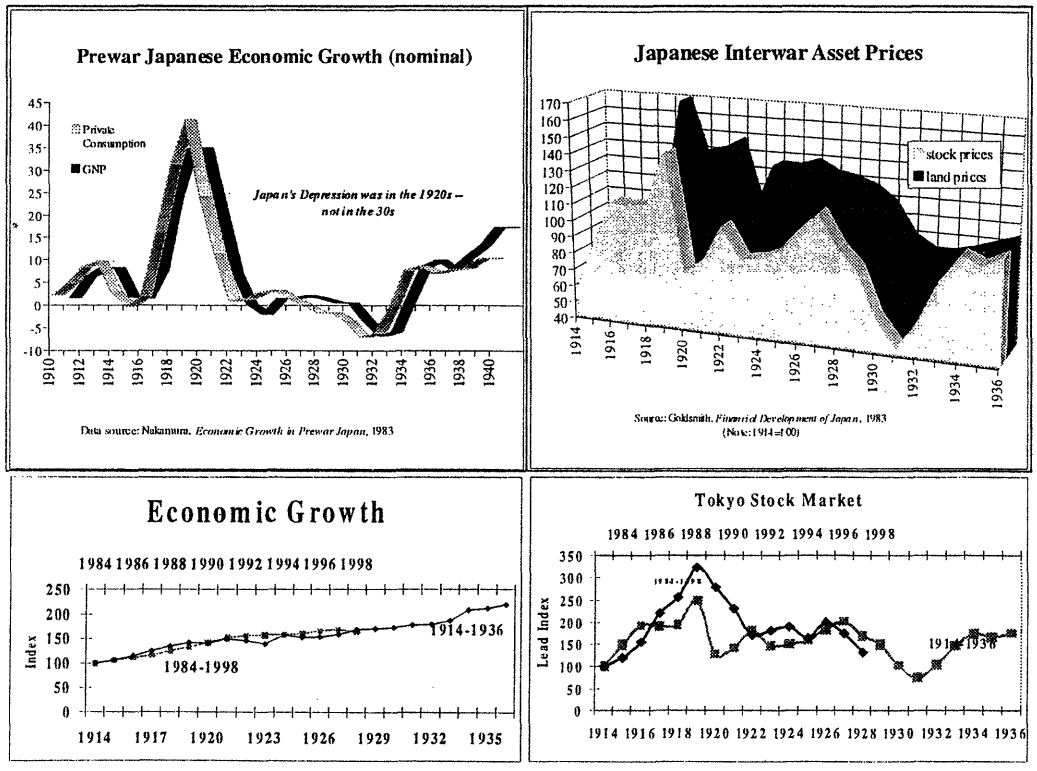
- Stock and bond markets crash to record lows but stabilize on news of "new reform course." Yet, soon investors realize that, as in the FSU, rhetoric in "new Japan" exceeds reality
- Economy Stays Sluggish, Asset Markets Remain Depressed
- Repeated banking crises
- Sharp Dualization of Industrial and Financial Systems (Large Gap Between Global Competitors and Domestically Dependent Losers)
- Hollowing Out (Taxes on operating income drives much of 'Japan Inc.' out of Japan)
- Rising Unemployment
- Public Sector "Bigger Bankruptcy"/ Fiscal Crisis by 2003

Foreign Investment Implication

- Foreigners profit on the backs of Japan's inability to solve its own problems. Big 'Gaishi' and Japanese Combines Consolidate the Capital and Industrial Structure. M&A accelerates.

Political Outcome:

- "Necktie nationalists" like Ishihara and Hattoyama introduce laws to contain foreign influence and gain widespread popular support



2) Tory Renaissance (25%)

Politics:

- Strong "Liberal-conservative" political leader rises to the fore and unites the nation

Economic Policy:

- 'No Pain, No Gain' IMF style approach to reform
- Massive sell-off of state assets, privatization of Public Pensions, and restructuring short-term debt.
- Totally Open Door to Foreign Investors

Economic Outcome:

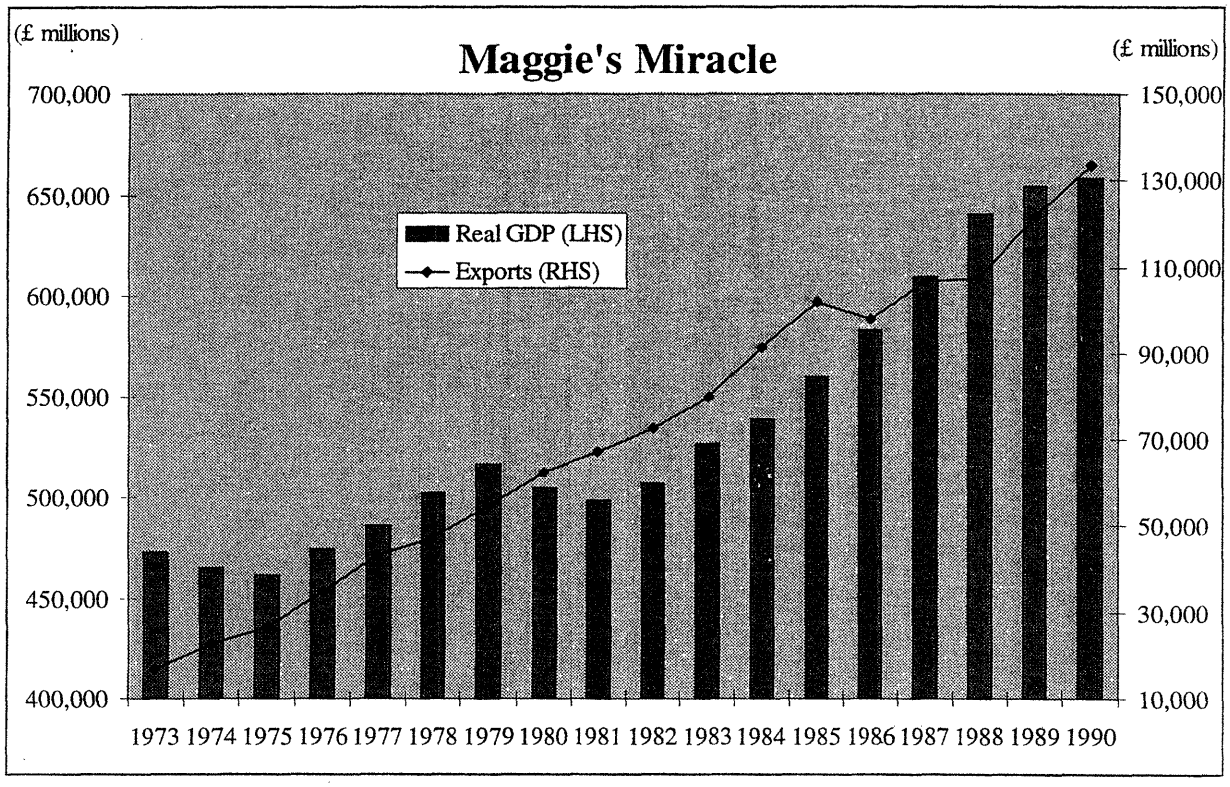
- Return to the "miracle days." Strong growth rebound after brief, sharp downturn driven by foreign investment and release of pent-up savings
- Japan's current account surplus skyrockets in the period of restructuring but new US-Japan Common Market Agreement smoothes the waters
- Stock market hits all-time high by 2003

Foreign Investment Implication:

- Nirvana for those who bought at the bottom and held on.

Political Outcome:

- Japanese become global citizens and Japan becomes a true global partner economy for the US.



3) Weimar Repeat (25%)

Politics:

- Political Inability to Face up to Debt Repayments

Economic Policy:

- Misplaced Faith in Monetary Magic Bullets
- Debt Monetization
- Continued fiscal largesse (albeit with cheapened Yen)

Economic Outcome:

- Hyper-Inflation
- Capital Flight
- Devaluation
- GDP Implosion
- Capital Controls

Foreign Investment Implication:

- Foreigners Called into Help With the Reconstruction but Blamed for the Disaster

Political Outcome:

- Antagonistic authoritarian politics/ return of the shogun?
- War in Asia?

In Weimar GermanyMonetization and Debt did not Go well Together....

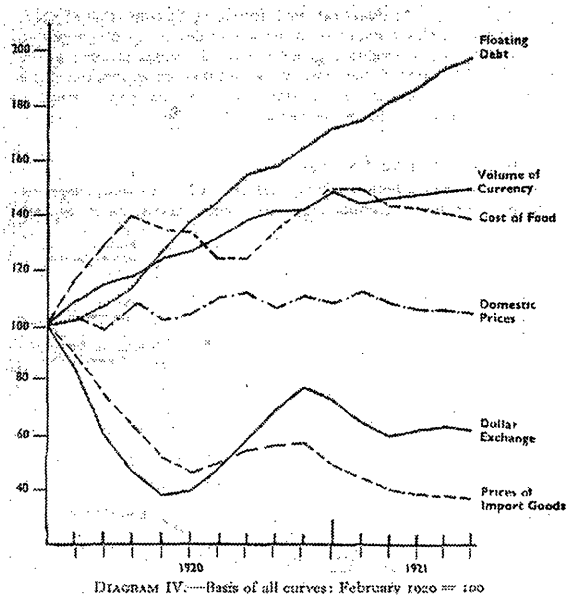


DIAGRAM IV.—Basis of all curves: February 1920 = 100

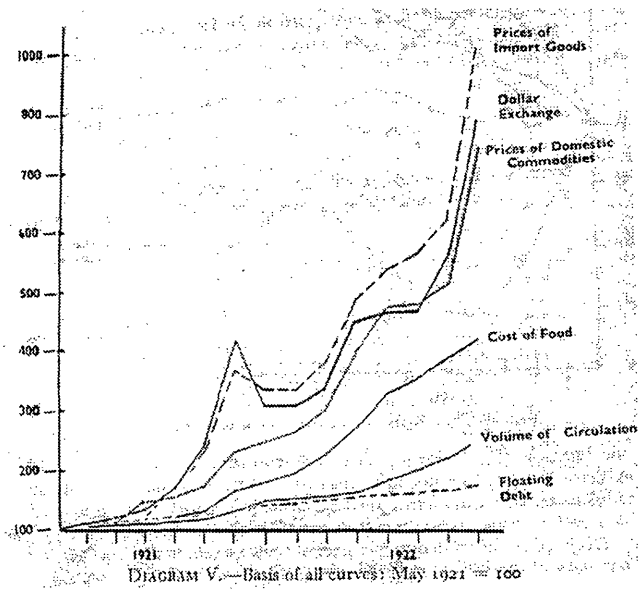


DIAGRAM V.—Basis of all curves: May 1921 = 100

Source: Bresciani-Turoni, 1936

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David L. Asher is a research fellow with the Japan Program at the Massachusetts Institute of Technology. Asher has been involved in Japan affairs for over a decade in a wide range of capacities. He has worked as a Japan economic and trade policy specialist for leading Republicans in the US Congress, an analyst at the Institute for Defense Analyses (tasked to support policy and strategy for the Japan Desk in the Office of the Secretary of Defense), a researcher at a number of major think tanks in the US and Japan, and market strategy consultant to a number of hedge funds and investment research companies. He is the author or co-author of numerous articles and monographs the Japanese economy and on US-Japan relations, including *Japan's Key Economic Challenges for the 21st Century* (Johns Hopkins University, School of Advanced International Studies, 1998 – available at: http://www.sais-jhu.edu/pubs/policyforum/asher.pdf). His research and analysis have been featured in the *Wall Street Journal,* the *New York Times*, the *Financial Times*, the *Los Angeles Times*, *Business Week*, *Fortune,* the *Far Eastern Economic Review*, *Time*, the *Nihon Keizai Shimbun*, *Nikkei Business,* and elsewhere. Asher did his undergraduate and initial graduate work in Political Science, Japanese, and Economic History at Cornell University and the London School of Economics. He is to receive a doctorate in International Relations from the University of Oxford in the summer of 2000. His dissertation addresses the failure of Japanese economic liberalization and financial reform in the 1920s and the rise of military-nationalism. Asher is fluent in Japanese and lived in Japan for over three years.

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