Q: Could we begin with a description of your recent research and how it evolved?

A: In collaboration with three RAND colleagues, I recently worked on economic trends in the People’s Republic of China, India, Indonesia, Japan and South Korea, a project funded jointly by the Department of Defense and the Smith Richardson Foundation. This study basically revisited work done in 1989 and 1995 for the Office of the Secretary of Defense that involved examining economic trends and associated military spending and investment in a wide range of countries, some European, some Middle Eastern, and some Asian. In 1994 and 1995, we deepened the research for a subset of those countries to complete a study that has been updated in the last year and a half.

The East Asian financial and economic crisis of 1997–1999 was the motive to go back and see how, if at all, the estimates might change. In the process, we used more recent and better data and amplified the model—which was a standard Cobb-Douglas-Solow aggregate model—for one country at a time. We examined the key parameters of the model by looking at their means for the 10 years before the 1997–1999 turmoil and the variances around those means.

Then, we generally used the means or made some explicit judgmental modifications in such key parameters as rates of growth of capital

---

Interview with the author conducted by Dr. Douglas Ostrom of the Japan Economic Institute and published by the Institute on July 7, 2000.
stock, employment, total factor productivity, military spending in relation to gross domestic product, and military investment (consisting of procurement and construction) in relation to military spending. In short, we examined the key parameters over time, made several judgment calls about them for the future, and did some crude sensitivity testing of the effects of changes in the parameters on the results.

This particular methodology has the advantage of being both transparent and simple. If, for example, you conclude that Wolf and colleagues were off on factor productivity in Japan for whatever reason—and you might very well be more accurate in that judgment than we were—you can make that change and it’s fairly easy to see what the effects are. That is a big advantage over more elaborate models where you’re not sure what’s going on.

Q: What factors did you estimate?
A: We derived estimates of GDP and growth rates of per capita GDP, military spending, and the military capital stock, which represents the accumulation of annual investment less depreciation. We made the arbitrary assumption that military procurement for the years up to and including 1994 would have depreciation rate of 10 percent a year and that after 1994, the rate would be 8 percent.

Those figures might have been too high, but the rationale was that systems purchased earlier would be more likely to obsolesce and depreciate faster than those procured more recently. The decision as to whether that difference is 10 percent and 8 percent, or 8 percent and 6 percent, or 6 percent and 3 percent is quite arbitrary. However, it wouldn’t have much of an effect on the comparisons among the five countries—China, India, Indonesia, Japan, and South Korea.

We used a three-equation model in which GDP was the dependent variable in the first equation. The independent variables were the ones I mentioned. In the second equation, the dependent variable was military spending and the independent variable was GDP with a parameter reflecting the mean and variance of that for Japan and, separately, for the other four countries. In the third equation, the dependent variable was military capital stock in period \( t \), determined by military capital in \( t-1 \), plus the share of military spending devoted
to military procurement in period \( t \), minus the depreciation of military capital stock in \( t-1 \).

**Q:** Where does the study stand now?

**A:** The study is complete, has been refereed and revised, and now is in the final stages of editing.

**Q:** How does Japan come out?

**A:** I am still somewhat bearish about the adequacy and the pace of Japan’s liberalization, regulatory reform, opening and so forth, but this isn’t a binary kind of thing. The question is where between zero and one you place progress on all of these points—the opening of financial services and of Japanese markets generally, for example. Regardless, the pace is quite modest, it seems to me. In looking at the data for Japan over the studied 10 years, I was stuck, among other things, by the decreasing proportion of new investment that is private and the increasing proportion that represents infrastructure and public investment.

But it’s not the proportionality between the two that is striking. If you use a crude Cobb-Douglas-Solow framework and the growth of the civilian capital stock as one of the key parts of the estimated equation, Japan’s output and total factor productivity growth look remarkably low over the 1987–1996 period. Therefore, some judgment must be made about what will happen to the rate of growth of the capital stock and, within that, the proportions of public and private capital formation as well as to factor productivity growth. In the latter part of the 10-year period, factor productivity growth actually was negative. Presumably, the effects of completed and ongoing changes will turn that around—but slowly.

**Q:** Was excessive capital stock accumulation a cause of the negative productivity growth?

**A:** Capital accumulation is higher than it was. That generates low or negative factor productivity, basically because inputs are growing faster than outputs. You have to make some assessment of how that will change. This is a judgment call about the extent to which the reforms that have been undertaken—financial, marketization, ease of entry and so forth—will affect the distribution of capital.
formation between the public and private sectors and how factor productivity will be impacted in turn. Our estimates regarding total factor productivity are positive but modest. When we put all of this together, we got an annual compound rate of GDP growth that goes from about 1.2 percent to 1.6 percent in the years from 2000 to 2015.

Q: The 1990s have been called Japan’s “lost decade.” In the final analysis, its abysmal economic performance was based on the low productivity growth that you described. Why was it so low? Japan’s productivity growth was low relative to the other countries in your study as well as its own record. Why?

A: I’m not sure that I know. Perhaps it was an accumulation of influences on resource allocation that resulted from industrial policy or other priorities, or from criteria other than those relating to profitability considerations. I think that there was an overemphasis on capacity development in export industries and in heavy industries, although the automotive industry has been reasonably successful. In addition, Japan’s pattern of investment has shown less flexibility and responsiveness to market indicators and market signals than has that of the United States.

Q: Are you saying that Japanese companies already had bad habits or developed them?

A: I think that they developed bad habits that were nurtured by counterproductive and offsetting industrial policies.

Q: These kinds of behavior have persisted into what is a new world?

A: I’m not saying that habits remain the same in Japan but, rather, that the rate of change has been slower than in the United States, for example. Japan has been more rigid, more inert and more resistant to change. There are indirect indicators in the quite remarkable pace of mergers and acquisitions, for instance—and not just foreign M&As but domestic ones as well.

I have written on the relative importance of the World Trade Organization and corporate mergers in the new business environment. In terms of so-called globalization and liberalization, the influence and importance of the WTO has been somewhat exaggerated by both its
proponents and opponents. More of the action underway in terms of liberalization and market-opening is through transborder M&As. I think that in the context of our discussion, the pace of M&As—not only transborder but in Japan—is a significant indicator that perhaps too little attention has been devoted to changing the old bad habits.

Q: How does that work?

A: As a general rule, if one company’s habits are worse than those of another firm in a related field, the latter acquires the former. The company formed by the merger would show more responsiveness, adroitness, and flexibility with the merged assets and would be more productive.

Q: That’s what we hope is happening in the automotive industry where, for example, there is participation by Renault S.A. and, to a more limited degree, by Daimler Chrysler AG?

A: Yes, that’s the hope. I think that the liberalization of financial services will have a further effect—probably in the same direction.

Q: In that regard, the Japanese banking industry is involved in some really huge mergers. Twelve of the largest banks have announced merger agreements that, when completed, will result in four superbanks. Is this part of the process? Or is it, as some have speculated, actually the reverse—a “circling the wagons” kind of strategy. In that view, there is no economic rationale for what already are some of the world’s largest banks merging to form still bigger institutions. These experts note the many cultural and other difficulties in Japanese M&As, particularly those involving financial institutions, and conclude that the only reason banks are combining is because they hope somehow to prevent new entries and a more competitive marketplace.

A: Before I answered that question, I’d want to look at the balance sheets of the merged institutions, know who the dominant partner in the merger is and whether the asset portfolio of that dominant partner showed better behavior than the bad habits to which you referred.

Q: In this case, I think that the merging banks are pretty much in the same boat.
A: I’d want to look carefully at that, and I haven’t. But basically the question is whether patterns of investment that can be characterized as bad behavior or the result of rigid habits are changing and, if so, at what pace. In general, the acquiring firm sees some opportunities for deriving more value from the assets being acquired than the holder of those assets has been able to exploit. To the extent that this is the underlying rational that generally applies in M&A deals, one would anticipate some improvement in subsequent capital formation. The initial rationale for acquiring a firm’s assets and paying something more than the firm’s market capitalization is based on the buyer’s conclusion that it can do with the assets what the acquired firm hasn’t been able to do, either immediately or over time. I think that in itself is a harbinger of better habits.

Again, it’s a question of the pace at which this happens. I am not saying that M&As are the only gauge of reform, flexibility and innovation, but, certainly, they are one indicator.

Q: What is the impact of mergers on productivity growth as incorporated, for example, in your model?

A: In my opinion, they are a positive development and a relatively rapid one. While it’s not enough to change the estimate of the total factor productivity from slightly negative to hugely positive, it does have some positive effect.

Q: Part of what you are saying is that the need for mergers may result from past government mistakes—industrial policy of various sorts. Another way to deal with that would be to correct the mistakes directly—in other words, end not just explicit industrial policy but other forms of government intervention in the economy that impede innovation and lower productivity.

A: I’ve focused on M&As because they are obvious. I don’t know which indicator is the right one for basing an inference about the pace at which the internal bureaucratization and the layering of regulatory rigidities is relaxing. There is the danger of looking for the key where the light is rather than where the key fell. We probably give more attention to M&As because they are visible. If you have or could find something about the pace at which regulatory overloads are decreasing or regulations are becoming more flexible, more permeable
or whatever—which I haven’t yet been able to find—that would be terrific.

Q: Another argument implies that regulatory reform is inevitable even without the active support of either Tokyo or corporate Japan. In this view, Japanese companies are quite happy with traditional business practices—permanent employment, to name one. But, at the end of the day, neither government nor industry has any choice. Japan is, after all, primarily a market economy, driven by market forces and profitability. Once companies have to meet a profitability test, they no longer have the luxury of continuing practices like lifetime employment.

A: I would add that government policy now may be less able to provide a cushion through something like debt restructuring for firms unwilling or unable to earn a competitive rate of return.

Q: In the financial sector, one issue has been that large banks, including those that have announced mergers, basically have run out of capital and cannot play their traditional role in creating money. Of concern from a macroeconomic standpoint is the fact that their role in the transmission of monetary policy has been broken.

A: Their ability to absorb the costs of moral hazard created by wayward firms is diminished.

Q: True, but they have problems even providing credit to healthy firms on a market basis because they have written off loans or have made too many bad loans in the past. The government has pumped trillions of yen into the banking system to recapitalize big banks so that they can reenter the market. The question then arises whether this is a kind of de facto coddling of banks on the part of the government.

A: It depends on whether banks revert to previous behavior or whether they discriminate among uncompetitive firms and treat them unequally. For instance, do they use reasonably rigorous lending criteria to determine that a fifth potential borrower has better credit prospects and should have lower loan rate than the previous four companies that applied?
Q: But if the government is standing in the background with more cash to recapitalize banks, all five borrowers may end up being treated equally, even though they shouldn't be.

A: Exactly. Again, it’s not all one way or the other. I would think the assurance that the government is standing behind the equal treatment of the worst of the poor credit risks may be less now than it was in the past. What we found in our study was some improvement, but it was not dramatic.

Q: Do you mean improvement compared with the late 1990s?

A: Yes, especially compared to the last five years. The average growth rate in the 1990s was around 1 percent, maybe a little lower in some years and higher in others but not much.

Q: But we are not going to see a cover story on the Japanese economy in *Time* magazine again.

A: No, not like in the roaring 1980s. And such people as James Fallows, Chalmers Johnson, Clyde Prestowitz and Karel van Wolferen who talked about Japan buying America and the like should stand up and be counted as having been wrong.

Q: In the international context, how do Japan’s prospects compare with those of China?

A: It depends on whether you use nominal exchange rates or purchasing power parity rates since the latter has the effect of reducing Japan’s per capita GDP. Over the next 15 years, Japan still will have a very high level of per capita GDP relative to all Asian countries, even with a 1.5 percent annual growth rate, because its population is stagnant or diminishing. China’s yearly growth rate in our calculations turns out to be something like 5 percent to 5.5 percent in the relatively rosy scenario and about half that in the disruptive-growth scenario. If the Chinese do well and if the impact of this success on the pace of military modernization is significant—and our calculations show that it will be significant—that source of worry may be an exogenous stimulus that motivates the Japanese to do something dramatically faster in terms of regulatory reform than they have shown evidence of doing so far.

Q: How would that play out in Japan?
A: I think Japan would feel that it needed more growth than 1 percent—say, 3 percent a year. But to get to 3 percent, Japan would have to make changes so that profitability and efficient resource allocation through more competitive capital markets and more open financial institutions would make the economy more productive. I’m just saying that things might turn out “better” in the sense of accelerating the pace of liberalization and the rate of factor productivity growth so that instead of 1.5 percent or 1.6 percent growth, it’s another point or point and a half higher.

Q: So, roughly speaking, Japan’s annual growth would be about that rate and China’s would be on the order of 5 percent over the 15-year period.

A: It isn’t constant over the period. That’s what the annualized compound rate turns out to be.

Q: What about a country like South Korea?

A: South Korea’s growth rate is even higher—about 5.6 percent a year.

Q: How do you see the U.S. relationship with Japan—or, for that matter, the rest of Asia—evolving over this period both economically and politically? Perhaps we can begin with China.

A: I think there is a reasonable chance for the resumption of cross-Strait discussions on substantive matters—one of which, but not the principal one, is the one-China issue. Others include the economic issues of liberalization, reform, and market-opening as well as the rule of law. In that scenario, the outlook for the U.S.-China relationship is fairly benign, but there are other variations that would be quite dangerous.

In light of the uncertainty about those paths, the U.S.-Japan relationship is likely to be heavily influenced by the common interests of Japan and the United States in sustaining and nurturing the bilateral security treaty. The agreement to share the R&D costs of a theater missile defense system is one indicator of that.

I don’t see problems with the pace of Japanese liberalization, reform, and market-opening as very likely to vitiate U.S.-Japan relations in the next 10 years as they risked doing in the 1980s and 1990s. We
should encourage Japan, but I am not sure that exhorting the Japanese to do what we “know is right” for them is the best way for the United States to comport itself. At the same time, I don’t see their modest, slow move in the direction that we have been talking about as a source of animosity with the United States.

Q: It may be less of a problem than it would have been 10 or 15 years ago at the time of the 1978 trade act and the smashing of Japanese radios. Have we moved beyond that?

A: I think so, but I don’t think that sort of thing would have the bite that it had at the time.

Q: Of course, some people would say that it’s too bad that Japan doesn’t move except under some kind of threat.

A: It’s up to the Japanese to find their solutions themselves. Or to make an explicit trade-off and say, well, we would rather have 1.5 percent annual growth and keep our system the way it is than to have a higher growth and change the system. They’ve got other problems like a declining birth rate and what to do about it with respect to female labor force participation and also in terms of relaxing immigration rules.

Q: The declining birth rate is potentially a huge budget problem?

A: A huge budget problem and perhaps a social one as well.

Q: That leaves you optimistic on some scores and less optimistic in other ways?

A: A modest pace of reform, liberalization, productivity enhancement, and growth is where I would come out.


A: I think that we are less likely to see that kind of tension because the trade gap with Japan is less important to the health of the U.S. economy than it was, assuming that the “new economy” re-
mains strong, and because there is a greater common security interest between Japan and the United States. There may be some tension but less. But there may be more tension from the China-Japan nexus than there was, and that might provide a different kind of compulsion or responsiveness.

**Postaudit**

*Most of what is covered in this 2000 interview remains relevant and generally accurate. This is especially true of the slow pace of deregulation, decreased factor productivity, and the growth of public investment relative to private investment.*