Japan’s Economic Malaise

Three simple models for why
Japan’s economy will never grow again

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I. Introduction

I argue below that Japan’s economy will not grow again, and that (with hindsight) this should not be surprising. First, Japan has matured, to the point where its labor force is in decline. Such an economy is unlikely to grow in absolute terms. Second, that maturation occurred in a short span of time, resulting in large structural shifts in the economy. These strained the Japanese financial system past the breaking point, and have stymied efforts at macroeconomic stimulus. I believe, however, that the magnitude of these shifts would have overwhelmed any financial structure. I do not deny that Japan’s financial system exhibited large vulnerabilities, and its macroeconomic policy systematic failures. Again, I believe that these are beside the point. Third, the current structure of Japan’s economy is not sustainable; financial liabilities (bank deposits, government social security commitments) and financial assets (good loans, and tax receipts under the status quo) are wildly out of balance. Bringing these into balance will inevitably impose a drag on economic growth into the distant future. The bottom line is that we should not expect the Japanese economy to grow again in our lifetimes.

Let me preface the paper proper with a methodological digression. The slowdown of the Japan’s economy during the past decade deservedly has been analyzed extensively. These analyses, however, assume implicitly or explicitly that Japan is “unique.” If that were not true at some level, analysis would be unnecessary; indeed, there would be no point to an Association of Japanese Business Studies. But I value my membership in AJBS; it is more useful to me intellectually than the American Economic Association. However, as someone trained in the social sciences, I am opposed to using the assumption of uniqueness as a starting point. What I present below are three simple models – one of which admittedly has several subcomponents – that seek to avoid that bias.

There are gains to be had from viewing Japan as a political-economic “system” on one extreme, and delving into the details of monetary policy transmission under the particular circumstances of Japan in the latter 1990s. The cost is missing commonalities with other countries – I stress those with China – and of substituting complex stories for simple ones that
can be told without resort to the peculiarities of Japanese institutions. Now I feel confident that I have substantial knowledge of those peculiarities; I could not have written this paper otherwise. So while what I present are simple models, they are not simple models naively applied.

As is obvious, I am an economist, for whom Japan today poses interesting questions. For example, in the last half-century it is the only major economy to undergo a full decade of stagnation; only the much smaller Switzerland has experienced something similar. More compelling, Japan will be the first developed country – indeed, perhaps the first sizeable society in human history – to see its population decline for other than traumatic reasons; Italy is following close behind, but as part of the increasingly integrated EU it is much harder to analyze. Finally, Japan is the first developed economy to confront deflation since the Great Depression, and with it the collapse of the effectiveness of monetary policy; I do not expect it to be the last. Obviously, my queries here are selective, and quite different from those I have when I put on my hat as a microeconomist who follows the automotive industry. I think the results I present are sobering, by I hope that the analytic perspective encourages the members of AJBS to find other simple stories the various disciplines that we can retell in a compelling manner because of our own detailed knowledge of Japan.

II. Growth Models: Changes of Stocks in Japan’s Economy

You can’t squeeze water from stone. This is the essence of the “classical” model of growth. In effect, it states that output is a function of inputs – hardly a novel idea – and that, to make this concrete, if we can understand what is happening to the growth of the labor force and to investment, then we can place an upper bound on growth. In the late 1950s Robert Solow and others plugged in numbers, using data on the stock of labor and the stock of capital (the value of buildings, cars, machinery, roads and other productive assets). To their initial surprise, their efforts explained only about half of US growth; the balance, unexplained sources of growth, was
later dubbed technical change. Applied to Japan, this sort of straightforward growth accounting exercise helps delineate what contributed to, and what limited, growth.¹

Capital growth was a major component; high investment gave workers more, and better, equipment with which to work. Such gains were not restricted to manufacturing. In Japan, new houses and office buildings were more comfortable than old – better lit, better cooled, better furnished. Likewise, formal education and skills acquired on the job made workers more productive; however imprecisely, such inputs can be measured, as can the absolute size of the labor force and changes in hours worked. Finally, research on Japan highlighted one-time factors that increased output, the most important of which was the transition from farm to factory.² That is important for today’s developing world, but was hidden in the early generation of applied work that drew on the easily available data on the post-1945 US economy. In sum, the expanded stock of these resources enabled higher output, promoting the general welfare, allowing the Japanese today to enjoy life, liberty and the pursuit of happiness.³

Now this model is important within the context of macroeconomics, and so is familiar to most economics majors. For one thing, it is the core of the “classical” tradition, which is central to modern treatments of the field. However, since the US economy has tended to grow at a relatively steady rate decade after decade, applying it does not add much to understanding contemporary issues. That is not the case for the rest of the world, and Japan is as good an example to use in employing it. In the 1960s investment was high, and by the middle of the decade the postwar baby boomers were entering the labor market. Furthermore, technical change was rapid, not just because of new processes but also new products. Trade played a role – not because of exports, but rather due to imports, which permitted workers to move out of low-

¹ See Denison and Chung (1976) for such analysis applied to Japan.
² W. Arthur Lewis, a Nobel laureate and Princeton professor, was the first to stress this transition, later formalized as a 2-sector model of development. An initial empirical application of this model was by Gustav Ranis, a Yale economist, using data from Japan.
³ The 1990s saw a resurgence of growth theory; see for example Solow (2000).
productivity sectors such as coal mining and agriculture. Accounting for the growth of the stock of productive resources helped clarify why Japan could grow so rapidly, and provided grist to the academic mill for subsequent comparisons with other rapidly developing economies.4

Such growth accounting shows its fruitfulness as a model when used to ask why growth slowed. It serves as a powerful antidote to more casual analysis. A simple graph of Japan’s postwar growth illuminates this. Now growth in Japan has been slow since the collapse of the “bubble” of the late 1980s, which tends to divert our attention. Indeed, the starting point for most analyses of Japan’s current problems focuses on a periodization of postwar growth, and on the apparent discontinuity circa 1990. [See Figure 1, which uses the typology of Katz (1998, 2002).] I am uncomfortable with that approach on a priori grounds. If nothing else, the graph shows two discontinuities, and yet no attention is paid to the former. [See Figure 2.] More generally, a unique event is not subject to analysis; it can be described, but not explained. Economics is of no use in such cases. Furthermore, it fits with a bias to which area studies are subject, of emphasizing the peculiar over the general. Now history is, to some extent, the study of the unique, and I emphasize history when I teach about Japan’s economy. But I use that to highlight that institutions differ from those in the US, not that economics is somehow a fruitless endeavor. I turn to the unique only to round out conventional explanations, not as a starting point.

To continue. Rather than looking at discontinuities, one theory-based approach is to examine fluctuations in GDP. Such business cycle analysis also has behind it a century-plus of cumulative empirical effort. From this perspective, there are many peaks and troughs, and while the economy was relatively stable from the late 1970s through 1991, the recent volatility does not look exceptional in the context of the past 50 years. [See Figure 3.]

The “bubble” – the late 1980s boom – and its subsequent collapse certainly can be analyzed within that tradition. Why did asset prices jump, how great was excess investment, how much did labor demand shift, and how long such negative impulses to run their course? All these

4 Note the limits of this approach: that Japan could grow rapidly, which is the focus of these models, does not explain why it did grow rapidly.
events are essentially short-run shifts, with a frequency of a few years. The economy, however, has been moribund for a decade. Business cycle models are simply inappropriate for analyzing that time frame, and for answering why average growth is low or high. Whether viewed as either a discontinuity or a cycle, for that purpose focusing on the “bubble” is misleading.

Such analysis instead is the domain of growth accounting. In Japan over the past 50 years, high rates of investment boosted the size of the capital stock, helping per capita output to rise sharply, but this process faced diminishing returns. As a result, it is only to be expected that growth would slow, and (less directly) that investment would fall. [See Figure 4.] This was noticeable by 1970, and widely discussed by contemporary economists, at least inside Japan. Starkly phrased, additions to the capital stock in and of themselves are not now, nor will they ever again be, a significant source of growth. Of course the absolute size of the labor force is also now shrinking, and absent large-scale immigration, this will continue; female labor force participation is already too high for shifts there to be likely to fill the gap. Likewise, a large proportion of Japanese youth – half, more than in the US or Germany – go on to obtain higher education directly out of high school. This ratio cannot rise much higher, and with the baby boom entering their mature years, neither will the level of work experience of the labor force expand. Other one-time changes, such as the movement of workers from farm to factory, ran their course long ago. Figures 5 and 6 present changes over time in these contributions to growth; Figure 7 tries to extrapolate these. Growth accounting suggests that the Japanese economy is not likely to grow again.5

Japan thus illustrates one of the lessons that Solow and subsequent economists drew from their empirical work: that the growth of the capital stock and of skills must slow over time, and that absent productivity increases, in the long run per capita growth stagnates. This is not necessarily bad. Japan’s labor force is in decline, and its population will soon start shrinking. As

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5 This is reflected in the aphorism “less bang for the buck,” which here perhaps should be “less yin for the yen.” The overall issue was raised long ago by Jorgenson (1988); a well-known recent article in this vein is Krugman (1995).
a result, the economy can decline in absolute terms with little impact on average welfare. Stagnation is not a bad outcome, and is certainly not a crisis situation in and of itself.

There still remains some possibility for growth. In the short run, the economy can rebound from high unemployment, and by putting workers back to work can enjoy a year or two of modest growth. Nor can productivity improvements be ruled out. In parallel with the earlier shift from farm to field, we now see a shift from factory to services. At present this process is moving all too slowly; while output may not be reduced much by pulling workers out, along with unproductive employees in construction and mom & pop retailers, it will in my opinion prove difficult to transfer such individuals into health care and other expanding sectors. I personally expect this to add comparatively little to growth.\(^6\) In short, we ought to expect Japan’s economy to decline in absolute size. We do not need any hand-waving about Japan’s late-1980s stock market and real estate bubble and its subsequent bursting to explain the current stagnation of the economy – not that the “bubble” did not amplify underlying trends.

This simple model thus provides an antidote to the natural tendency to focus on the dramatic events of Japan’s bubble and its collapse. It is not the whole story, but no model ever is. However, as is true of other powerful models, the insights it offers are capable of generalization.

\(^6\) Technical change increased farm productivity greatly in the 1950s and 1960s; as a consequence it freed up labor that could move to other sectors at little cost in output. From over 50% of employment in the early post-WWII years, the sector “agriculture, forestry and fisheries” now employees under 5% of the labor force, and much of this is comprised of elderly farmers tied to their fields because of the provisions of postwar land reform that precluded both renting out land and consolidating small farms into large ones. Agriculture will shrink further, but it is already too small for that to matter. Technical change in manufacturing is now freeing up resources there; “hollowing out” is both necessary and desirable. As noted, we can also anticipate that workers will shift out of construction and the retail-wholesale sectors, which are by any measure overpopulated. Potentially this enables a similar one-time increase in the overall economy, if resources can be reallocated without a drop in output elsewhere. But in part this will represent a move from production within the household (children caring for elderly parents) to production outside the household (paid care for the elderly) without much real change in the overall prosperity of Japan’s populace. At present I am in the minority. Richard Katz and Hiroshi Yoshikawa, among others, argue against my pessimism, stressing respectively the pervasiveness of idle resources, and at the economy-wide level continued productivity increases.
In particular, they are applicable to Asia’s other large economy, China. The accumulation of capital there has been even more rapid than in Japan; the shift from field to factory is still in its initial stages, but is clearly an important component of growth. Similarly, average education and experience levels remain low but are increasing. As a result, high growth will, I believe, continue for another decade, perhaps even two. But as in Japan, diminishing returns will set in as the capital stock expands. Similarly, a demographic slowdown is already guaranteed; the drop in the birthrate that began in 1980 means that China’s population will be shrinking by mid-century. The same model can both elucidate the potential for continued rapid growth in China today, and its cessation by mid-century.

III. The “Bubble:” Flows in Japan’s Economy

In retrospect, what is surprising to me is not that a financial crisis occurred, but that it took so long to occur. I develop this argument in three segments. First I examine changes in macroeconomic forces, in domestic savings and investment, that inexorably pulled down the growth rate, exemplifying the paradox of thrift that is treated in every Principles textbook. The second step is to look at the outworking of these forces on the flow of funds in the financial sector. Finally, I note the response of financial institutions – above all bank lending behavior – to these changes. While subsequent events revealed deficiencies in corporate governance and government regulation, these are in my opinion secondary. No economy, no financial system, could have survived the shocks suffered by Japan unscathed.
A. Shifts in Savings and Investment

Japan today exemplifies the well-known “paradox of thrift,” that an economy can save too much for its own good. To date macroeconomic policy in Japan has only been able to alleviate this imbalance on a temporary basis. As noted, subsequent sections trace the impact of this imbalance on the flow of funds, and the strain it imposed on the financial system.

One side of the ledger is savings. For simplicity, let us ignore corporate savings, and instead focus on household or personal savings. (This assumption is not innocuous, since swings in corporate savings are quantitatively large, but they do not affect the qualitative outcome of this exercise.) We can then look at the uses of that savings, namely corporate investment. Now the decisions to save and invest are made by different individuals, and there is no mechanism to guarantee that (for example) an increase in household savings will be matched by a compensating increase in corporate investment. Since funds cannot simply vanish, any surplus must end up somewhere. The following clarifies what that means.

As you must know, Japanese households save a lot. That has not always been the case. Before the late 1950s Japan was not notably thrifty; high savings rates did not arise until the 1960s. There is no discernible cultural propensity toward frugality, indeed impecunious behavior seems common to slow-growing economies, including our own. In contrast, once the Japanese economy began growing, households had many incentives to save. Urbanization and the rise of consumer culture led caused workers to set aside money for the purchase of new goods and (more importantly) housing. Education and weddings required funding, too. But above all, savings for retirement was central. Rapid growth is synonymous with a sharp rise in both incomes and the standard of living. As time progressed, this meant that the savings made early in a career – and which may have seemed generous at the time – turned out in retrospect not to add

7 Sheldon Garon at Princeton has done interesting work on savings campaigns, which go back at least to the early Showa era (late 1920s). But such campaigns would not have been needed if the savings rate was high - just as Robert Bellah’s finding of a “Protestant Ethic” in Tokugawa Japan reflects his discovery of merchants fighting against the spendthrift behavior of their heirs.
up to much. That bank accounts, the primary means of saving, earned little interest did not help matters. Indeed, the savings rate peaked following the first oil crisis (1973), when high inflation eroded the value of household financial assets.

However, as noted in the first section, growth inevitably slows, and with it investment. Households, however, keep on saving; they are looking at retirement, 20 or 30 years into the future, not at current growth. Figure 8 illustrates this, showing the continuation of high household savings during the past 2 decades. Where to put these funds has been, is, and will continue to be a challenge, indeed the overriding macroeconomic challenge. Put simply, from the 1970s, Japan has been awash with savings.  

The numbers are quite stark in magnitude. In 1970 corporate investment was 27.5% of GDP; in 1975, it was 17.9% and falling. [See Figure 9.] While this was partially offset by a decline in corporate profitability, the swing was nevertheless huge. Where did the savings go? Initially, they went to the government, which ran enormous deficits in the latter 1970s; when these were reigned, starting under Prime Minister Ohira, growth slowed markedly. But then it was US consumers to the rescue; the 1980s were the only time period since the Korean War when the economy was export led. Unfortunately, for an economy of Japan’s size, it is hard for exports to be more than a temporary salve, since to serve as an engine of growth, they must continue to expand faster than the rest of the economy. By 1986 under the dollar depreciation that followed the Plaza Accord, they had run out of fuel.

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8 While noted by others, the analysis is often idiosyncratic. Richard Katz (2003) talks about “anorexia” but he tries to diagnose this as a complicated by-product of government industrial policy. The closest in spirit to my analysis is Fukao (2001). He, however, stresses the international ramifications, noting that the definition of the various components of GDP implies that, in flow terms, foreign savings (the financial flows implicit in net trade) must equal private savings (savings net of investment) plus government savings (the consolidated net budget surplus), conventionally written as \( (S - I) + (T - G) = (X - M) \).

9 This goes against folk wisdom, but in the 1960s and 1970s, increases in exports were offset by increases in imports; the net impact on growth was thus minimal. Furthermore, exports were and remain a small share of the economy. In these two aspects Japan is quite different from the rest of Asia, or for that matter Europe, and instead resembles the US.
Next, the bubble came to the rescue; a combination of renewed investment and lower savings (the flip side of a boom in consumption) kept the economy going. That, too, was not sustainable. Investment was high with a view to the profits to be made in real estate, and secondarily consumption was high with workers enjoying – or at least their incomes benefiting from – heavy overtime and fat bonuses, as well as profits in the stock market. Amplifying this was a general euphoria, that Japanese firms would drive the global auto industry and Japanese banks would dominate world finance. With hindsight, this exuberance was irrational. But the combination of higher investment and higher consumption (that is, lower savings) buoyed the economy, compensating for the shift to fiscal restraint.

What followed is well known, since it remains the dominant image of Japan’s economy. With the bursting of the bubble consumers saw wealth disappear (though the comparison of the peak of the stock market with today’s level vastly overstates their losses). The same was true for the banks and insurance companies that held most corporate shares. With bubble-induced lending and spending a thing of the past, demand declined and firms were left with excess capacity. Investment in plant and structures plummeted; since 1998, retained earnings have actually exceeded investment for the corporate sector as a whole. [See Figure 10.] At the same time, the retirement of the baby boomers loomed. The aging of society, widely trumpeted in the media from the late 1980s, made it seem only prudent to provide for the future today. Even without bad economic news, it is unlikely that savings would have continued to fall.

As a result, Japan could no longer avoid the paradox of thrift: while in Japan it is individually rational to save, if in the aggregate no one consumes and no business invests, then the economy must shrink. Despite the return of large government budget deficits in the 1990s, the Japanese economy has proven incapable of soaking up such bountiful savings. Stagnation inevitably resulted. Indeed the economy failed even to achieve the low levels that the growth accounting framework of Section II suggested were possible, with excess capacity and chronic unemployment. This is a novel situation, one not faced to date by other developed countries, and
that policy fumbled should not be surprising; even with hindsight it is not clear (at least to me!) that better timing or a more stable set of macroeconomic policies would have worked.

In conclusion, the shifts in the flow of savings and investment traced above were a natural counterpart to the petering out of growth. Such imbalances are almost inevitable when a secular slowdown in the economy is accompanied by the aging of the population. Japan will not be alone in this; China and other high-growth economies will sooner or later face the same dilemma.

B. Shifts in the Flow of Funds: Implications for Financial Intermediaries

Changes in savings and investment behavior were reflected in massive shifts in the flow of funds. If firms were no longer investing, then new channels had to be developed to allocate Japan’s still-abundant savings. Other changes amplified this, since not only were large firms borrowing less, but financial liberalization meant that they were able to borrow from sources other than banks. The combined effect was that large banks lost their traditional customers, and were forced to find new ones. As the next section will trace, that process did not go smoothly.

The change in the flow of funds forced financial liberalization. Beginning with the Occupation-imposed Dodge Plan of 1949 the government had run budget surpluses, or at most small deficits. As a result, there was no market in Japan for government bonds, and private bond issues were restricted to a few select borrowers, primarily electric utilities. Then in 1963 Yamaichi Securities, Japan’s largest brokerage, failed and had to be bailed out. In addition, companies sought cross-shareholdings to forestall hostile takeovers, which in principle were to be allowed from 1964, when Japan joined the OECD. Thereafter firms had no direct financing options; unable to issue either stocks or bonds, their only source of outside funds was the banking system.\(^{10}\) Individual savers likewise had no option but to place their money in banks.

This of course suited officials at the Ministry of Finance just fine, since the firms they monitored

\(^{10}\) Life insurance companies were also important sources of funds; preferential tax treatment meant that Japanese buy far more life insurance than in the US, and this served as a source of long-term loans, partially compensating for the lack of a bond market.
faced less competition. Consistent with this regulatory stance, when the government first began running sizeable deficits after the first oil crisis, private placements allocated bonds directly to banks. But by 1979 they had accumulated a large bond portfolio, and ultimately refused to purchase the full amount the government wanted to issue. Regulators had to allow the development of a bond market, opening a hole in the dikes that segmented different parts of the financial system. The dikes rapidly collapsed; direct finance became possible, and the banking system lost its monopoly over the supply of funds.

At the same time, Japanese multinational corporations developed foreign funding sources, such as the US commercial paper market; they also began issuing “samurai” bonds in London. The deregulation of international finance in 1980 acknowledged this ongoing transformation. So not only were they borrowing less, with the slowdown in growth, they were able to turn to non-bank sources, a process denoted by that wonderful multisyllabic term, *disintermediation*. Banks had to find new customers.

C. Shifts in Lending Behavior

Leverage allows banks to use a small amount of *capital* (here meaning equity or financial reserves) to move a large amount of loans. But it is potentially dangerous: bad loans can overwhelm the cushion of safety provided by the reserves of an individual bank, and even push a financial system into crisis. The typical approach to looking at financial problems is to concentrate on individual shocks, and the circumstances that contributed to them; that leads to a plethora of sometimes idiosyncratic, often mutually inconsistent, analyses. In contrast, I want to stand this formulation on its head: why don’t financial meltdowns arise more frequently?

Two factors stand out when the question is phrased in this manner. First, bankers develop experience in avoiding problems. This is encapsulated in organizational structures and operating rules-of-thumb. In the case of the large Japanese “city” banks that dominated the financial system, these included a focus on lending against physical collateral, primarily real estate, and a
focus on loans to large firms. Many such borrowers were regulated, or were parts of tight oligopolies or otherwise stable industries, and were historically low in risk. Furthermore, during the high growth era even firms that were poorly managed did well enough to survive, so losses were not great. Real estate prices rose steadily; collateral provided a reliable cushion. Banks thus tended to focus on straight loans to support the expansion of borrowers’ ongoing operations; by 1980, they had had a stable set of customers for 20 or more years. These rules of thumb were sufficient for 40 years; from the return of normalcy to Japan at the start of the 1950s until the mid 1990s there were no bank failures.

Second, regulation complemented bankers’ rules of thumb. Following the example of the US, Japanese authorities tried to watch both the asset and the liability side of the system. They limited the opening of new branches and otherwise stunted competition among banks, as an indirect tool to buttress the stability of the financial system. If banks could not grow quickly, they faced diminished incentives to undertake risky (but potentially more profitable) lending. Banks were also required to maintain capital reserves, and were regularly inspected by the Ministry of Finance to check that they were honest, and that they had good management procedures in place. Finally, the authorities insured depositors against losses and prohibited banks from offering higher interest rates than their peers. Customers thus had no incentive to switch banks, or even to pull out their money if they feared their bank was in ill health. With competition muted, banks did not have to bother watching costs carefully. Indeed, they faced incentives that encouraged inefficiency: labor-intensive services and entertainment – and the purchase of shares in their clients – were the chief strategies they could employ to capture share from their rivals.

This cozy world proved a bit too comfortable; the rapid shift in the flow of funds undermined both internal and external checks. As noted, large firms disappeared as borrowers, and by 1980 fiscal restraint under Nakasone reduced budget deficits. Banks thus could no longer supplement their loan portfolio with the purchase of government bonds. What were large banks
to do? If they couldn’t lend to large firms, they could try lending to small, or internationally for project finance.

In reality, such new business was something for which neither banks nor regulators were prepared, a story familiar to those who watched the S&L crisis in the US. It is not that banks did not try. To develop expertise, they dispatched staff to the Small and Medium Enterprise Agency, something I observed first-hand as a summer intern in 1982. But lending in such markets requires very different skills; compared to large firms, bankruptcy rates are higher among small firms. Furthermore, creditworthy small firms were already served by mutual savings banks and other local financial institutions. To garner new business thus required the “city” bank newcomers to pick up less desirable customers, or to offer loans at prices that, given their cost structure, were not profitable. In practice they seem to have done both.

The same pattern can be observed in foreign lending. I personally participated in the international component, during a previous incarnation as a banker, as part of a team making Eurodollar loans to Latin American governments during the late 1970s for a now-defunct Japanese bank. International lending also required new analytic skills, one that as it turned out neither Japanese nor American banks had. (About $2 billion in loans on which I worked went bad.) In sum, everything large Japanese banks tried their hand at tended to go sour.

This was accentuated by the use of land as collateral. Once money began to flow easily, and land prices began climbing, the expansion in lending to small firms looked both safe and simple. Credit analysis, a skill in which Japanese banks were weak, fortunately wasn’t necessary – all that was required was a careful monitoring of collateral. What the money was used for didn’t matter. The monetary policy of the mid-1980s made matters worse. While exports were strong, fiscal retrenchment nevertheless meant slow growth, and interest rates were kept low. That continued with the Plaza Accord of September 1985, under which the US sought a depreciation of the dollar. That policy succeeded better than anticipated. The yen strengthened 50% over the next year, and the Bank of Japan interest rates to (then) record-low levels. That continued into 1987, and a return to “normal” interest rates was further delayed when the US
stock market crashed in October of that year. Easy money was fuel on the fire of bank lending. The more real estate prices rose, the more confident banks were in their lending, and the looser their controls became. At the same time, by their traditional guidelines – bankruptcy rates, collateral, bank capital adequacy – regulators saw no reason to worry. Nor did most foreign analysts see any problems.

Organizations find change difficult, the core assumption of the population ecology literature and an appropriate perspective in the case of an entire industry, and in retrospect they were ill-suited to the new environment. When problems surfaced after 1992, there were no pressures to undertake the sort of restructuring and retrenchment that now appear to have been sensible. Instead, both banks and regulators procrastinated in foreclosing on bad loans and trimming their own branch networks and lending staff. (Despite claims to the contrary, the US is a poor exemplar; delay was also our favored response to banking problems.) In any case, the story of the excesses of Japan’s “bubble” economy and its aftermath, including the bungling of the subsequent cleanup of the banking system and ill-timed on-again off-again macroeconomic stimulus, has been told many times, and is still unfolding; I will not reiterate it here.


In our case, savings and loan institutions (S&Ls), banks specialized in financing residential mortgages, were effectively rendered insolvent in 1979, when interest rates on deposits jumped above the returns they earned on their portfolios of fixed-rate 30 year mortgages. Various “quick” fixes were tried for 10 years, vastly increasing the costs of closing them down and paying off depositors. It was only in 1989 that the Resolution Trust Corporation was established to purchase their bad assets; RTC operations continued through 1995. The process thus took 16 years. However, the danger was well known, as S&L profits plummeted every time interest rates rose. Congress tabled reform proposals in 1969 that would have prevented the crisis from occurring in the first place.

Similarly, regulators exercised forbearance in 1983-84, when banks suffered losses on loans to Latin America (most of which were booked before 1980). It was only with the issuance of Brady Bonds in 1989 that they were forced to start writing down these assets. This allowed, for example, the government to avoid shutting down Citibank and several other money center banks, which were already weak due to bad commercial real estate loans that paralleled the losses of S&Ls. I would argue that the US was merely lucky that the banking sector successfully outgrew its problems, not that we had better policy.
D. Summary

Thrift, a learned trait, imposed a high price on the Japanese economy. Its continuation as growth slowed faced those in charge of macroeconomic policy with an impossible challenge, as demand chronically lagged the supply potential of the economy. It also meant that the flow of funds shifted, and financial institutions proved unable to adjust to this. The “bubble” was thus but one symptom of this more fundamental set of problems.

In this Japan will not be unique. Rapid growth in other Asian economies has already produced shifts in their flow-of-funds that undermined tried-and-true rules of controlling leverage, leading to so far fleeting but nevertheless costly financial crises. As these economies see their population age, and investment fall, they too will face the paradox that plagues Japan today. China will be the most vulnerable.

IV. The Aging Society: Assets and Liabilities in Japan’s Future

Japan is now on the threshold of one of the most fascinating transitions in human history: natural population decline due to an increasingly elderly population. This is not a prediction; it has in a sense already happened. That is because at any point in time the size of the adult population 20 years hence is already known, since we know the number of children in the population. [See Figure 11.] Even a large rise in the birthrate cannot change that – and since Japan’s birthrate has declined monotonically for over 50 years, there is no reason to expect change on that front.13

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13 Immigration to rise during the coming decade. Japanese society is flexible in this regard; I lived in a section of Tokyo that, during the height of the “bubble” in 1991 had over 10% non-native residents. However, it would require a very large influx – over 300,000 a year – to offset the population decline, leaving 1/6th of Japan’s population comprised of (presumably Asian) newcomers by mid-century. This might have happened, alleviating the negative forces stressed in this paper, had the bursting of the “bubble” not led to a premature collapse of growth. Migrants are by nature ambitious, and are now less inclined to look toward Japan.
This transition ought to be of interest to all social scientists. There is a small body of literature in anthropology and sociology on cities and regions where the young have moved out. Perhaps that gives some sense of what Japan’s society will soon look like, but in general there is comparatively little work on this topic. Economists are no different. There is a growing literature on “generational accounting” and on projections of social security costs. However, while our students have a vested interest in such topics, we do not; it is difficult to motivate researchers (and those who fund them) to devote their professional lives to predicting the shape of their grandchildren’s world.

Various analytic approaches offer insight. The growth accounting of Section II above provides one such framework: a falling labor force will likely to lead to declining aggregate output. Section III can be extended as well: those retired dissave (or at least save less, and pass on assets to their heirs), so that as the number of elderly increases, Japan’s savings-investment imbalance will ease. However, this transition will occur gradually, and it will probably not be until the decade after 2010 that Japan will see relief from its current surfeit of savings.\(^\text{14}\) Both stock and flow analyses suggest that Japan’s economy will show minimal growth for the remainder of our lifetimes.

Here, however, I want to look at the future economy by listing up the liabilities the government has incurred, and the assets it has to offset these. Japan, like most developed countries, set up a social security system in the early 1960s that includes cash payments to retirees and provides comprehensive health insurance. This represents a large liability. Though the Japanese health care system is far more cost effective than that of the U.S., as the population ages, obligations will rise inexorably. Reforms, such as funding nursing homes and care at home as alternatives to hospitalization, can only pare the rate of increase. Indeed, per person costs for the elderly have risen by 33% over the past decade, as modern medicine extended life

\[^{14}\text{However the decline of the working age population will also engender a wane in investment and slower growth in the capital stock. This makes projections of the net impact on private savings (S \(-\) I) quite sensitive to assumptions.}\]
expectancy.\textsuperscript{15} Likewise delaying the age at which pensions begin only make differences on the margin.\textsuperscript{16}

Another contrast with the US is that the current generation is saving. However, output in an economy cannot readily be stored. While investment can expand total future output, health care services are consumed when they are produced. Hence the burden of caring for tomorrow’s elderly ultimately rests upon tomorrow’s workers. An aging society means that this burden will increase, and so the share of the national pie that workers will be able to consume will come under pressure, indeed will fall considerably.

The ratio of elderly to those in the working age population is one quick indicator of the magnitude of these pressures. Today it is about 27\% (3.7 people age 20-64 for each elderly person); by 2025 that will rise to 47\% (or a mere 2.1 working-age adults per retiree). A declining number of youth will only partially compensate for that, for reduced costs for education will be replaced by (much) higher costs for health care. On net the costs to those of working age must still rise, and indeed the age structure guarantees that they must rise significantly from a macroeconomic perspective.

Second, the fact that the saving rate is high is of scant benefit. At first glance, some of the costs will be born by the elderly, as they dissave. However, this requires that someone else be

\textsuperscript{15} Health care is, as a first approximation, both comprehensive and compulsory, and hence avoid some the “adverse selection” issues. In contrast, under the US patchwork of overlapping providers, many relatively healthy individuals are allowed to opt out from contributing, undermining the viability of insurance. The result is both the haphazard provision of health care, and unfairly high costs for those who have insurance and must indirectly pay for those without. In addition, from a US perspective, Japanese health care costs are quite low. It is not, however, that Japan is unusually efficient, but that no other nation has a health care system as inefficient as ours. We not only have costs almost twice as high, but under an array of public health metrics we also have poorer delivery of services. Note, though, that Japanese retirement benefits are more generous than ours.

\textsuperscript{16} Delaying the age at which retirement benefits can be received by one year both delays the onset of fiscal pressure and permanently shifts the ratio of those working to those retired by a percent or two. The effect compounded over decades is large, and must be modeled in any attempt at detailed projections. It is not critical to my analysis, which is qualitative in nature.
saving, in order to buy their assets. Indirectly, therefore, those of working age population still bear a burden, since they must reduce their consumption to generate the savings to purchase the assets of the elderly.\(^\text{17}\) That choice, of course, is voluntary. In contrast, if current levels of social security and health care support are maintained, then social security taxes must rise to 30\% of income, generating an effective income tax rate in excess of 50\%. Alternatively, the consumption tax must go from its current level of 5\% to 25\%, and benefits must be cut.\(^\text{18}\) In any case, this represents a swing of 10\% of GDP – a large but not impossible amount.\(^\text{19}\)

It is very hard to peer into the future, but a shift in taxes of this magnitude cannot help but be politically contentious. What is already certain is that that process will be inequitable: those already retired benefit relative to their children. Today’s elderly are drawing national pensions and receiving national health insurance. But under the *status quo ante* level of benefits and taxation, they incurred few obligations in their younger days to support their own parents. Younger Japanese face a different situation: they will have to pay high taxes to provide for the elderly, but will in the most optimistic scenario not receive higher benefits. Realistically, they must expect to receive substantially *less* than their parents, and already the government is moving both to extend the retirement age and to reduce payouts. How will the youth of today react to an environment in which they work to pay taxes, but have to look forward to a less substantial receipt?

\(^\text{17}\) One “traditional” way to do this was for children to provide for the elderly; in return, they would inherit the family farm or home – realistic in that, unlike in Germany (but similar to the US), 60\% of households own their residence. However, this system is breaking down, because the burden of caring for parents can outstrip a family’s current resources, since the children of the elderly may themselves be nearing retirement. In any case, the underlying adjustment – children must reduce their own consumption to provide for the elderly – is identical. It is just harder to generate accurate data as to the magnitude of within-household provision. A recent attempt to do this is Horioka et al. (2002); they find little evidence of a conscious behest strategy in Japan.

\(^\text{18}\) This is Japan’s national sales tax. The US is the only developed country without a national sales tax or national value added tax.

\(^\text{19}\) Since there are a wide variety of baselines used, it is not possible to directly compare such estimates. The 10\% number is my back-of-the-envelope extrapolation, from the shares of income (or consumption) in the economy. It is consistent with the tabulations in OECD (1997), and roughly comparable to that of Dekle (2002).
comfortable old age for themselves? Again, this is to my knowledge a novel situation, and we will have much to learn from observing what happens in Japan.

Let me attempt one very different way to summarize the dilemma, which is to try to add up the assets and the liabilities of society, through an informal extension of generational accounting. For the public sector, this can be done by adding up the benefits that a given generation can expect to receive over its lifetime, under the current structure of government programs. This ranges from education provided to the young, to the police and fire services provided for all citizens,20 to the social security provisions the current structure would provide for them when they are old. Properly discounted, this provides a summary of public sector liabilities to a given age bracket. Similarly, using current tax levels and projections of future income, public sector assets are estimated. Obviously such a procedure requires many assumptions, and so can only provide a sense of the general magnitude.

The bottom line, however, seems relatively robust: the Japanese public sector is fundamentally bankrupt. In order to balance assets and liabilities, some combination of increases in taxes and reductions in benefits will be necessary. This is a reiteration of what was stated above, that a large rise in taxes plus cuts in benefits are needed. However, it serves to highlight that the differences will be across generations, and stresses the magnitude of changes that must sooner or (not too much) later be made. The normal summation of generational accounting exercises focuses on the generational disparities. The extreme case older retirees, who are receiving 8 times what they paid in while they were working. Such a disparity is clearly not sustainable. Those just entering the labor force will pay out more than they receive. Indeed, the current generation appears to be leaving the next generation short by about 10% of GDP.

20 In practice, this is netted out, under the assumption that most of the benefits accrue to current taxpayers, who thereby pay for such benefits, and in a manner that does not single out only some members of society. In contrast, it is possible to link the benefits of education to a particular generation or cohort, whereas the costs are born by older generations of taxpayers.
Again, as noted above, that is not an insurmountable burden, but it understates the true magnitude of government liabilities. That is because we also should add in the costs of bailing out the financial sector into this framework. The banking system is insolvent, with very low levels of capital and bad loan losses conservatively estimate at ¥25 trillion, or 5% of GDP. Guarantees to depositors mean that the government will ultimately be responsible for much of this. Problems do not end there. The Japanese post office is the world’s largest financial institution, with ¥250 trillion ($2.5 billion) in deposits. These funds have been handed over to the government, which has used it through FILP (the Fiscal Investment and Loan Program) to underwrite the construction of toll roads, bridges, and railroads, and to support small business loan guarantees and a host of other programs, including subventions to local government.21 Many of these individual programs have not only run operating deficits for their entire history, but hold assets of little value. Bridges that no one will never pay back the bonds issued to cover construction costs. For all practical purposes, the government is liable for this difference. FILP-related losses likely will total ¥75 trillion, or 15% of GDP. In addition, life insurers face many problems, and must unilaterally reduce payouts on policies if they are to remain solvent; since Japanese hold a much greater amount of their wealth in insurance than do Americans, this also needs to be factored in. At the moment, therefore, the liabilities of financial institutions, public and private, are at least ¥100 trillion, or 20% of GDP, larger than their assets.

Losses of this magnitude certainly can be born; how that will be done in practice is unclear (Beim 2002). Japan already has (gross) government debt of 150% of GDP, and is currently running a fiscal deficit of 9% of GDP.22 In the short run that is not a problem, because interest rates are now extraordinarily low. As a result, the government’s interest payments on its

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21 Current reform proposals will let the postal savings system invest some of its own assets – which, since it lacks any such experience, it is unlikely to do well, as argued in Section III.

22 Some of the bad government assets noted above are already included in this gross number and so are double-counted. In contrast, good assets need to be deducted. I have not tried to make these corrections; I believe that such increased accuracy would not change the qualitative nature of the results I present.
ballooning debt actually are smaller than they were a decade ago. Nevertheless, the government will need to begin cutting its deficit before the end of the decade; Prime Minister Koizumi is pushing for austerity now. Adding in 20% to cover bad debt, and another few years of cumulative deficits, and governmental debt will reach 200% of GDP. Such debt can be rolled over, but interest must at least be paid. If interest rates rise to 3% (from the current .75%) then this will increase interest payments by 5% of GDP.

Let us add all these up. [See Figure 12.] A 9% of GDP increase in taxes (or decrease in benefits) to eliminate the deficit; a 5% of GDP increase in taxes to cover the servicing of government debt; and a 10% increase in taxes to cover the costs of the retiring generation. This gives an increased tax burden of 24% of GDP. Currently regular taxes comprises 23% of GDP and social security taxes another 14%, for a gross tax rate of 37%, roughly the level of the US and the UK. Future changes will thus push the gross tax rate to 61%, roughly the level of France.\(^{23}\) Japan would move from the low end to the high end of tax rates in the OECD. Such a change is thus clearly feasible. But tax increases will depress what would otherwise be at best slow economic growth. I thus do not expect the Japanese economy to grow again on a sustained basis during my lifetime.

V. Conclusions

I have employed 3 simple approaches to look at Japan’s economy. One is a basic “growth” accounting exercise, which looks at changes in the stock of the factors of production. Since the labor force is currently declining and will continue to do so for at least another 3 decades, this suggests slow or no growth into the foreseeable future. Second, the flow of savings in the economy shifted markedly during the postwar era. This underlies both the bubble, and the current banking crisis. The “paradox of thrift” that Japan faces due to this combination of high savings and low investment provides a separate impetus towards slow growth; this imbalance is

\(^{23}\) Data are for 1999, but levels of aggregate taxation tend not to change quickly. See Table 3-7 in Keizai Koho Center. *Japan 2002: An International Comparison.*
also likely to continue through the end of the decade. Finally, both the government and financial institutions have incurred a vast array of liabilities to the current generation, from promises to provide retirement benefits and health care to promises to guarantee the value of bank deposits and insurance policies. Unfortunately assets – including bank loans to healthy companies, fiscally sound public works projects, and future tax revenues – are much lower than financial sector and government liabilities. Furthermore, the starting point is high budget deficits. To avoid reneging on promises to retirees and savers, and to eliminate deficits, will require an increase in taxes by 25% of GDP. The fiscal drag that will result is the third reason that the Japanese economy will not grow again.

All of these issues are linked, directly or indirectly, to Japan’s demographic transition. Some of these problems are unavoidable, such as the rise of the dependency ratio of retirees to current workers. But others are in part a consequence of poor policy; financial bubbles are not inevitable, and the burden of thrift need not be so high. Analyzing these is important. The US, too, has an aging population, though Europe in general will age more quickly. But the real beneficiary of such analysis will be China. The precipitous drop in the birthrate that coincided with the end of Mao’s pro-natalist policies means that its aging process will occur even more rapidly than Japan’s or Europe’s. Analyzing Japan not only provides useful fodder for standards sorts of economic analysis, but also food for thought for those looking at the rest of Asia.
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