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REPORT
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Getting to 2% real growth

Productivity revolution

Like so many of his predecessors, Prime Minister Shinzo Abe has vowed to elevate Japan's real growth to 2% per year. This is a rate not seen for any five-year period since the late-1980s bubble popped. Nonetheless, it is a rate we think is possible with the right kind of reform.

The path to 2% is not the one being stressed by Abe, i.e., getting more women and elderly into the work force and persuading Japanese firms to invest more. Rather, what Japan needs is a "productivity revolution." Japan's GDP per work-hour is 26% below that of the richest 17 OECD countries, a shortcoming that has remained stable over the past two decades.

That puts Japan in the position of being able to exploit so-called "advantages of backwardness." It is so far behind global benchmarks that, if it took 20 years to bring its productivity levels up to the 17-country average, that would add 1.2 percentage points to the 1.4% annual productivity growth that Japan showed during 1991-2011. Even with an annual 0.8% decline in working age people, that would still create 1.8% GDP growth (i.e., 2.6% growth in output per hour minus 0.8% decline in the number of workers yields 1.8%). Given the 0.6% annual decline in total population, that would convert into 2.4% per capita growth, a rate last seen in the 1980s (see pg. 4 on per capita growth).

PERSPECTIVE

In a March report entitled *The Future Of Japan: Reigniting Productivity And Growth*, McKinsey pointed out some of the possibilities for catching up. In advanced manufacturing—electrical and optical equipment, industrial machinery, and transport equipment, areas in which Japan once led the world—Japan's productivity is 29% below US levels and 2% below German levels. In retail, a sector now employing 9% of Japan's labor force, productivity is 35% below that in the US.

In America's post-1995 productivity revolution, two-thirds of the acceleration in productivity growth came in a host of "old economy" sectors. Likewise, it is Japan's currently lagging sectors that will either sink the economy, or save it.

Productivity sole source of Japanese growth

Due to the fall in the number of working age people and fewer hours of work per person, Japan's only source of growth over the past quarter century has been productivity. Productivity growth is, in turn, a result of several factors, including:

- Growth in the capital-labor ratio (giving workers more tools);
- Improvements in technology (smarter tools);
- Improvement in worker skills;
- Increased ability of company management to make best use of capital, labor and technology (the difference between Toyota and Chrysler).

Regarding the first factor, the real problem for Japan is not that it invests too little, but that it needs $4.80 of capital stock to produce $1 worth of GDP, compared to $3.10 in the US and $3.80 among an average of 32 countries (see top figure on pg. 2).

Erosion of human capital

One of the biggest obstacles to improving productivity in Japan is the erosion of "human capital," i.e., the skills of its workforce. The rise of non-regular workers is eroding Japan's human capital, in part because firms are reluctant to spend money on workers who may be working elsewhere in a few years. According to the OECD, 59% of firms provide on-the-job training to regular workers but only 29% provide it to non-regular workers. A 2013 study by the IMF entitled, *The Path to Higher Growth: Does Revamping Japan's Dual Labor Market Matter?* reports that "Empirical evidence based on Japanese firm data suggests that workers who receive less training are less productive."

In June 2014, Nippon Steel & Sumitomo Metal had to stop operations at its Nagoya steel plant for more than a day because of power failure. The plant is the company's main production facility for clients in the auto industry such as Toyota Motor. The plant manager revealed that the trouble happened while employees were doing work they had not done before. The required maintenance expertise had not been passed on to the current workforce. *Nikkei* commented: "Steelmakers are not alone in experiencing frequent problems with facilities and equipment. There have been a string of serious accidents at chemical plants in Japan, involving serious injuries or deaths."

Even if short-sighted firms think they'll save money by not training non-regulars, they lose if every firm does that because the non-regulars it hires in the future will have lower skill levels.

Japan should look to some northern European countries with strong centralized business and labor federations, where firms are more willing to train workers who may leave. They figure that, in turn, they'll acquire a worker who has been trained by another firm. This business logic also applies in Silicon Valley.

In some northern European countries, governments spend as much as 0.75% to 2% of GDP on "active labor measures," including worker training. Japan spends the second lowest: just 0.25% of GDP. Austerity-minded types may say Japan cannot afford to spend this

money. We'd argue that it cannot afford not to. Better-skilled workers lead to more GDP growth and thus more tax revenue.

Japan's investment in KBC

One way to boost labor productivity, and thus potential growth, is to give each worker more tools, and this Japan has done. Once a country has become rich, however, there is even more benefit in giving workers "smarter" tools, e.g., moving from the stand-alone PC to the Internet. On this front, Japan falls short.

We noted above that Japan gets less bang for the buck in overall investment. The same is true of firms' investment in "Knowledge-Based Capital" (KBC), which is particularly vital in mature economies. KBC is basically investment in better technology and in the ability of firms and their workers to use it. KBC includes three main elements:

- R&D;
- Computer software;
- Economic Competencies, which includes training of workers, better management skills, and improved corporate strategies.

Japanese companies invest a lot in KBC. Out of 21 OECD countries, Japan comes in fifth at 8.4% of GDP. The average is 6.7%. On R&D, Japan comes in third, investing 2.4%, much higher than the 1.5% average. Where Japan falls short is in investments in economic competencies. Japan comes in second-to-last at just 1.8% of GDP, much lower than the 26-country average of 3.2% (see bottom figure).

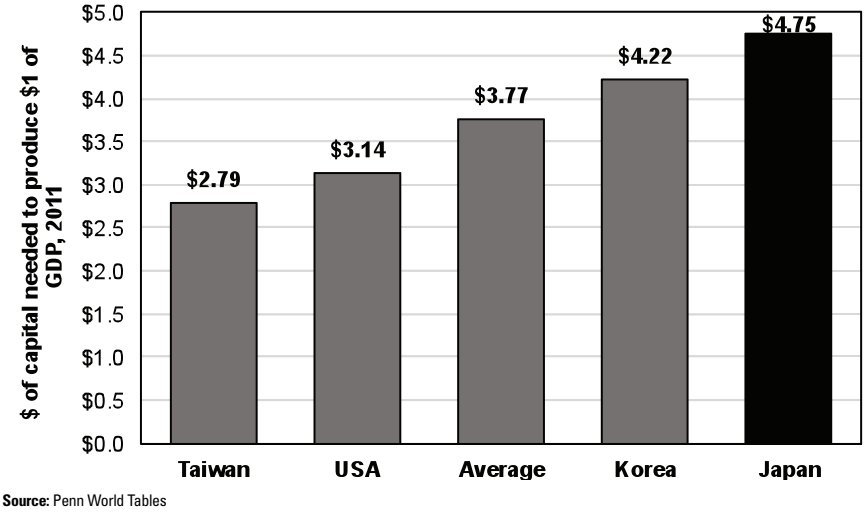
This is a critical lapse because, in the words of one scholarly paper, "economic competencies" are "the means through which technological possibilities are converted into economic activity." Economic competencies range from worker training to strategy, organization and other commercial skills. Economic competency is what divides the still-successful like Toyota from fallen stars like Sony.

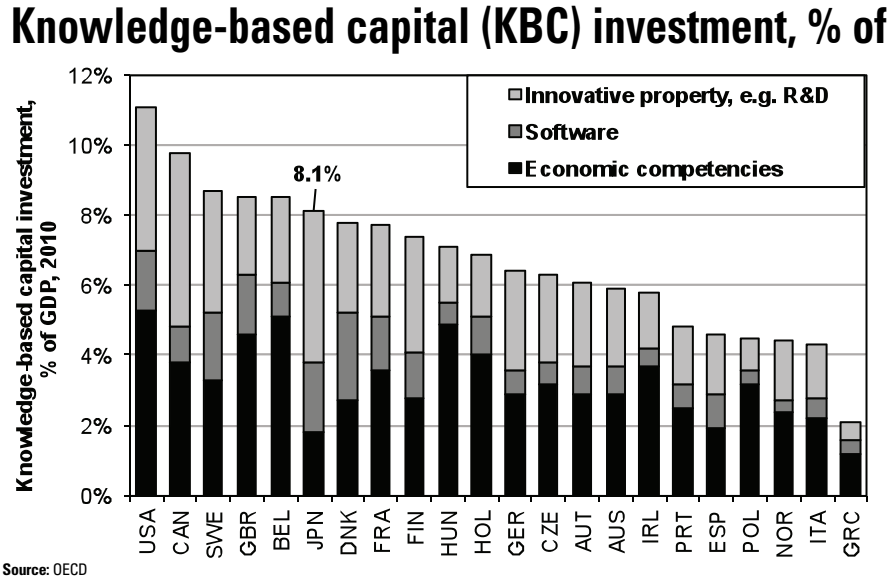
The critical issue of TFP

KBC is pivotal because that is what boosts the most important long-term factor in living standards: Total Factor Productivity (TFP). While labor productivity refers to output per work-hour, TFP means the output per unit of labor and capital combined. TFP is not just better technology but any improvement that gains more output from the same inputs: from new technologies to better corporate strategy to enhanced human capital.

On average, among 13 top OECD countries, TFP provided nearly 40% of all growth in labor productivity during 1996-2007. But in Japan, the ratio was just half of that: 19%. In absolute terms, TFP contributed just 0.4% per year to Japan's labor productivity, less than half the 0.9% average among 15 OECD countries.

One reason for this lag is poor results from KBC. Among 15 OECD countries, KBC contributed 0.5 percentage points to labor productivity growth per year during 1995-2007, but in Japan, it contributed just 0.3 points (see top figure on pg. 3).





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The service economy

Some people put the blame on Japan's shift to more of a services economy. But other countries going through a similar shift have not suffered as large a productivity deceleration as Japan. The OECD's 2015 *Economic Survey of Japan* comments on this issue: "Rather than deindustrialization, Japan's key problem is the lack of TFP growth in non-manufacturing, which has been declining since its peak in 1991. This reflects the low level of R&D in the service sector, which accounted for only 9% of business R&D in 2011, well below the OECD average of 38%. The challenge is to boost TFP growth, particularly in services…This requires addressing three key issues [one of which is]: ineffective investment in knowledge-based capital (KBC)."

From 1990 through today, Japan's TFP growth in manufacturing has been consistently higher than in the rest of the economy (services, farming, and construction). TFP in services peaked in 1991, when the lost decades began, and then hit zero growth. By contrast, Japan's growth in TFP in manufacturing continued after 1991 (see bottom figure). Even in manufacturing, however, growth in TFP slowed: from an average annual rate of 3.6% during 1970-1991 to less than half that, 1.7%, during 1991-2007. Some of this fall was due to Japan's economic maturation and some due to the syndrome of the "lost decades."

There are lots of ways to improve productivity in services through the use of KBC. Consider retail for example. In the US, big retailers took advantage of the Internet, new software, and decades-old optical scanner technology to change the way they dealt with inventories. Every time a customer bought something, the optical scanner registered it and this drawdown of stock on store shelves was counted and replacements ordered automatically.

That, by itself, simply reduced the costs of a task they had been doing all along: inventory control. But, in the hands of smart retailers and their supplier partners, it did something more: it gave them new capabilities. For example, it let them examine the items most popular among their customers as well as shifts in popularity with the seasons, days in the week, etc. That enabled them to shift the amounts they ordered to play up the more popular items. It also helped them rearrange the placement of items to generate greater visibility and catch the "impulse buyer." The result was a big improvement in sales per square foot of shelf space as well as per worker, i.e., TFP.

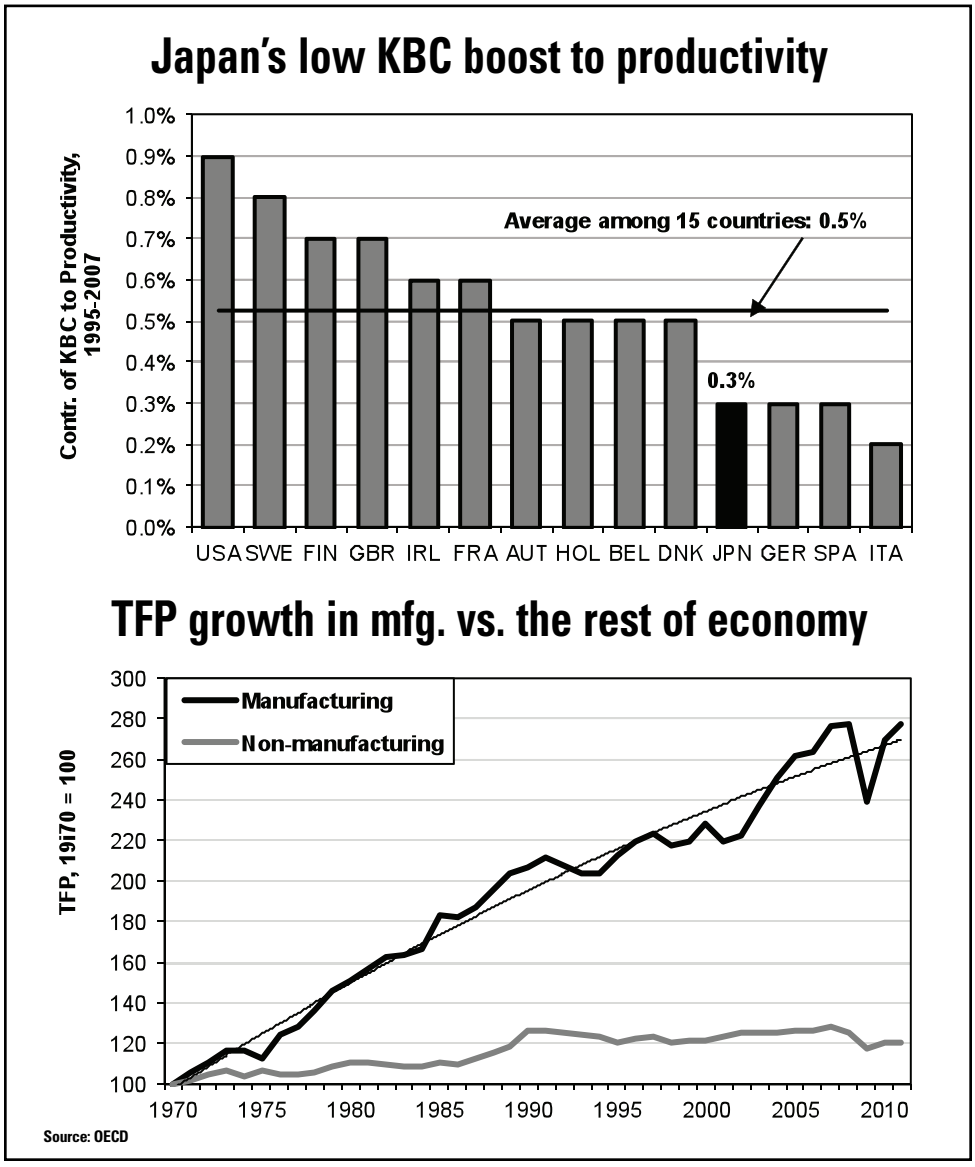
Moreover, scanner data was transmitted back to manufacturers, who could then adjust their own production schedules, avoiding both shortages and surpluses. In addition, customers who purchased one sort of product could be sent marketing information on related products.

There is a belief in Japan that services are inherently less productive than manufacturing, that they provide only low-skilled jobs, and that they cannot be exported. That may be true of some personal services, like haircuts or taxis. However, in the US, 30% of service jobs are in the highest-skill categories—professional, technical, managerial, and administrative occupations—compared with just 12% of manufacturing jobs. German service exports today nearly match manufactured exports. McKinsey projects that service exports will account for one-third of all exports from mature economies by 2030.

Economic competencies for TFP

Why has KBC contributed less to productivity in Japan than elsewhere in the OECD? It seems that Japanese firms tend to use KBC mostly for cutting costs of existing activities, rather than for creating strategic value, as in the retail example above. This is particularly true in the use of software, as detailed in an article on pg. 7.

Japan has, in the past, shown it can learn from others and even leapfrog their developments. The obstacles lie in neither Japanese culture nor a dearth of talent. Rather, they lie in policies and institutional setups of firms that once served Japan well but have now become obsolete. (RK)



How much productivity growth is needed?

Japan's demographic crunch is why the nation needs a productivity revolution quickly. It is not enough to say that Japan is making reforms; it's always making reforms. The question is: can it accelerate productivity growth sufficiently to offset the force of aging? If not, it will find it tough to support its people at the living standard to which they have become accustomed, let alone improve it.

Between 2000 and 2045 (just 30 years from now), the total number of working age people (age 20-64) will have declined 37%, but the total population of Japan will have declined "only" 20% (see top figure). As a result, in 2045, there will be 21% fewer working age people relative to the entire population than there were in 2000, and 13% fewer than there are today.

In 1990, there were only 19 seniors (over 65) for each 100 working age people. Today, that number has reached 48; that will rise to 59 by 2030 and 77 by 2045. Since it is working people who produce GDP, then regardless of the particular social security system in play, it is working people who, one way or another, have to finance the existence of the elderly. Unless each worker is able to produce a lot more GDP than today, Japan will have to impose draconian cuts in living standards on working age people via tax hikes and/or draconian cuts in living standards for the elderly via cuts in old-age and health care benefits.

Implications for required productivity growth

How much growth in labor productivity does Japan need to offset the force of aging?

To keep the arithmetic simple, let's assume that the number of working age people who actually work stays the same, and so does hours per worker. If there are 13% fewer workers per capita than there are today, then, by 2045, each worker must produce 13% more GDP per year just to prevent a fall in per capita living standards.

To produce 13% more GDP per work-hour in 30 years, productivity must grow 0.4% a year. In other words, on average, the first 0.4 percentage points of every year's increase in productivity goes just to prevent a fall in per capita GDP. If Japan wants to keep per capita income growing at the 0.7% rate that prevailed during 1991-2014, then productivity must grow 1.1% a year (i.e., 0.7% plus 0.4%).

What if the reported drop in productivity growth during 2012-15 to just 0.7% a year (see pg. 1) proves to be the new trend line? In that case, per capita GDP growth would slow to the snail's pace of just 0.3% per year (0.7% productivity growth minus the 0.4% needed to offset the force of aging).

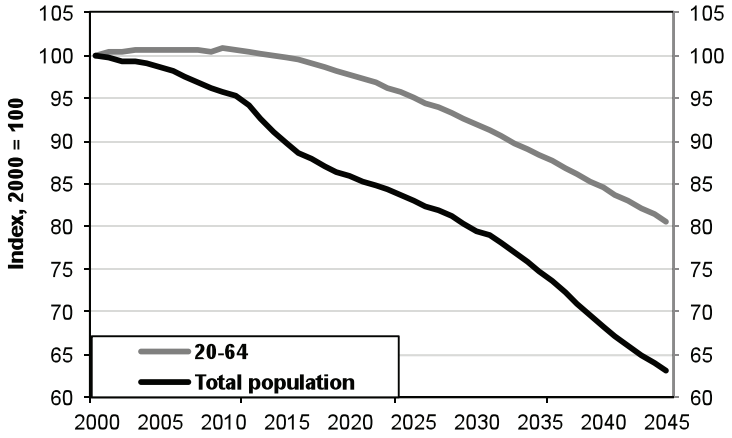
This marks a huge change in the nature of Japan's economy. Up until 2000, the number of working age people was growing faster than the entire population. As a result, per capita GDP would have risen even if labor productivity had fallen. Now, it's the opposite.

We can see this change by looking at consecutive 15-year periods in the bottom figure. During 1971-1985, the total population grew just 0.3% while the number of working age people grew three times as fast: 1.0% per year. As a result, per capita GDP would have stayed the same even if GDP per worker had fallen 0.7% a year. By 2001-15, the situation was the opposite. Total population fell 0.1%, but the number of working people fell 0.8%; hence, output per worker had to grow 0.7% just to keep per capita GDP from falling. In 2016-2030, it will take 0.2% productivity growth to keep per capita GDP from falling and in 2031-45, it will once again take 0.7% productivity growth to keep per capita GDP from falling.

All of this assumes that the average weekly hours of work remain the same as today. However, the rise of irregular workers has meant a decline in average work-hours per worker. Moreover, those hours have fallen faster than the working age population. Heading into the next three decades, it is certainly possible that, as the number of people aged 20-64 declines, hours of work per person could decline even faster. If so, then the rate of productivity growth needed just to keep per capita living standards from falling will be even higher.

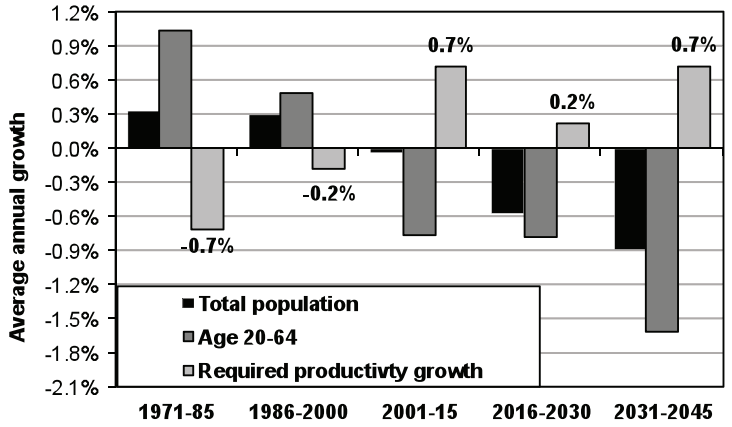
Finally, consider the increased health care and eldercare costs that require higher per capita GDP to support the elderly. Just the costs of care for millions with dementia is projected to rise markedly from today's level of 3% GDP in the coming decades. Financing this will require even faster productivity growth. (RK)

Population: total vs. 20-64 age cohort



Source: see text for explanation

Productivity needed to offset age wave



Source: Labor Force Survey, National Institute of Population and Social Security Research **Note:** In bottom chart, "required productivity growth" is the rate necessary to keep per capita GDP from falling; see text for further explanation

TOKYO INSIDELINE

by Takao Toshikawa

'Scarlet letter' tax, UH election

Talk with MOF's top official

Acts of terror perpetrated by the Islamic State (ISIS) are occurring around the world. ISIS also considers Japan to be an "enemy country," so, on December 8, the Shinzo Abe government will establish a unit for the collection of terrorism information inside the Foreign Policy Bureau of the Ministry of Foreign Affairs. People are naturally frightened by terrorism, but this month's column is devoted to what some might call smaller issues.

Talk of "scarlet letter" tax

One day in November, I shared a meal with Administrative Vice-Minister Kazuho Tanaka of the Ministry of Finance (MOF), the highest-ranking bureaucrat in the Ministry. Since most of the conversation was off the record, Tanaka freely expressed his unreserved thoughts. I was very interested to hear what people at the center of Kasumigaseki (Tokyo's Ministry district) think and are doing about such issues as the introduction of a reduced tax rate when the consumption tax rises to 10%, a tax on corporations' retained earnings, and the future of the Asian Infrastructure Investment Bank (AIIB). I cannot report on other topics, but I am permitted to report here about the retained earnings tax, which will have American investors on the edge of their seats, since some of the latter are pushing for such a tax.

When I said, "I've heard that the MOF is considering a retained earnings tax," Tanaka nonchalantly acknowledged it: "We're thinking about it." He then confided, "It was suggested by some in the Ministry who have spent time with Western hedge fund guys." Having seen nothing about it in the mainstream media, I was frankly surprised by this inside information.

The notion is that a retained earnings tax would reduce incentives for corporations to hoard immense sums of cash and securities, rather than plowing their profits back into the economy via new investments, wage hikes, or dividends. Their mountain of cash reached ¥300 tril. in fiscal 2014, an amount equal to more than 60% of GDP.

Tanaka continued his open discussion. He declared, "Actually, we call it a 'scarlet letter.' Companies that do things such as not moving profits into capital investments and not raising personnel costs, and then invest in foreign M&As, would be divided by color into 'red,' 'blue,' etc., and taxed accordingly. Both broadly and on a more shallow basis. This is just a heads-up. If you ask if we're considering it though, we are considering it."

That was the first time I had heard the term "scarlet letter." Unlike Americans, Japanese are not familiar with Hawthorne's famous novel, *The Scarlet Letter*, which depicted the Puritans humiliating adulterers by affixing a red letter "A" to their clothes.

What do some MOF bureaucrats have in mind for 'scarlet-letter' companies? Does this cover companies such as SoftBank that pour their immense profits into M&As in various Asian countries? Apparently, European and American hedge funds are inciting the MOF bureaucrats by telling them that foreign institutional investors would rush to "buy Japan" if there were both a broad and shallow retained earnings tax. That's because firms could avoid paying the tax by hiking their dividends; investment funds would gain from both the increased dividends and from the rise in stock prices that a hike in dividends could encourage.

Political resistance

Tanaka also recognizes that it will not be easy to enact. When he spoke of it during a regular presentation to the Prime Minister, Abe scoffed, "You guys are thinking of another trick by which to collect taxes." Tanaka has yet to bring the idea before Minister for Economic and Fiscal Policy Akira Amari, but he imagines Amari narrowing his eyes in anger when he does.

Around the time of my conversation with Tanaka, there was a series of statements and moves by the ruling parties on the retained earnings tax. Was this coordinated? At a press conference the following day, Finance Minister Taro Aso expressed opposition, saying, "A retained earnings tax is double taxation. It should not be done lightly." Underlying the increase in companies' internal reserves is a view among corporate executives that "managers should remain cautious in light of low share prices since the 1990s." Meanwhile, a Liberal Democratic Party (LDP) study group for younger and mid-level Diet Members, the Meeting to Consider the Next-Generation Tax System, decided the day before my conversation with Tanaka to urge the government and the LDP's Research Commission on the Tax System to consider a retained earnings tax on corporations. The study group is chaired by Keisuke Suzuki, a former MOF bureaucrat and a member of the Aso faction.

Is the MOF serious about the scarlet letter tax? The betting here is that this talk is just pushback by MOF to limit the sharp reductions in the corporate income tax being pushed by Abe and the Ministry of Economy Trade and Industry (METI). The LDP has already agreed to reduce the tax to 29.9% in fiscal 2016; that's 7 percentage points from three years ago and further reductions are being discussed.

Hashimoto's victory

On November 22, there was a double gubernatorial and mayoral election in Osaka Prefecture and City. The Osaka Restoration Association led by Osaka Mayor Toru Hashimoto won an overwhelming victory. This victory not only gives Hashimoto a path towards advancing into national politics, it throws a complicating element into the questions of possible ruling party coalitions and the reorganization of the opposition parties. Hashimoto has repeatedly dined with Abe and has a rapport with the Kantei (Prime Minister's Office). Chief Cabinet Secretary Yoshihide Suga continues to talk him up, saying, "Mr. Hashimoto is the kind of politician that's hard to come by these days."

After a double election where he collided with LDP-recommended candidates, the Kantei had expected a Hashimoto political revival no sooner than next summer's Upper House election. However, nineteen members of the Upper and Lower Houses combined are part of the Osaka Restoration Association. If Osaka Restoration were to agree to an amendment to the Constitution as an opposition party, the Abe Kantei could spin it as "broad consensus," so the group is

more significant than its number of seats would indicate. It would aid the effort by the Liberal Democratic Party (LDP) to drive a wedge among the opposition parties and stymie their own efforts at cooperation.

In contrast, Hashimoto is thinking that he'd like to work out his differences with New Komeito on security policy and the Constitution and find a basis for Restoration-Komeito cooperation, use it to build a three-party LDP-Komeito-Osaka Restoration coalition for the Upper House election (or a double election for both houses of the Diet), and gain the balance of power through subsequent maneuvers. As the expression goes, Abe and Hashimoto "sleep in the same bed, but dream different dreams."

Opposition party realignment

On the other hand, a reorganization of the opposition parties, led by the Democratic Party of Japan (DPJ) under President Katsuya Okada, is proceeding in a three-stage strategy: parliamentary union with the Japan Innovation Party (President: Yorihisa Matsuno) that broke with Hashimoto, which will lead to electoral cooperation and then to the formation of a new party. The Japanese Communist Party is coming in from the sidelines though with unified opposition candidates in the Upper House election and pushing the concept of a "national unity government." So the situation is chaotic.

The DPJ is not a monolith. The party's conservative wing, led by former Foreign Minister Seiji Maehara, who has a close relationship with Hashimoto, is asking party executives for a fresh start that would amount to the breakup of the party. Okada's leadership is weak, and under current conditions, a parliamentary union would seem to be the ultimate goal. Reorganization of the opposition parties is likely to end as an impossible dream.

Kantei anxiety about UH election

It may seem obvious, but the thing that most interests Abe is next summer's Upper House election. He hopes to successfully preside over the G7 summit in Ise-shima, Mie Prefecture, and ride that tailwind into the Upper House election, maintaining the majority for the LDP and New Komeito.

It's easy to see the status quo, with Abe as the center of power, continuing. Politics, however, is a dramatic world where things rarely go so smoothly. The seeds of the Abe Kantei's anxiety are to be found inside the Kantei itself.

The first source of anxiety is newly-appointed Deputy Chief Cabinet Secretary Koichi Hagiuda. He has a history of habitual verbal gaffes. His predecessor was Katsunobu Kato, who moved on to become Minister in Charge of Promoting Dynamic Engagement of All Citizens. Kato was highly trusted in the Kantei, where he was a stabilizing force. Hagiuda has no such ability. He is just Abe's flunky. Intrusive and overly talkative, he loves to be asked to appear in the media. He carelessly remarked, "I thought I'd be brought into the Cabinet as Minister for the Olympics, but I was brought into the Kantei, so Prime Minister Abe must be fine with me speaking my mind as always." The Deputy Chief Cabinet Secretary travels with the Prime Minister overseas and gives briefings. Everyone wonders if Hagiuda is really up to the job.

The second source of anxiety is the presence of Secretary to the Prime Minister (Political Affairs) Takaya Imai. Everyone recognizes him as a man of great ability. Backed by Abe's high confidence in him, he meddles in every policy. Wearing his power as a shield, he is quick to shout—even in public—if someone says or does something he cannot overlook. Kantei staffers criticize him behind his back. "Even though he's a bureaucrat just like us; his attitude drives people away." His presence may lead to the Kantei functioning less well.

Resentment of Suga

The same could be said of Chief Cabinet Secretary Suga. Resentment of those with too much ability pools like magma in the party leadership and among faction leaders. Open criticism of Suga has been heard. Even party Secretary General Sadakazu Tanigaki, known for his mildness, seems upset with Suga for his "Kantei high, party low" attitude. He apparently hopes to remove him from the post if an opportunity presents itself.

Because Suga holds power over personnel decisions, Ministry bureaucrats defer to him—for now. Still, if the magma of resentment should erupt above the surface…

When a Government enjoying a high approval rate destroys itself from the inside, it is called a "high fall." This is a worry inside the Abe Government.

I would like to touch on the personality of Suga, the target of resentment. I heard the following from a newspaper reporter who has known Suga since he was a beat reporter covering him during the latter's tenure as Minister of Internal Affairs and Communications in 2007.

Suga has three sons. All three graduated from the University of Tokyo. The oldest works as a private secretary, and the middle one in a construction-related company. The youngest played American football at the University of Tokyo. Once, when he was helping recruit new student managers and cheerleaders for the team in front of the university, the daughter of Finance Minister Taro Aso happened to pass by, and he spoke to her. He only realized who she was when she said, "Did you know who I was when you spoke to me? My name is Aso." Days later, Aso cornered Suga and jokingly feigned anger. "Did you know your son tried to pick up my daughter?!"

Suga has looked up to the late former Construction Minister Hikosaburo Okonogi, the late former Chief Cabinet Secretary Seiroku Kajiyama, Taro Aso, and Shinzo Abe as his "suns," while serving them as a "moon." Though aloof and never gathering his own followers, he has improved his negotiating skills and thus grasp on power. Politics is the heart of his lifestyle. The rhythm of his life is unchanging. A non-drinker, Suga rises early every morning, skims the newspapers, watches NHK News, and goes for a walk. Since becoming Chief Cabinet Secretary, he has had breakfast meetings every day with his secretary and key personnel from various fields. Even so, he is also careful to meet regularly with lobbyists from his electoral districts in Yokohama and Kawasaki. Never cutting corners, he has a very serious personality.

His grip on bureaucrats evokes the political craft of the old former Prime Minister Kakuei Tanaka. He deals with individual bureaucrats only after collecting detailed information on them, so he quickly gains their affinity and friendship. He does the same when meeting with newspaper reporters. He values listening to them, and actually takes notes. Sometimes he will phone a reporter to ask, "What is this issue all about?" Such heart-winning techniques may be calculated, but their apparent naturalness wins people over.

Many players alternate between admiration of Suga and resentment. Politics, however, is a sea of envy. Abe's team worries that, if it lets down its guard, it may find itself tossed about in rough waters.

CORPORATE STRATEGY

by Robert Cole

Japan's software industry

What went wrong?

Robert Cole is Emeritus Professor of Business and Sociology at UC Berkeley and Joint Researcher at the Institute of Technology, Enterprise and Competitiveness at Doshisha University, Kyoto, Japan. This is adapted from "The Japanese Software Industry: What Went Wrong and What Can We Learn from It," by Robert Cole and Yoshifumi Nakata (http://tinyurl.com/nd3uwjd).

It is no news that Japanese firms have not done well in software, or in some present-day software-intensive products like tablets and smartphones. Within Information Technology (IT) products, Japanese firms are now disproportionately located in less software-intensive sectors.

What is mysterious is: why. It is not as if Japanese firms have no gift for software. Machine tools, robotics and autos are just three of the major outlets for high-quality, globally-competitive embedded software products. And Japanese firms do well in computer games. Moreover, independent research ranks Japanese software quality (as measured in defects over a wide range of different kinds of software projects) and the productivity of the software development process at levels well above American projects. In fact, Japan is second only to the US in software sales, but most of that is for the domestic market, while exports languish.

One common explanation is that the Japanese software industry has focused on customized applications as opposed to package software products akin to Microsoft Office. In 2012, custom software accounted for 86% of total Japanese software sales in the information services market, whereas only 14% came from packaged software products. Moreover, game software accounted for 37% of total software sales.

This, however, is just the outer layer of the onion. We need to peel away more layers.

Dearth of computer science students

Software starts with people, those who develop software applications that can add strategic value for the firms buying them. One reason that Japan lags in software is that it lags in producing topflight computer science (CS) students. About 20% of software developers in the US have some amount of graduate school education, twice as many as the 10% in Japan. The gap in PhDs is even larger. Moreover, most CS PhDs (and most Japanese engineering PhDs for that matter) end up pursuing academic careers rather than private sector jobs.

By contrast, industry or government hires most CS PhDs from US universities. A great deal of new value in IT in the private sector has been and is being created in the US by PhD and Masters of Science engineers. Some 22,000 PhDs have been granted in CS and IT in the United States between 1978 and 2008. PhD students at the best US universities experience rigorous coursework and practicums and not a few go on to envision, create and sustain a whole new world, e.g., UNIX, relational databases. American startups founded by PhDs include Adobe, Qualcomm, Google, Cadence, Synopsys, VMware, Sun, Symantec, etc. Still other PhDs like Edgar Codd, with a doctorate in CS, worked at IBM but inspired startup firms like Oracle to develop commercial products building on his pathbreaking research on relational databases. American PhDs have excelled in the rapidly evolving field of software. One is hard put to compile a remotely comparable list of pathbreaking equivalents in Japan.

Notable also has been the long, slow process of incorporating state-of-the-art software knowledge into the curriculum of Japanese faculties of science and engineering. The expansion of IT departments in Japanese universities, starting in the 1980s, was hampered by a shortage of well-trained CS and information engineering faculty. To fill positions, many universities hired retired IT executives from major companies, like NEC, Fujitsu, Hitachi and Toshiba. While these individuals had practical experience in IT business issues and some technical matters, most of their corporate training and experience was in mainframe hardware and software. In the US at this time, mainframes were quickly being displaced by PCs, workstations, newer programming languages, networked systems, the Internet, and the like. Coming from corporate careers, most Japanese faculty members were not competent to teach university students state-of-the-art software or how to conduct cutting-edge research. All this contributed to the Japanese falling further behind the US in software innovation during these formative years.

Beyond that, the corporate world placed less faith in academic training in CS; consequently, most software personnel acquired their professional skills through on-the-job training. Prof. Fumihiko Kimura, a member of the Science Council of Japan, at a public forum held at the University of Tokyo in March 2013, stated that CS is still not recognized by most interested parties in Japan as a clearly defined discipline. Similarly, information engineering positions in the Faculty of Engineering typically have relatively low status in the hierarchy of engineering related fields in Japan.

Overall, some 63,300 US CS and mathematics majors received bachelor degrees in 2009, compared to just 16,300 in Japan. In the case of the University of Tokyo's prestigious Information and Communications Engineering Department, the May 2012 admission quota for electrical and electronics (EE) engineers was 150, while it was only half of that, 80, for the Information and Communications Technology Department. At Stanford University the ratio is the reverse. Stanford graduates 50 EE engineers per year, while the number of those graduating with CS degrees has been on a sharp upward trajectory in recent years and in 2012 hit 250 graduates, five times more than EE majors.

If the shortage of talent is a bottleneck, that, in turn, results from the fact that students and universities justifiably failed to see corporate demand for those skills.

A demand-side perspective

One Japan software veteran explained to me the Catch-22 of the Japanese software world. "The problem is that there are not enough Japanese products focused on software, and

not enough Japanese software professionals are focused on product. Both of these lead to a lack of demand for excellent software architects/designers. Taken together, it results in not enough software innovation."

In reviewing the Japanese scholarly and popular/practitioner literature on the Japanese IT industry over the last decade, we found no widespread claims that Japanese industry was suffering from severe human resource constraints in software. In our interviews with Japanese software leaders across industry, government and academia, not once were we told that software industry growth or IT innovation was currently being constrained by a significant labor shortage.

Our conclusion is that the Japanese IT sector's lag in software innovation arises primarily from weak corporate pressure for creating innovative software/IT products and thus little demand for people able to develop such products.

The issue is not a lack of IT investments as a whole (hardware and software), but a big difference between Japan and the US in the deployment of IT investment within industries. Japanese firms make larger investments in customizing software vs. producing packaged products and exhibit much stronger strategic focus on hardware than software. At the same time, corporate customers use IT investment to support their current business practices, e.g., via cost-cutting, rather than to change those practices to take advantage of new opportunities offered by innovative IT technology, i.e., to create strategic value.

Some of these differences are seen in the contributions software makes at a national level to Total Factor Productivity (TFP), i.e., output per unit of capital and labor combined. Scholars Dale Jorgenson and Kazuyuki Motohashi found that software's contribution to total American growth in TFP grew from 3% in 1960-1995, to 6% in 1995-2000, to 8% in 2000-2006. In those same time periods, the contribution of software to TFP in Japan was almost nonexistent: -3%, -1%, and 1%. Conversely, hardware (computers) in the same time periods made a stronger contribution to TFP in Japan than in the US.

These differences are consistent with the well documented thinning out of IT capabilities of large Japanese manufacturing and service sector firms in the 1990s, as firms spun off their IT departments as subsidiaries and/or came to rely more on outsourcing to system integrators. In some cases the motivation was to take advantage of new technological or market opportunities. However, in larger part, firms used these spinoffs to reduce labor costs. At this time, Japanese high-tech firms were still relatively competitive globally and they didn't see their success dependent on IT. Thus, they thought an easy way to reduce IT costs was to reduce staff. Long-term, this meant that these parent firms had greatly diminished capabilities to develop innovative in-house software.

As a result of this process, 75% of Japan's IT technical employees are located in IT service sector firms (large system integrators and their tiered subcontract firms, often characterized as software factories). At most of these firms, the opportunity for creating innovative software products for sale to large numbers of customers is very limited. The priority of these software vendors is meeting customers' specifications regarding cost, delivery time, and quality specifications for the customized solutions they provide. It is not to develop innovative products/services to be sold to a broad multitude of customers across horizontal markets.

US employee distributions are almost the reverse, with only 29% of the US's IT technical employees located in IT service sector firms. As a result, software personnel in the US are much better positioned to create innovations. When it comes to software innovation, location matters.

Cost-cutting or strategy?

A more benign interpretation of Japan's mode of IT investment is offered by Yasuhide Hosokawa, the former Executive Director of the Japan Users Association of Information Systems (JUAS), an organization of over 1,000 of Japan's leading corporations and users of IT. First, he cites data showing that the unit costs of Japanese software developers is about half that of US firms. Second, he states that the life of Japanese business application systems is long, an average of 17 years (thereby lowering investment costs). Third, he notes that Japanese firms executed severe cost reductions in the past by moving information system functions to their subsidiaries (which pay lower salaries). Fourth, he points to data showing that Japanese IT vendors offer high quality and high productivity services at a lower cost than in the US and other competitors, and says that Japanese companies are the major beneficiaries of these lower costs.

His four explanations illuminate the prevalent Japanese corporate view of the purpose of software. Japanese firms have chosen to compete in IT on operational effectiveness (cost, productivity and quality) rather than seeking new revenue growth through strategic innovation. They follow the classic, and successful, Japanese mode for competing in hardware, particularly in industries with slow-moving technologies. That mode, however, does not work as well in rapidly evolving domains, such as IT, where global customers eagerly pay for high valued-added innovations and companies.

To be sure, there are examples from the US where cost-containment has evolved into strategic advantage. This can be seen with Walmart's decades' long transition from a traditional cost reduction emphasis to logistics innovator, relying on fast uptake of new technologies, cross docking at its warehouses, and innovations in demand planning, forecasting management, etc. to evolve as a supply chain management leader. Japanese management, perhaps because of its tradition of *kaizen* (continuous incremental improvement) and strong departmental factionalism, has tended to focus its cost reduction efforts more on small pieces of whole systems. This has been less likely to lead to strategic advantages similar to Walmart's.

The limitations of competing on operational effectiveness in business application systems can perhaps best be seen in Hosokawa's acknowledgement that the average life of Japanese business application systems is a stunning 17 years. This means, in practice, that Japanese firms effectively forego many IT innovations over the course of 17 years in order to hold down IT investment costs. Extreme customization of business application systems and legacy infrastructures are generally more expensive because maintenance, updates, and replacement are very expensive and therefore not undertaken lightly. In making such decisions, Japanese IT decision-makers deny their firm opportunities to use new IT technology for innovation in a timely fashion, to improve their decision-making, to deliver further benefits to their existing customers and to grow their businesses.

The former CEO of Infosys Technologies, the Indian outsourcing giant, estimated in 2010 that up to 80% of annual IT spending in Japan goes toward maintaining and operating existing systems compared with no more than 60% in the US.

System integrators capture 64% of total

custom software development sales in Japan. Because of their customers' weak capabilities in IT resulting from thin staffing, corporate customers often don't understand and articulate their own IT needs. The high dependency of large firms on their system integrators, as well as the lack of strategic importance many firms give to IT, can be seen in the low proportion of large Japanese firms with full-time Chief Information Officers (CIOs). The Mitsubishi Research Institute estimates that only 30-40% of large Japanese firms had full-time CIOs in 2008. It would have been rare to find US firms with annual revenues over $500 million which did not have a fulltime CIO in 2008. A later survey by the Japan Users Association of Information Systems reports that over 50% of large Japanese firms have someone with the title of CIO, but the amount of time they spend on IT work is little more than 10%.

This suggests that that CIO work is regarded as non-strategic. It reflects top management's long-term view of IT as a cost center rather than a profit center enabling strategic activities to grow the firm. It is this, above all, which underlies weak software innovation in Japan relative to the US. Past surveys reveal that American firms are much more likely to use IT investment for strategic benefits (e.g., winning new customers, increasing sales, providing faster access to market information), rather than just for operational effectiveness and cost-cutting of existing practices.

Further confirmation is provided by a 2013 survey of 216 American and 196 Japanese global companies conducted by the Japan Electronics and Information Technology Industries Association (JEITA) in conjunction with US consulting firm IDC. Asked about their expectations for IT investment, the top choice among Japanese companies was using IT to improve operational efficiency/cost reduction (48%), followed by less than half as many choosing using IT to strengthen development of products and services (22%). The top American choice, by contrast, was using IT to strengthen development of products and services (41%), followed by using IT to reform business models (29%). Business model reform ranked seventh among Japanese firm choices, chosen by only 13%. 75% of the US firms saw IT/information investment as extremely important, only 16% of the Japanese firms responded similarly.

If software is not seen as strategic, then there is little demand for topflight talent. And the lack of topflight talent reinforces the failure of executives to see software as strategic.

Self-perpetuating strategies

What can explain the delayed understanding of Japanese leaders of the strategic potential of software? Here we peel away another layer of the onion: the sociology of promotion in Japanese firms. Scholar Arthur Stinchcombe pointed out that, once an organization, like a company, was established, it tends to retain many of the basic characteristics it assumed at the time of its founding, a concept known as path-dependence. The more a firm uses a given technology, and the more success it has with it, the more it may cement its commitment to that technology.

In the case of Japan's electronics firms, electronic engineers were dominant in the founding of these firms. This occupational specialty dominated management as they evolved into IT firms. It is plausible that this history continues to constrain their transition to software.

Consider Sony's Walkman, a triumph of electronic engineering. Howard Stringer, former President of Sony, revealed in a 2006 interview, “We did not bring software engineers into [the Walkman] product development at the beginning. The hardware engineers would begin the product and then software would come in after the fact. And that's because in a company that has jobs for life, the older [hardware-oriented] people are at the top and the younger software engineers are on the bottom, pushing up. So there is a kind of a generation gap.”

If a firm regularly brings in software personnel late in the product development process, it leads to the self-fulfilling prophecy that software doesn't have much to contribute, that it is basically just a set of tools for implementing hardware-centric product design. In this environment, it is less likely that software engineers will be able to fully understand and take advantage of the hardware design strengths to make innovative contributions. In summary, the cost of hardware coming first is that it sacrifices the optimization of software innovation. What is needed is a collaborative relationship between hardware and software personnel from the beginning of the product development process.

Add to that the fact that, according to well-established research, managers feel most comfortable promoting into their ranks people who are most like them. They see the skills that led to their own success as valuable to the next generation. Managers see those similar to them as easier to communicate with, to understand, and to trust. Hardware engineers dominating the top management positions know what hardware engineers do and can relate to that, but software engineers produce a hard-to-understand intangible product. These factors slow the inevitable transition to the software era.

This lag in leadership recognition of current realities is hardly unique to Japan. A few years after a hit product was developed at South Korea's Samsung, it was found that the hardware engineers who had worked on it were being promoted faster than the software engineers who worked on it. An internal study revealed that the higher-level managers making promotion decisions were hardware personnel. The contributions of the software engineers weren't as visible to them as those of the hardware engineers and therefore the software engineers were promoted at a slower rate.

Samsung's leadership made itself aware of the promotion situation, defined it as a problem, learned why it happened, and developed countermeasures. Japanese firms could well benefit from applying this same kind of energetic effort to overcome the inertial organizational forces arrayed against the software/services transition.

Where is the fresh blood?

Japan faces another handicap in the difficulties faced by new companies with fresh ideas who try to rise to the top of an industry. As measured in sales, there have been no new entrants among the top Japanese electronics manufacturers for more than 50 years. Change is, of course, taking place in incumbent firms with the passing of the older leadership generation. Yet, it is questionable whether the rate of change is keeping pace with global competitive realities. In the 307-page 2012 edition of the Ministry of Economy, Trade and Industry's (METI) annual *White Paper on Manufacturing*, just four pages were devoted to software. By contrast, American carriers of the message that software is an indispensable strategic asset are often independent startups. They are more open to adopting new software innovations and their commercial success pushes incumbent firms to adopt their IT solutions.

CLIMATE CHANGE

by Frank Jotzo

Taking the lead on climate change

New energy model for PRC

Frank Jotzo is an associate professor and director of the Centre for Climate Economics and Policy at the Crawford School of Public Policy, Australian National University. This is reprinted from the *East Asia Forum Quarterly* (http://tinyurl.com/ofwpjnr).

What happens in China is central to the global effort to limit the extent of future climate change. China is already the largest emitter of greenhouse gases by far, even as it continues its process of urbanization and economic modernization. Under a traditional model of energy-intensive economic growth fed by fossil fuels, this would thwart the world's chances of keeping climate change at levels considered relatively safe. But a new paradigm of low-carbon economic growth could be the answer. Consistent with China's own national interests, this paradigm emphasizes technology and is driven in large part by concerns other than climate change.

Lower carbon growth model

In the lead-up to the UN's 2015 climate change conference in Paris, China has taken a global leadership position on climate change policy difficult to imagine a decade ago. Its long-held view was that acting on climate change would hamper the growth needed by poor countries like itself. That simple dichotomy no longer holds.

The Paris treaty is shaping up as one with emissions pledges for all countries, whether developed or developing. But crucially, these targets are voluntary and a result of national decision-making processes, rather than legally binding and negotiated among nations, as was the case under the Kyoto Protocol.

China's submission to the Paris negotiations says that China "will promote global green low-carbon transformation and development path innovation."

Those last few words are the key. China now feels that cutting carbon emissions goes hand in hand with China's other national objectives. One is to clean up the air pollution that plagues many Chinese cities and shortens people's lives. In the short term, this can be improved by cutting back coal use, especially in inefficient plants close to cities, while in the medium term, a shift to electric vehicles and improvements in public transport and city planning are needed. Both efforts are underway in many of China's cities. Another objective is to improve China's energy security, principally by cutting back on the reliance on importing fossil fuels.

Thirdly, while investing in new technology to reduce carbon emissions has traditionally been seen as an economic cost, it is now often regarded as an opportunity for economic modernization and growth. China sees itself becoming a dominant provider of many of the new technologies that will characterize the global energy and industrial system if the world is serious about the climate change challenge. China is already the world's largest producer of solar cells and wind turbines, and it could aspire to global leadership in areas such as electric vehicles and new transport systems, nuclear power plants, advanced electric grid technologies and "smart" buildings with minimal energy footprints.

China's CO2 goals

China's headline climate goal is expressed as a reduction in the emissions intensity of its economy, or the ratio of carbon dioxide emissions to GDP. The existing goal has been a 40-to-45% cut in emissions intensity between 2005 and 2020. The new goal, added on top of the 2020 pledge, is a reduction in emissions intensity of 60-to-65% from 2005 to 2030. This amounts to an annual reduction of around 4%, year after year over a quarter of a century.

There are few historical examples of such decarbonization rates being achieved over prolonged periods of time, the main instances being in the transformation of the formerly socialist economies of Eastern Europe, and China itself during the 1980s wave of economic reforms. None of them lasted for as long as China's pledge implies. Yet the target is realistic because of the huge potential for energy efficiency and for moving away from coal, which still dominates China's energy supply. China is on track to meet and perhaps outperform its 2020 target. The key factor to success has been improving energy efficiency throughout the economy, with inefficient old industrial and energy sector equipment being scrapped in favor of newer, more efficient plants.

There is still scope for further technical improvement in many parts of the economy. But to meet the 2030 target, China will also need to see a structural shift in its economy towards services and high-value added manufacturing, as well as a shift in the composition of its energy supply away from coal and towards carbon-free alternatives.

(China's plan is actually in line with the trends that occur with development, as discussed in the box on pg. 11.)

Peak CO2

China has also pledged to reach its peak carbon dioxide emissions level by around 2030 and to try to attain it even earlier. What year "peak CO2" will occur under the announced emissions target depends on future GDP growth rates. As long as annual GDP growth is above the annual decarbonization rate, emissions will keep growing; as soon as the rates equalize, peak CO2 is reached. China's prospects for slower growth make it possible for emissions to peak before 2030 if the emissions targets are achieved. It might occur much earlier if structural change and investment in low-carbon options proceed rapidly.

It is likely that China's coal use is already near its peak, or might have peaked already. China's overall carbon emissions are still rising due to increases in oil and gas consumption, but these are much less carbon intensive than coal, per unit of energy. Steel production is already declining as the infrastructure investment boom subsides.

China's submission to the Paris conference mentions as a goal the promotion and development of service industries and "strategic emerging industries," as well as "strictly controlling the total expansion of industries with extensive energy consump-

tion and emissions." It also targets a sharp increase in non-fossil fuel energy sources, to around 20% of the total energy mix by 2030, through continued rapid expansion of hydropower, solar, wind and nuclear power.

Renewables no luxury

Renewable energy is no longer an expensive luxury: the cost of electricity from solar panels, for example, has fallen to a level almost competitive with new coal-fired capacity. This is thanks to a continued global R&D effort and a massive expansion of production capacity, first through mainly European subsidy schemes and then with China's takeover of mass production of solar cells. Low-emission electricity capacity is growing rapidly.

Nevertheless, it will require an enormous policy effort to reach a point where these alternative power sources provide a large share of total energy in China. Command-and-control approaches have dominated China's energy and climate policy toolbox, including through mandated closures of highly polluting plants, energy efficiency regulations and state-directed investment in renewable power. But market-based policy instruments are to play a much bigger role in the future. In line with a general drive to liberalize the economy, China is preparing a national emissions trading scheme, set to be introduced in 2017. The cap-and-trade scheme is to cover electricity generation and heavy industries such as iron and steel, chemicals, building materials, paper-making and nonferrous metals.

It is expected that China's provinces will play an important role in the administration of this cap-and-trade scheme, and pilot projects have been in operation for several years now in five of China's cities and the provinces of Guangdong and Hubei.

For emissions trading in China to become fully effective, it will require significant changes, including market reform. Large parts of heavy industry and the electricity system are still run by state regulation or as state-owned enterprises. Making emissions trading effective will require significant energy sector reform, in particular giving a much greater role to pricing mechanisms than is presently the case, especially in the electricity sector. Such reform can be hard to achieve, as it cuts across established financial interests, but at the same time the introduction of emissions trading could be a catalyst to push ahead with faster market reform in China's heavy and energy industries. The efficiency benefits from such market reforms are by themselves a significant prize—yet another instance of more traditional policy objectives proceeding hand in hand with the low carbon objective.

China's global impact

What plays out in China will reverberate across Asia and the world. Governments and businesses will feel the effects of China's low-carbon push. Australia, for example, will see a continued decline in demand for coal and iron ore.

Cheap Chinese-made solar panels have created a fast-growing market for renewable energy the world over, including in low-income developing countries. The same can happen with other new energy technologies. China is in a good position to influence global product market trajectories and steer financing for infrastructure investments in other countries.

If China's shift to a greener shade of economic growth works out, then other emerging economies will try to emulate it. If China succeeds in cutting short the dirty phase of industrialization through technology and accelerated structural change, then why would any country be content with second-best technology and an outdated model of development?

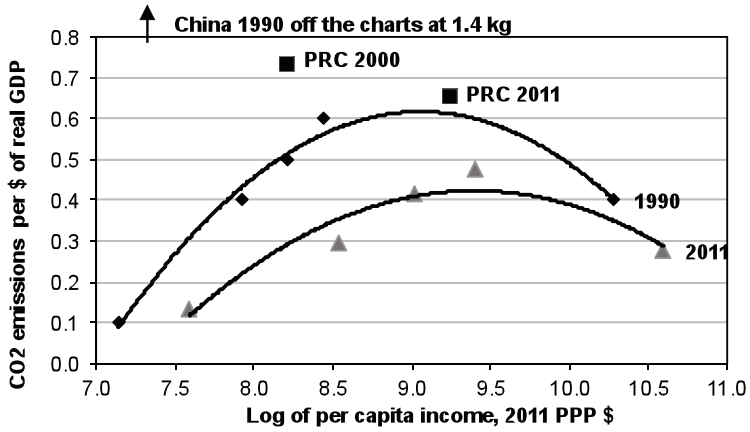
Development aids climate goals

Climate change is one case where the very thing that causes a problem can help in its solution. Increasing the GDP of a poor country like China increases its energy needs and thus CO2 emissions. However, the good news is that, as GDP per capita increases, carbon emissions per real dollar of GDP (carbon-intensity) at first increase, and then decrease, as a nation goes from being a poor rural nation to an industrializing one to a mature rich economy (see chart). Nations become efficient in their energy use, e.g., they use more modern, less carbon-emitting steel mills and less polluting forms of electricity production. Moreover, notice that the entire curve was much lower in 2011 than in 1990. In other words, across all levels of development, the carbon-intensity has been reduced. We're not saying "business as usual" is sufficient to solve the problem, but it surely helps.

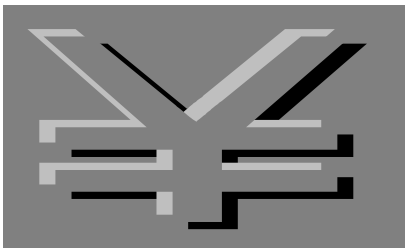
Moreover, understanding these trends makes the promises from China discussed in the accompanying article sound more realistic. Even though China still emits more CO2 than other nations at the same level of per capita GDP, with every passing year, it becomes less of an outlier. Back in 1990, China was off the charts: it emitted around seven times as much CO2 as other nations at the same per capita GDP. By 2000, it was down to emitting twice as much, and by 2011 it was down to 45% as much.

On the other hand, China's statistics need to be taken with a grain of salt: Beijing just announced that the country is really using 17% more coal than it previously thought it was. (RK).

Development reduces CO2 intensity



Source: World Bank **Note:** Horizontal axis shows real per capita income of groups of countries ranging from the least developed nations at the left to the high income OECD nations on the right; PPP means purchasing power parity to eliminate distortions caused by fluctuations in prices and currency rates.



Economy Watch

Abe back to 49%

The approval rating for Prime Minister Shinzo Abe rebounded 8 points from October to 49% in the just-released *Nikkei* poll. Disapproval fell 6 points to 36% (see top figure). As a result, the margin of approval over disapproval recovered to a sizeable 13 percentage points, compared to -1 point in October and -7 points in September.

Commentators attributed this to a refocus by Abe, and the public, on economic issues, rather than the contentious collective security bills. The Kantei (PM's Office) had gambled that, once the security bills were passed by the Diet, Abe's approval would rebound. So far, that gamble has paid off.

But is it the refocus on the economy that has helped Abe, especially at a time when so many press articles are discussing the problems of Abenomics? According to *Nikkei*, "Among those expressing approval of the cabinet, stability was the most commonly cited reason, given by 36% of supporters." This was followed by an "international way of thinking" at 32% and "leadership" at 31%.

Similar results were seen in a *Kyodo* poll taken around the same time. Approval rebounded 3.5 points to 48.3% from October, while disapproval fell 0.8 points to 40.4%. 80% of *Kyodo* respondents worried that a terrorist incident like that in Paris could occur in Japan, raising the possibility that this event may have temporarily helped Abe. We suspect that because a majority of respondents supported "the dispatch of Self-Defense Forces for warning and surveillance operations with respect to China's creation of artificial islands in the South China Sea" by 53% to 40%. Thus, even as majorities disapproved of the collective security bills, a majority approves of one of the concrete actions Abe has proposed in conjunction with those newly-passed laws.

In any case, when *Kyodo* asked Abe supporters the reason for that support, 36% chose because, "There is no other appropriate person but Abe Shinzo." This is up a stunning 8.4 points from last month. Only 13% of his supporters listed his economic policies.

So, Abe's support seems a half-mile wide and an inch deep. But that is enough to leave his leadership unchallenged. At the very least, the plunge in Abe's approval has stopped for now, and at best, he has returned to the approval rates he enjoyed before the security controversy. What's unknown is how long that will last.

¥1,000 minimum wage

In an effort to rev up consumer income, and thus consumer spending, the Abe administration says it will propose raising the nationwide average minimum wage to ¥1,000 ($8.16) per hour from the current ¥798. It wants to achieve this goal by increasing the minimum wage 3% per year over the next 7 to 8 years.

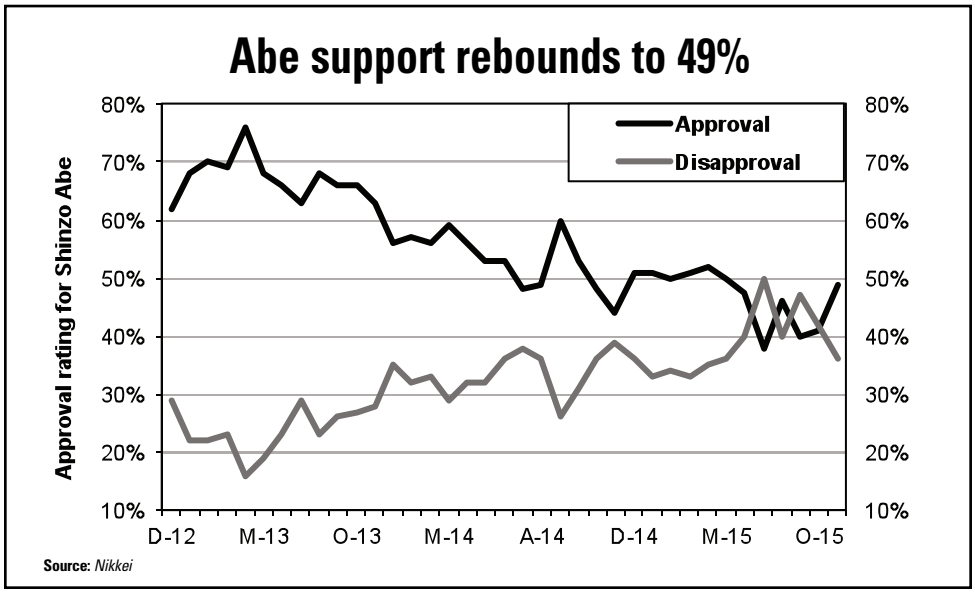
It's a good idea. However, converting that idea into reality will take some doing. Each year, the Ministry of Health, Labor and Welfare (MHLW) sets a target for the average minimum wage, and then leaves it to prefectural governments to decide their own rates, depending on local conditions. The fiscal 2015 average of ¥798, which represents an ¥18 increase (2.3%) from the previous year, ranges from 907 yen in Tokyo down to 693 yen in rural Tottori.

However, the average set by the MHLW is based on the recommendations of an advisory council consisting of unions and employers. This negotiation leading up to the recommendations is held in secret.

We'll have to see whether the employer representatives accept this notion. It would likely affect small-and-medium enterprises a lot more than the big employers. Already, the proposal has been rejected by Akio Mimura, the chief of the Japan Chamber of Commerce and Industry (JCCI), which represents SMEs. Following a meeting of the Council of Economic and Fiscal Advisors, where Abe unveiled the notion, Miura told reporters that any increase "needs to be implemented based on realistic situations... It shouldn't start from a 3 percent hike," as if it were already decided. He cited the difficulties facing SMEs. Newspaper editorials have spoken of giving wage subsidies to SMEs to help them finance the higher minimum wage.

While Keidanren chief Sadayuki Sakakibara has said, "I hope corporations will raise their employees' wages more than this year's level," we have yet to see any Keidanren comment on the minimum wage notion proposal.

For several years prior to fiscal 2014, jobholders who worked full-time at the minimum wage took home less pay than they would from collecting welfare, a flaw that



was corrected in 2014. Still, as of 2014, Japan's minimum wage was just 34% of the average wage, the second lowest level among 16 OECD countries. The US came in last at 27% (see figure).

Japan's Cabinet Office says 3 million to 5 million people (6-10% of Japan's 53 million non-managerial employees) earn slightly above minimum wage. However, an editorial in the *Japan Times* stated that "many" of Japan's non-regular employees (who now account for 36% of the work force) receive wages at or close to the minimum.

This represents the first concrete proposal to implement Abe's "second three arrows." Other proposals for boosting consumption include disbursing cash to low-income pensioners and reducing upfront costs for energy-efficient homes and low-emission cars. Proposals for raising the fertility rate (the number of children a women will have during her lifetime) to 1.8 from today's 1.4 include expanding child care availability by 500,000 children by the end of fiscal 2017. One method to aid this would be more subsidies for employer-provided day care.

Blocking TPP vote?

If one only listened to the words of Senator Orrin Hatch, the key Senate point man for ratifying the Trans-Pacific Partnership (TPP), one would have to say the likelihood of ratification in 2016 is very poor. He has said that the TPP has such serious flaws that parts needs to be renegotiated; that the alternative to renegotiation could be rejection by the Congress; and that such renegotiation would proceed better under a Republican President elected in November, and therefore it would be tough to get a ratification vote in 2016.

Renegotiation has been rejected by the Obama administration, the Japanese government and other players. Hence, on the surface, Hatch's stance would seem to close the door on ratification under President Barack Obama. Moreover, the next President could be either Hillary Clinton, who opposes TPP, or a Republican either already opposed to TPP or under pressure from anti-TPPers within his own party. Even with a pro-TPP GOP President, we believe that renegotiation is a pipe dream; it simply will not happen. Hence, waiting for 2017 could risk the end of TPP altogether.

Few in Washington believe Hatch, the Chairman of the Senate Finance Committee, wants TPP to fail, and many believe he is not really willing even to put it at great risk. Those in the know stressed that Hatch chose his words very carefully to avoid burning any bridges. Moreover, when we asked a Committee aide about Hatch's various comments on renegotiation or delaying things to 2017, we were told: "While the Committee plans to undertake a rigorous review of the TPP to ensure the pact meets the standards set by the bipartisan TPA and is the best possible deal, it would be premature to comment on any specific timeline." Moreover, one clued-in Washington player told us that Hatch "has every intention of working with the Obama administration on timing for consideration of TPP."

Given all this, reliable observers in Washington believe Hatch is playing a hardball bargaining game. In this view, he needs certain concessions regarding biologics and other issues (some of which might be handled in so-called "side letters" to the TPP) in order to end up endorsing TPP and pushing hard for it. Without Hatch, TPP cannot be ratified. Therefore, the guessing game among trade experts in DC is: what is Hatch's price to back TPP?

We'd add another question: having made such negative comments for so long, will Hatch be able to turn swing votes toward ratification if he decides to push for a vote in 2016, especially when some of those Republican members of Congress face tough reelection prospects? For example, upstate New York GOP Congressman Tom Reed, who had voted for TPA and for most previous Free Trade Agreements (FTAs), just announced he will vote against TPP. His Democratic opponent has been attacking him for this TPA vote.

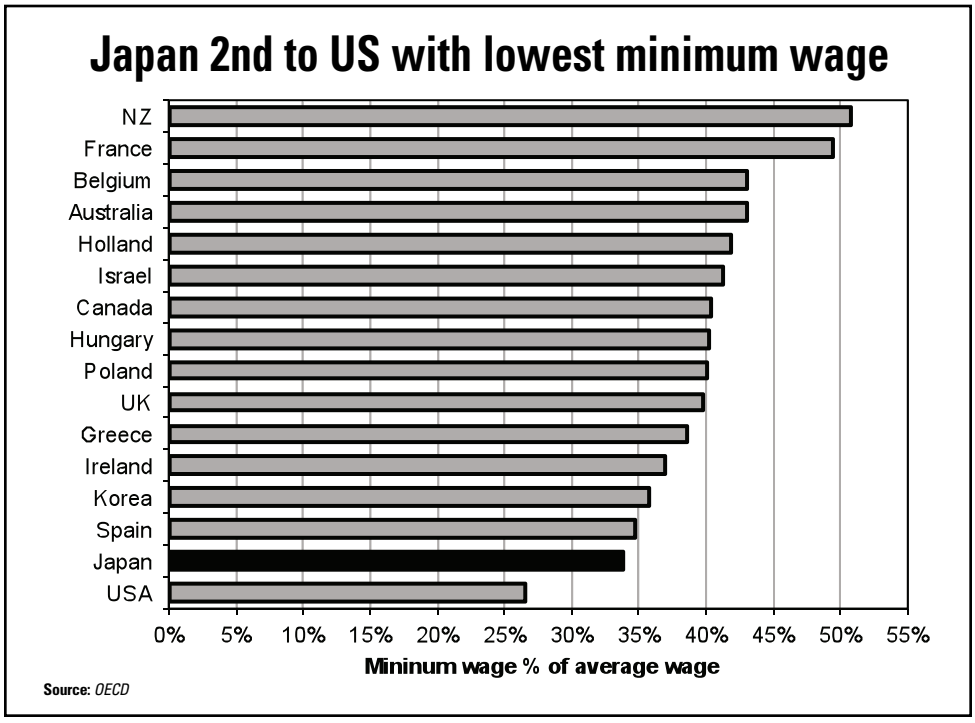
By the way, the US International Trade Commission, which, by law, must examine the economic consequences of the TPP before Congress can vote on ratification, has announced that its report will not be finished until May 18. This has given even more credibility to those who doubt Congress will vote in 2016.

LDP pays off farmers

In an effort to prevent farmer-supported Diet members from voting against the Trans-Pacific Partnership (TPP), the ruling Liberal Democratic Party (LDP) has come up with an 11-page plan to buy them off.

As always, the brunt of the effort is protectionism of rice, which is grown by half of all Japanese farmers and protected by a notorious 777% tariff. The LDP urged the government to buy the same amount of domestically grown rice as the foreign rice that would be imported under the new quotas to be set up under the TPP deal. The foreign rice should be stockpiled for emergencies so that the TPP will not impact prices on the domestic market, the plan argued.

Under the TPP, Japan would maintain



its high tariff on foreign rice but be initially obliged to import up to 56,000 tons of additional nontariff rice from the United States and Australia. It's such a minuscule amount that it would not affect prices. However, the LDP and farm lobby have not let any foreign rice reach consumer tables, lest consumers be able to see whether they like it and demand that the politicians allow more, less-expensive imports.

At the same time, the LDP wants to increase income subsidies to cattle and pig farmers. Currently, the government provides financial aid to cattle and pig farmers if their quarterly production costs exceed past average earnings over the same period. In its proposal, the LDP called for the compensation rate to be raised from the current 80% to 90% of the cost-earning gap.

To judge the cost, suppose the reduction of the beef tariff from 38% to 9% lowered the domestic price of beef by 30% and rancher earnings proportionately. The new subsidy would make up all of that loss, and then some.

There seems to be no aid proposed for fruit and vegetable farmers who are less well-connected politically.

PRC selfies boost Casio

China, the country that only three years ago was the home of boycotts and riots against Japanese goods, may be the country that saves Casio's camera division, which had hitherto suffered losses for nine years in a row. Casio's sales of compact digital cameras designed to take "selfies" are so high in China that the company's overall profits are expected to hit a record ¥50 bil. ($410 mil.) in fiscal 2015, up from ¥34 bil. ($278 mil.) in fiscal 2014.

The TR series cameras are designed so users can rotate the lens, frame and monitor at various angles. *Nikkei* reported that sales in China took off after a buyer in Hong Kong "blogged about how the camera's shape-shifting abilities made it perfect for taking selfies. Word soon caught on in mainland China, and before long the product was flying off shelves."

In response, Casio tweaked the cameras to make them even more appealing to Chinese women in their 20s, who enjoy taking selfies so much that, reports *Nikkei*, "Even when taking group tours, these women tended to prefer snapping shots of themselves rather than the local scenery." To enable the photographer to look as attractive as possible, Casio added, not just high quality lenses and sensors, but also image-editing software that enables users to adjust skin tones in photos.

Casio's experience tells us something about the growing purchasing power for luxury goods in China. It sells the TR for ¥100,000 ($819), about the same as a high-quality single lens reflex (SLR) camera. Moreover, in 2014 it opened TR-only stores in a few Chinese cities and gave them the look of luxury cosmetics stores.

RMB used less than Baht

The International Monetary Fund (IMF) just included China's renminbi (RMB) in the basket of currencies used for its Special drawing Rights (SDR), one mark of the RMB's elevation to a "reserve currency." It joins the US dollar, the euro, yen and British pound. It's a high-prestige status sought by Beijing.

But, says *Quartz* magazine, the basis for including it is kind of flimsy. The IMF says its criteria include whether a currency is widely used for both global trade payments and currency-exchange trade. But, it turns out that, while the RMB is the fifth most-used currency, it accounts for just 2.5% of global payments, compared to 48% for the US dollar (see figure). Moreover, says *Quartz*, 70% of those transactions are done in Hong Kong. Counting just the mainland, the RMB accounts for just 0.8% of global currency transactions, less than the Thai Baht.

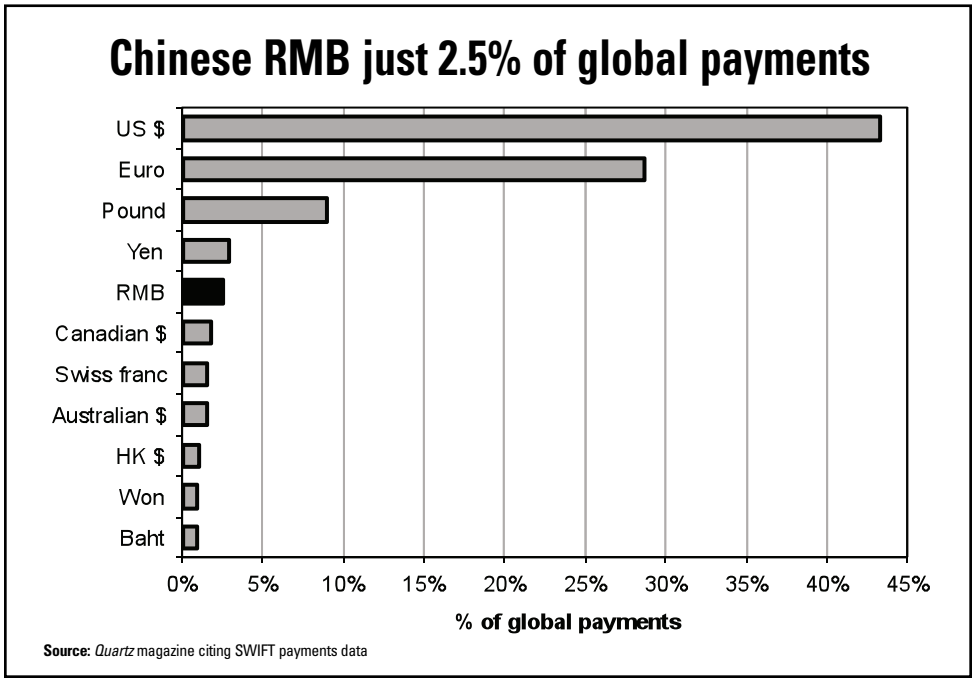
Why FDI is low

The Ministry of Economy, Trade and Industry (METI) is trying to move Foreign Direct Investment (FDI) into Japan. But an episode of technophobia shows there's some mud on its welcome mat.

The METI-run turnaround fund, Innovation Network Corp. of Japan (INCJ), wants to reduce its two-thirds interest in Japanese chipmaker Renesas Electronics to less than half by selling shares to Toyota Motor, Panasonic, Canon, Denso and other existing shareholders, according to *Nikkei*.

Although the firm has a strong product line in microcontrollers for cellphones, it has lost money in other semiconductors due to falling sales of the products in which they are embedded, the period of the higher yen, and the 2011 tsunami. In 2013, it turned to the INCJ for a ¥150 bil. ($1.2 bil.) capital injection. Now that its finances have recovered, the INCJ wants to reduce its stake.

One group of purchasers is *not* welcome, according to *Nikkei*: foreign firms. The newspaper reported: "German chipmaker Infineon Technologies and other foreign manufacturers and investment funds have made specific proposals to the INCJ about investing in Renesas. But the INCJ will seek to unload the shares to domestic companies to keep Renesas' proprietary technology from falling into foreign hands."



SOCIAL TRENDS

by Yoshisuke Iinuma

Cheap yen, lots of buying

Tourism explodes

Japan is currently focused on tourism from abroad as one of its few high growth industries. The most popular shopping area in Tokyo, Ginza, is now flooded with so many Chinese visitors that it can make one wonder if they are not somewhere in China. Hotel occupancy rates are also extremely high in Tokyo and Osaka, and, especially in Osaka, it has gotten to the point that Japanese businessmen are struggling to get hotel reservations (and your editor has to pay a higher rate at his favorite Tokyo hotel).

Through October, the number of tourists visiting Japan this year had reached 16.3 million, a 48% increase from the same period the previous year. The 13.4 million visitors who came in the whole of last year has been far exceeded, and Japan is on track to reach 20 million visitors for the full year (assuming the terrorist incident in Paris does not reduce global tourism). In June 2014, based on the 2013 figure of 10.4 million visitors, the government announced a projection of 20 million visitors for 2020, the year of the Tokyo Olympics. At present, it looks like Japan could reach that goal in a mere year and a half.

Visitors from Asia

Much of this remarkable growth is driven by visitors from Asia. The top four countries by number of visitors, for the first ten months of 2015, were China with 4.3 million visitors (a 113% increase from the same period last year), South Korea with 3.2 million visitors (a 44% increase from 2014), Taiwan with 3.1 million visitors (a 31% increase), and Hong Kong with 1.2 million (a 68% increase).

Outside of Asia, there were 854,000 visitors from the U.S. (a 15% increase), 297,000 from Australia (22%), 188,000 from Canada (27%), and 183,000 from England (21%). Thus Asia, especially China, has become the greatest source of visitors to Japan. It is refreshing to see that the political tensions between China and Japan have not suppressed interest among Chinese people in seeing Japan for themselves.

Spending lots of money

Of course, foreign visitors are boosting sales of Japanese-made goods. In a survey by the Tourism Agency, foreign visitor consumption between January and September overtook that of the previous year by 79%, to a total of ¥2.6 trillion ($21 bil.). This includes everything from hotel stays and transportation to meals, entertainment and shopping. An estimate for all of 2015, made before the Paris terrorist attacks, projected a final figure as much as ¥3.3 tril., a figure equal to 0.66% of Japan's nominal GDP. This would be an increase of about ¥1.3 tril. from the previous year. So, tourism alone would add 0.26% to GDP. That's quite a contribution to an economy whose GDP is still 1.2% lower than it was just before the April 2014 tax hike.

Looking at the spending of visitors to Japan by country, the one with the highest rate is China. The amount spent this year between January and September by visitors from China was ¥1.1 tril. (a 165% increase from the same period last year). Visitors from Taiwan, in second place, spent ¥392 bil. (51%), and South Koreans, in third place, spent ¥217 bil. (47%).

Of the total spending by all travelers to Japan, Chinese visitors accounted for a remarkable 42%. Again, quite an interesting statement given 2012's Chinese boycotts of Japanese goods due to the clash over the Senkakus/Diaoyu islands. Chinese visitors spent, on average, about ¥288,000 ($2,360) each, which ranks this group at the top once again.

What are they buying?

The defining characteristic of Chinese tourists was that 50-60% of their expenditures were comprised of shopping. By contrast, in the case of Australians, who take second place in per capita spending by tourists, only 17% was spent on shopping, while hotel expenses and meals took up most of the rest.

What are these Chinese visitors buying? Duty free commodities like jewelry and luxury watches certainly, but also electric rice cookers, toilets with washing features, cosmetics, non-prescription pharmaceuticals, health supplements, childcare goods, diapers, and processed foods like sweets. So, rather than travel souvenirs, mundane goods that can be found in regular supermarkets are being purchased in large amounts. Japanese goods, known for their quality and reliability, are given as gifts for friends and family members back home, with many items being purchased at the specific request of those friends and family members. An expression has even evolved, "explosive buying," for the voracious shopping activities of Chinese tourists. Stock prices have increased for the makers of the goods targeted by Chinese customers and for those department stores crowded with them, on the basis of these now being so-called "inbound tourism related brands."

A goal of 40 million

Around the beginning of the 2000s, the number of foreigners visiting Japan was stuck in the range of 5-6 million per year. It finally reached 8 million in 2007 and remained at that level until 2012, with the exception of 2009 (the year after the Lehman Shock) and 2011 (the year of the Tohoku Earthquake). It first exceeded 10 million in 2013. After that though, due in part to cheaper prices due to the falling yen, the number of visitors really began to soar.

However, compared to other countries, the number of visitors to Japan is still relatively small. France is exceptional, with 80 million outside visitors a year. When considering the US and Spain with foreign visitors in the 60 million range, and Italy and China with around 50 million each, Japan still has a lot room for improvement. Even within Asia, it lags behind the 25 million who travel to Thailand and Malaysia. The Abe administration, which has recently put great effort into expanding these tourist numbers, has delivered ahead of schedule on its plan for 30 million visitors by 2030, and is now planning to make a new goal of 40 million.

Tourism from China

One factor in the future trajectory of this growth will be whether the recent tourist influx continues. Among travel agents specializing in travel from China, there is a prevailingly positive outlook that current visitors to Japan are mainly from coastal cities like Beijing and Shanghai, and so the num-

bers will continue to expand with visitors from the rest of the mainland. At work behind this increase has been the loosening of visa regulations for Chinese in recent years, and this policy trend is likely to continue. Short of a major setback, such as a Chinese economic depression, a sharp change in the yen exchange rate, or a sudden worsening of Japan-China relations, it seems that the current momentum will hold strong for the foreseeable future.

That being said, the numbers are still not quite on the scale of, say, 30 million annual visitors (Turkey, Germany, England), or 40 million annual visitors (Italy), nor does visitor spending yet approach the gargantuan sums of the close to $50 billion (England, Italy), or $70 billion (Spain, France) reported as income from tourism in some other countries. Much of this disparity is due to the fact that, in the current surge, visitors from China are nearly all on shopping tours, and thus not inclined to regard Japan as a memorable destination in and of itself, in the way that tourists regard Paris or Rome.

A tourism superpower

Former Goldman Sachs economist David Atkinson, now the CEO of a company that restores antiques, sees Japan as a "country with the necessary conditions to become a tourism superpower." According to him, in order to become a tourism superpower, four conditions of "climate," "nature," "culture," and "food" must be met, all of which are within Japan's capacity to fulfill. Firstly, when it comes to "climate," Japan is neither oppressively hot nor cold, and versatile in that skiing is available in Hokkaido, and beach resorts can be enjoyed in Okinawa. As for "nature," there is still plentiful untouched coastline, mountains, and forests. In the realm of "culture," alongside traditional treasures like Noh, Kabuki, Bunraku, the tea ceremony, and incense burning, Japan also possesses modern attractions like Anime, Manga, and popular music. Japan's historical cultural assets of castles, temples, and gardens are especially charming. Finally, in the category of "food," traditional Japanese cuisine has received UNESCO World Cultural Heritage designation and Western food also is prepared at a high level and comprises a variety of foreign cuisines. Thus, Atkinson has evaluated Japan as possessing tremendous untapped potential as a tourist destination.

However, he believes that this latent attraction is still unrealized, and is a significant reason is that Japan has not seriously committed itself to developing tourism as a major industry. There are no large-scale beach resorts analogous to those in Pattaya, Thailand, for instance. Even Kyoto, which prides itself on its ancient cultural heritage, ends up disappointing visitors from abroad with its cluttered streets lined with concrete buildings and old houses. Nara, which as Japan's ancient capital should hold tremendous potential for tourism, has insufficient accommodations for foreign visitors. Other than a few exceptional regions, Japan's countryside is characterized by a dearth of accommodations and services welcoming visitors from abroad.

The result is that most visitors to Japan end up limited to the usual well-worn circuit of Tokyo, the area around Mt. Fuji, Kyoto, and Osaka. Airport immigration gates for foreigners are limited and take an extraordinarily long time to process incoming visitors. Long distance travel costs within Japan are prohibitively high. Wi-Fi facilities are insufficient. Explanatory pamphlets in foreign languages are often literally translated from the Japanese, and do not address the information that tourists from abroad would actually want to know. If the aim is to claim tourism superpower status, Japan's tourism infrastructure is lacking in both the soft and hard senses.

In particular, Japan still lacks the level of appeal necessary to draw repeat visits by discerning Western tourists. As indicated by Atkinson, Japan has not even devoted a fraction of the energy it has poured into industrialization into developing its tourism industry. This is because it has always seen the tourism industry as a lower level economic concern.

A new focus

Fueled by the recent tourism surge, a movement is finally gaining momentum to focus on foreign tourism. The Prime Minister's Office has created a conference with the grandiose name of "Conference for Constructing a Vision of Tourism to Support the Japan of Tomorrow." However, Atkinson is concerned that Japanese people are not really aware of the underdevelopment of Japan's sightseeing resources. He wonders if the government and tourism industry are not forgetting this crucial fact, and instead embracing their own ethnocentric view of the attractions of Japan and the misguided notion that the "attentiveness," "manners," "service," and "safety standards" of Japanese culture alone will be enough to attract tourists. In other words, there is a danger of the facile misconception that Japan already has all the resources needed to appeal to foreign visitors, and all it needs to do is market these successfully.

The Niseko precedent

In order to convert Japan's tourist destinations into locations with real value to visitors from abroad, a substantial financial investment will be necessary in conservation of the natural environment, restoration of the architectural cultural heritage, and development of transportation infrastructure and accommodation facilities. These investments must be informed by a close reading of the needs and desires of foreign visitors.

Niseko, a tiny village in Hokkaido with a population of 5,000, is one of the few successful examples. A ski resort there became popular among Australians, starting around 2000, and has now become a summer destination too, thanks to domestic and foreign capital and investments in world-class hotels and condominiums. The number of visitors from abroad last year was 85,000, an increase of 2.2 times over five years ago.

The catalyst to this success story was not a Japanese initiative, but the skilled planning of an Australian who was so charmed by Niseko that he settled there. He spread the word, and then word of mouth from Australian ski enthusiasts followed, and finally foreign and domestic investors who saw the potential of the place decided to spend large sums of money on it. In other words, merely expending capital on a place does not automatically ensure its success.

Domestic tourism on the downslide

Japan's domestic tourism industry is on a downward trend. The aging population and sluggish incomes have resulted in the total number of domestic travelers staying in hotels in Japan dropping from 317 million in 2010 to 297 million in 2014.

A resort investment boom in the late 1980s to the early 90s vanished when the economic bubble burst in the early 90s. Due to this harsh experience, Japanese investors do not have a very positive outlook towards large-scale tourism development

The hope now is that the dwindling numbers of domestic tourists will be replaced by travelers from afar.