

## A Demographic Perspective on Japan's "Lost Decades"

Reiko Aoki<sup>1</sup>

Center for Intergenerational Studies, Hitotsubashi University

The Japanese economy has not grown since the asset bubble burst in 1990. Stock markets have not yet recovered and the unemployment rate has remained high, by Japan's standards, despite a zero real interest rate (held down by deflation). Initially, the years of economic underperformance were called the "Lost Decade." A widely held view was that Japan had not bounced back because of a lack of effective economic policy. But after another decade passed without significant improvement, those years are now called the "Lost Decades." The emerging consensus is that the causes of the Lost Decades are to be found in fundamental aspects of Japanese society and economy.

My argument in this essay is that the economic stagnation of the Lost Decades is a symptom of problems brought on by demographic changes in Japan since the end of World War II, notably the population aging caused by low fertility and increased longevity. Institutions that had functioned well under a growing supply of labor in expanding markets, such as social security schemes, labor market practices, and the political system, failed to adapt. In addition, the shifting age structure worked against badly needed economic adjustments, as resources continued to be directed toward the aging members of the society. The burden of old age support has become the responsibility of the relatively smaller young age cohorts, creating a situation that is very difficult for the society to correct. Japan's traditional respect for the elderly means that taking resources away from the old is socially unacceptable; it is also politically difficult, because the older generation forms a very large voting bloc. In the conclusion I describe the country's demographic prospects and take note of possible interventions that might yield better outcomes: some of them specific to Japan, others that

---

<sup>1</sup> I am very grateful to Ethel Churchill and other editors for their patience and guidance. This essay would not been possible without their advice. Aoki received support from academic project on Economic Analysis of Intergenerational Issues: Searching for Further Development, funded by the Grant-in-Aid for Specially Promoted Research from Japan's Ministry of Education, Culture, Sports, Science and Technology (grant number 22000001). The manuscript is prepared for Population and Development Review Supplement, Population and Public Policy: Essays in Honor of Paul Demeny.

would apply to any aging society. Japan is the world leader in this demographic change. There may be lessons for other societies that eventually must follow Japan's demographic path.

## **Background**

The foundations of Japan's current economic and legal system were established immediately after the end of World War II. The revised constitution became effective in 1947. In that year, the total fertility rate (TFR) was 4.54, life expectancy was 50.1 (men) and 54.0 (women), and the median age of the population was 22 years. An economic boom associated with postwar reconstruction and the Korean War followed, along with a brief surge in fertility paralleling the Western baby boom. A 10-year plan to double the national income was implemented in 1960, achieving its target in six years. During this time, the TFR steadily declined while life expectancy and the median age of the population steadily increased.

The economic downturn began in 1989, when the Bank of Japan, fearing inflation and overheated assets markets, raised its policy interest rate in a series of steps from 2.50 percent to 6 percent by the summer of 1990. The Nikkei average stock price index fell from over 30,000 to below 20,000 by 1995. The unemployment rate increased from 2.1 percent in 1990 to 3.2 percent by 1995. The bubble had burst. The Bank of Japan then began to cut the interest rate until it reached 0.3 percent in 2001, but the Nikkei average remained below 20,000 and unemployment had reached 5 percent by that time. The nominal Japanese GDP has remained flat for over two decades. The Nikkei average dropped to below 10,000 after the Lehman Brothers crisis in 2008 and has not recovered.

The year 1990 was also a demographic landmark. By then, life expectancy had risen to 75.9 (men) and 81.9 (women), and the median age of the population was 37. It became evident during 1990 that the TFR for the previous year had dropped to 1.57—a fact is now referred as the “1.57 shock.” The number was significant because it was lower than the 1966 TFR (1.58). According to the Chinese zodiac, 1966 was the “Year of the Fire Horse” (“*Hinoe-Uma*”), in which parents prefer not to have a child. That fertility could be so low in a non-*Hinoe-Uma* year became a source of public concern, calling wide attention to the fertility situation.

In response, the government introduced various pronatal policies. However, unlike the economy, which had begun to show some improvement, the TFR continued to decline. In 2010, the TFR was 1.39. Life expectancy had continued to rise through the Lost Decades, reaching 79.7 (men) and 86.4 (women). The median age had risen to 47.

## **This Time IS Different**

Japan's economy has recovered from major economic shocks in the past. The last one was the OPEC petroleum price hikes in the 1970s. At that time, Japan's recovery was assisted by demand for fuel-efficient cars, a market that Japanese manufacturers dominated. Japan also had an ample supply of engineers, scientists, and skilled workers to support innovation and production to meet the global demand for Japanese manufactures.

Why has Japan not been able to recover economically this time? Several factors have changed since the 1970s. Internally, population growth has halted and the population is aging, with implications not only for labor markets and social services but also for knowledge base for innovation and production. Externally, Japan's comparative advantage has changed. China has replaced Japan as the major manufacturer of electronics and electric appliances. China also can provide labor comparable to Japan's in quality.

## **Macroeconomy**

The direct consequence of an aging population is that the pension system becomes unsustainable. This topic has been discussed in detail elsewhere, and I will not dwell on it here other than to point out the unwillingness of society as a whole to correct the problem. A few adjustments have been made to accommodate the age shift. The age of eligibility of *kosei nenkin*, one of the two public pension schemes, has been raised from 55 to 65. A law was passed to index pension payments to the price level, allowing both for inflation and deflation. Deflation is a very important factor in the economic stagnation of the Lost Decades. Legally, deflation adjustments have been required since 2005, but the change has not yet been implemented: deflation adjustment would mean a reduction in nominal pension payments, an unpopular move—especially among older voters.

Stopping deflation to prevent further stagnation is one of the key aims of a successful economic policy. Deflationary expectations make people wait for their money to increase in value, which reduces current demand for goods. Excess supply leads to price cuts, fulfilling deflationary expectations. Deflation often involves a cut in wage income for those that work, from either lower wages or fewer opportunities (less work and less overtime). However, deflation benefits those on fixed incomes, such as pensioners, since the same amount in Yen

buys more. Deflation adjustment would undo this appreciation, holding purchasing power constant.

Similarly, the recent appreciation of the Yen against other major currencies hurts the younger generation much more than the older generation of pensioners. Many Japanese firms depend on exports and thus profits decline with a higher exchange rate. Firms adjust by reducing labor costs by either hiring fewer staff or reducing wages. There is downward rigidity in base wages but Japanese firms are able to adjust using “bonuses,” which are paid twice a year and may amount to several months’ wages. Bonuses are contingent on firm performance, not individual performance. But pensions are not adjusted to reflect firm performance. Premiums and tax revenue may fall, but pension payments are not indexed to any sort of revenue. Hence the current Japanese economy is not necessarily bad for those on pensions. In contrast, workers are likely to be harmed by deflation. Inflation (in moderation) is a very good way of reducing the country's large national debt, which will otherwise be a burden on future generations.

### **Human Capital and the Labor Market**

With few natural resources, Japan's people are its greatest resource--a fact drilled into Japanese from an early age. There has always been a strong emphasis on investment in human capital. Education is given a high priority at home and labor practices have promoted firm-specific on-the-job training. The expectation of “lifetime employment,” at least as an ideal, meant that firms could recoup their investment over their employees' working lives .

This combination of labor practices made Japanese firms very competitive in the world market of manufactured goods. However, this system relied on population growth and became unfeasible when that growth ceased. In its place, firms have turned increasingly to “non-regular workers” –those on short-term contracts. Such workers have little opportunity to accumulate human capital and limited chances of promotion.

Non-regular workers are disproportionately young and their numbers have risen significantly in the past two decades. Since older workers often have lifetime employment and job security, the young bear most of the adjustment burden.

Initial wages under lifetime employment were very low because workers implicitly paid for being trained. However, wages were in effect guaranteed to rise in the future to allow the young to make long-term commitments. The change in employment status among the young

has several long-term implications. First, firms are no longer willing to invest in the human capital of their employees. Workers accumulate fewer skills and have poorer wage prospects, whether in their current job or in the outside labor market. They are forced to delay marriage and starting a family, putting further downward pressure on the fertility rate and hastening population aging. Long-term planning has become very difficult for the young generation.

Less on-the-job-training means that firms perforce rely more on the skills and knowledge of their older workers. Hence firms continue to do what they did well two decades ago: traditional manufacturing, such as cars and electric appliances. The aging work force and its outdated knowledge of science and technology make switching to new industries difficult and slow.

These traditional manufactures are no longer profitable for Japan. They have become commoditized, relying for profit on low-cost production based in low-income countries. Higher value-added products, such as sophisticated electronics, require cutting-edge knowledge and expertise—embodied in younger workers and researchers who have started their careers with the latest technological training. Few firms are able to engineer this shift.

### **Science, Technology, and Innovation**

There is a keen awareness in Japan that the country is now facing many challenges from emerging economies like Brazil, Russia, India, China, and South Africa. Japan needs to find new sources of comparative advantage. More immediately, there is an urgent need to find alternative sources of energy to replace the idled nuclear power plants. These issues have been debated repeatedly, but change has been very slow. Shifting workers from one sector to another is impeded by lifetime employment. And researchers and academics with stakes in the older technologies are poorly suited to supporting the development of new industries. Recruitment patterns in Japanese universities do not support the risky, but high-return, staffing bets on young researchers in the way that American universities use tenure track appointments. The difficulty in updating skills and knowledge, partly a consequence of population aging, is a serious factor in preventing recovery from the Lost Decades.

### **Female Work Force**

Women in Japan are well educated but not fully integrated into the general labor force. About 50 percent of women obtain four-year college degrees, compared to 70 percent of men.

(Another 15 percent of women obtain junior college degrees—an unusual option for men.) The ratio of women to men in tertiary education is smaller than in most OECD countries, and this ratio worsens as careers progress. At each stage of higher education and career, proportionately more women than men drop out. In the work force fewer women are promoted. Some women, of course, opt to become full-time mothers.

One offset to the declining labor force is for more women to enter. Recently, terms such as “gender equality” and “promotion of women in the workplace” have been replaced by the term “work–life balance.” The shift reflects the fact that female labor participation has become a macroeconomic necessity, needing to be promoted independently of political concepts such as equality. A work–life balance is also relevant for men. International comparisons of time-use surveys have shown that household chores and childcare (measured in time) are concentrated on women in Japan while the burden is spread more evenly between men and women in other countries. The evidence implies that there needs to be changes at home as well as at work to induce women to work outside the home.

This time-use evidence also suggests that, compared with women, men devote too much of their time to work and not enough to home life. Greater participation in the pleasures and challenges of parenthood by men would also mean a better work–life balance for their partners. Fortunately, that balance has become easier to achieve in the present economic circumstances in which there is less opportunity for overtime work. (A further impetus to reduce overtime in Tokyo resulted from the electricity shortage that has followed the 2011 Fukushima disaster. Tokyo firms kept shorter hours and fathers found themselves picking up their children from daycare.)

### **Foreign Workers**

Many countries depend on immigrant labor. Japan does not have a tradition of accepting immigrants. Citizenship is by birth (*jus sanguinis*), and naturalization is comparatively rare. It is not impossible, as demonstrated by the existence of un-Japanese-sounding names among Japanese Olympians, but it is reserved for exceptional cases. The numbers that would hypothetically be required to make up the labor shortage from changing demographics are several orders of magnitude more than the level of immigration that Japan has experienced so far. Public opinion is overwhelmingly of the view that the values of Japanese society are not consistent with immigration. This view prevents any move toward increasing immigration as part of “policies toward offsetting low fertility,” although that possibility has often been

debated. A more realistic option is the admission of foreign temporary workers who will eventually return to their home country. These guest workers contribute to Japan while young, but long-term obligations to them are limited: they may not collect pensions and do not draw on Japan's health care system in their old age.

Officially, Japanese acceptance of foreign workers has been unenthusiastic. For instance, a program admits trainee nurses and care workers (for the elderly) from the Philippines and Indonesia to study and eventually work in Japan. There is an acute shortage of health care workers. However, the foreign candidates must take the same qualifying examination as local candidates, requiring mastery of Japanese—a serious obstacle. While some language skill is needed, there would seem to be room for compromise if there was sufficient interest in the foreign recruitment. The problems implementing such a program send a signal to other potential immigrants that Japan does not welcome foreign workers.

Nevertheless, Japan is bound to increase its intake of foreign workers and there is some evidence that foreign workers find ready acceptance despite the cautious official stance. Reliable statistics of foreign workers have been recorded only for the last two decades: over this period, despite rising unemployment in the general population, the number of foreign workers has increased sevenfold. Among university faculty—a critical group for the country's technological future—the numbers of foreigners is very small by US and European standards, however, and particularly so in the top universities.

### **Fertility Policy**

Following the 1989 *Hinoe-Uma* shock, various “policies to address low fertility” were adopted. Typically, the word “problem” is omitted from their title, so as not to imply that low fertility *is* a problem. Similarly, they do not refer to “pronatal policy”: the idea that women could be strongly urged to have children is seen as almost reactionary. As Demeny pointed out in 1986, family planning—aimed at lowering unwanted fertility—is part of a progressive ideology that is often associated with the liberation of women. It would follow that pronatal policies, in that respect the reverse of family planning, are antiprogressive: seeking to force women to have children. (Indeed, some people, including politicians, claim that Japan's low fertility is a result of women’s selfish behavior.)

Needless to say, this dichotomy is false. If women were being coerced into *not* having children, then having children would be progressive. The proper question is rather: should

women be expected to behave a certain way, be it having children or not having children, or should they be free to choose to have children or not. The latter is progressive, as is family planning if it gives women freedom not to have children even when that goes against the social norm. There is a further question of whether fertility decisions should be made solely by women. If fathers are expected to play an active role in child rearing, their interests should presumably also have an influence on the fertility decision. This kind of thinking is the underlying rationale for a work–life balance.

Another reason that the word “problem” in reference to low fertility is excluded is because many of the related policies are not strictly pronatal. Increasing the number of daycare centers is one example. This will certainly reduce the cost of having children. There is a shortage of publicly subsidized daycare, which makes both the pecuniary and opportunity costs of having children very expensive. However, building additional daycare centers is also a construction project and so doubles as part of an economic stimulation package. Given the current economic environment, this is understandable, but the as a result any pronatal effect of such projects is at most a minor consideration.

Overall, the amount of money allocated for purely pronatal or profamily policy is too small to be effective. An example is the childcare payment for each child. Initially this was ¥5000 per child per month. To put that figure into perspective, music lessons at Yamaha Music School are ¥4700 per month (three lessons). Although the maximum per-child amount has been increased to ¥15,000, there are new eligibility restrictions based on family income.

### **Cost of Rearing Children**

Child rearing in Japan is very costly to families. Both the direct pecuniary costs and the costs in terms of time required of parents are substantial. Children usually have various after-school lessons, such as piano and ballet or additional academic tutoring. Preparation for entrance exams to selective junior high schools start in the fifth (or even fourth) grade and often extend late into the evening. A parent must escort the child home, even if the school is within walking distance. At weekends there are mock practice exams, often located further away from home. These private expenses have become more necessary as the quality of public schools has deteriorated--perhaps another example of the lack of public investment in the younger generation.

The market for household and childcare services in Japan is very small and underdeveloped. If a woman wants to work outside the home, she must rely on institutional childcare, of which there is a chronic shortage. Lack of household help also makes it more difficult for women to work outside the home. In other developed nations domestic service workers are often immigrants or foreign guest workers; there is no supply of such people in Japan.

In the case of childcare, there is no practice of older schoolgirls babysitting to earn pocket money. Indeed, there is also some societal disapproval of a mother paying someone else to take care of her child. From the supply side, people are uncomfortable with the idea of demanding money to take care of a child, particularly from an acquaintance: that should be done out of kindness, not as a business transaction. A century ago it was common for girls to work in childcare; now, as in any developed country, there are legal restrictions on child labor. What is different about Japan is that informal babysitting hardly exists. Ironically, this protective stance toward children may help to reduce the size of the next generation of children.

Social values that restrict informal babysitting are part of Japanese social norms regarding family. Parents are expected to be very devoted to their children and willing to make sacrifices. Many people do not want to become parents until they can provide well for their children, especially a high-quality education. That requires money and time. In the absence of a market for household services, children are seen as nearly prohibitively expensive for those planning a career outside the home.

### **Policies and Prospects**

Japan's demographic situation is in some respects a product of its unique cultural circumstances, and in other respects the familiar outcome of post-industrial affluence and a completed demographic transition. The range of plausibly beneficial policy responses reflects both these aspects. Successful policies must also take into account the technological environment, in particular the fact that communication and transportation technology has changed the nature and effect of globalization. Fertility will not increase without an improvement in the economic outlook. However, the economy cannot improve without addressing the problems of existing institutions trapped in the current demographic situation, such the aging labor market. We cannot wait for population to increase through pronatal policy, even if Japan were to find an effective such policy. Thus the demographic and economic problems need to be addressed simultaneously or the economy needs to be improved at least

to a level where the economic outlook is more conducive to starting a family. Life-work balance policies would address changes in both labor practices and the child rearing environment. Making it easier for workers from abroad to work in Japan can regenerate the age profile and the skills of the workforce relatively quickly. Although Japan has hit the state of ultra-low fertility, the world as a whole still has not. Globalization will work to reallocate the population given uneven fertility rates. The current political system is unable to correct the pension system or any other aspect of the intergenerational distribution within the country. A change in the political system is necessary for a fundamental realignment in the intergenerational distribution. The existing system works only if the future generation is larger than the current one, so that they constitute the majority.

Life-work balance policies will allow partners to share work both in and outside the home. Sharing work outside the home does not mean literally sharing a single position. It means a household will have a portfolio of work allowing it to pool the risk of unemployment. A household with a single earner with no risk of unemployment will no longer be the norm. With access to the global labor market, Japanese firms no longer need to invest in human capital themselves which life time employment made possible. In fact, such a strategy is more risky as workers also have better access to global market and can leave the firm. Immediate utilization of female work force is a very quick way of increasing highly educated labor.

Dependence on workers born abroad has already started and will continue. Japan will never have an immigration policy akin to United States or Australia, countries of immigrants. Even in those countries, immigrants have kept much closer to their country of birth than they did a century ago. The lower cost of communication and transportation makes it possible to work in one country for a significant length of time without immigrating. The diminution of the institution of “regular worker” or life time employment is conducive to an increase in this form of employment. This form of employment may become the new “immigration” worldwide in the 21<sup>st</sup> century.

Successful promotion of life-work balance and an increase in the numbers of foreign workers will result in labor force growth and economic growth. This will increase the benefit of having children because better economic prospects will increase the expected life time earnings of the children. But the effect of any change of this kind will not occur soon enough to address the pension problem. However the potential insolvency of the pension system may work to increase fertility. Having children may become a more attractive means of saving for old age security than depending on the insolvent pension system.

If the aforementioned policies fail, not only will fertility not improve, the Japanese population will decline faster than at the natural rate. Skilled workers will look for work abroad. Women in particular will find many countries where there are more opportunities. Those who have strong preference for children have greater incentive to go elsewhere. The extent of globalization cannot be overlooked in this respect. Globalization weakens the link between fertility, labor force and economic growth. Japan will reach a point of pension insolvency with the government unable to borrow to fund pension payments at the promised level. At this point a continuation of the current economic and political policies will become infeasible. It is to be hoped that before such a crisis eventuates that there will be badly needed political change and a fundamental intergenerational reallocation of resources finally gain enough support with either a party on such platform will be voted into power or a change in the political system such as Demeny voting (Demeny 1986, Aoki and Vaithianathan 2009) consistent with post-industrial demographics and necessary policy change.

## References

Aoki, Reiko, 2012. "Japan's Demographics and the Lost Decades," CIS Discussion Paper No.561, Center for Intergenerational Research, Hitotsubashi University.

Aoki, Reiko and Rhema Vaithianathan, 2012. "*Intergenerational Voter Preference Survey—Preliminary Results*," CIS Discussion Paper No. 539, Center for Intergeneration Research, Hitotsubashi University.

Aoki, Reiko and Rhema Vaithianathan, 2009. "*Is Demeny Voting the Answer to Low Fertility in Japan?*" CIS Discussion Paper No. 435, Center for Intergeneration Research, Hitotsubashi University.

Asano, Hirokatsu, Takahiro Ito, and Daiji Kawaguchi, 2011. "*Why Has the Fraction of Contingent Workers Increased? A Case Study of Japan*," RIETI Discussion Paper Series 11-E-021. Research Institute of Economics Trade and Industry, Tokyo.

Demeny, Paul, 1972. "Population Policy: The Role of National Governments," *Population and Development Review*, 1(1) (Sep. 1975):147–161.

Demeny, Paul, 1986. "Pronatalist Policies in Low-Fertility Countries: Patterns, Performance and Prospects," *Population and Development Review*, 12(Supplement):335–358.

Kambayashi, Ryo, 2010. "Attributes of Recent Nonregular Employees in Japan," Global COE Hi-Stat Discussion Paper Series 120, Hitotsubashi University (*Jyo-you \*Hi-seiki Rodousha no Shoshou*, in Japanese).

Takayama, Noriyuki and Kousuke Shiraishi, 2012. "Does Bad Start Lead to a Bad Finish in Japan?" CIS Discussion Paper 547, Hitotsubashi University.