The Myth of Asia's Miracle

Paul Krugman

Asia's economic growth cannot be sustained

Once upon a time, Western opinion leaders found themselves both impressed and frightened by the extraordinary growth rates achieved by a set of Eastern economies. Although those economies were still substantially poorer and smaller than those of the West, the speed with which they had transformed themselves from peasant societies into industrial powerhouses, their continuing ability to achieve growth rates several times higher than the advanced nations, and their increasing ability to challenge or even surpass American and European technology in certain areas seemed to call into question the dominance not only of Western power but of Western ideology. The leaders of those nations did not share our faith in free markets or unlimited civil liberties. They asserted with increasing self-confidence that their system was superior: societies that accepted strong, even authoritarian governments and were willing to limit individual liberties in the interest of the common good, take charge of their economies, and sacrifice short-run consumer interests for the sake of long-run growth would eventually outperform the increasingly chaotic societies of the West. And a growing minority of Western intellectuals agreed.

The gap between Western and Eastern economic performance eventually became a political issue. The Democrats recaptured the White House under the leadership of a young, energetic new president who pledged to 'get the country moving again'– a pledge that, to him and his closest advisers, meant accelerating America's economic growth to meet the Eastern challenge.

The time, of course, was the early 1960s. The dynamic young president was John F. Kennedy. The technological feats that so alarmed the West were the launch of Sputnik and the early Soviet lead in space. And the rapidly growing Eastern economies were those of the Soviet Union and its satellite nations.

While the growth of communist economies was the subject of innumerable alarmist books and polemical articles in the 1950s, some economists who looked seriously at the roots of that growth were putting together a picture that differed substantially from most popular assumptions. Communist growth rates were certainly impressive, but not magical. The rapid growth in output could be fully explained by rapid growth in inputs: expansion of employment, increases in education levels, and, above all, massive investment in physical capital. Once those inputs were taken into account, the growth in output was unsurprising – or, to put it differently, the big surprise about Soviet growth was that when closely examined it posed no mystery.

This economic analysis had two crucial implications. First, most of the speculation about the superiority of the communist system – including the popular view that Western economies could painlessly accelerate their own growth by borrowing some aspects of that system – was off base. Rapid Soviet economic growth was based entirely on one attribute: the willingness to save, to sacrifice current consumption for the sake of future production. The communist example offered no hint of a free lunch.

Second, the economic analysis of communist countries' growth implied some future limits to their industrial expansion–in other words, implied that a naive projection of their past growth rates into the future was likely to greatly overstate their real prospects. Economic growth that is based on expansion of inputs, rather than on growth in output per unit of input, is inevitably subject to diminishing returns. It was simply not possible for the Soviet economies to sustain the rates of growth of labour force participation, average education levels, and above all the physical capital stock that had prevailed in previous years. Communist growth would predictably slow down, perhaps drastically.

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Can there really be any parallel between the growth of Warsaw Pact nations in the 1950s and the spectacular Asian growth that now preoccupies policy intellectuals? At some levels, of course, the parallel is far-fetched: Singapore in the 1990s does not look much like the Soviet Union in the 1950s, and Singapore's Lee Kuan Yew bears little resemblance to the USSR's Nikita Khrushchev and less to Joseph Stalin. Yet the results of recent economic research into the sources of Pacific Rim growth give the few people who recall the great debate over Soviet growth a strong sense of déjà vu. Now, as then, the contrast between popular hype and realistic prospects, between conventional wisdom and hard numbers, remains so great that sensible economic analysis is not only widely ignored, but when it does get aired, it is usually dismissed as grossly implausible.

Popular enthusiasm about Asia's boom deserves to have some cold water thrown on it. Rapid Asian growth is less of a model for the West than many writers claim, and the future prospects for that growth are more limited than almost anyone now imagines. Any such assault on almost universally held beliefs must, of course, overcome a barrier of incredulity. This article began with a disguised account of the Soviet growth debate of 30 years ago to try to gain a hearing for the proposition that we may be revisiting an old error. We have been here before. The problem with this literary device, however, is that so few people now remember how impressive and terrifying the Soviet empire's economic performance once seemed. Before turning to Asian growth, then, it may be useful to review an important but largely forgotten piece of economic history.

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'We Will Bury You'

Living in a world strewn with the wreckage of the Soviet empire, it is hard for most people to realise that there was a time when the Soviet economy, far from being a byword for the failure of socialism, was one of the wonders of the world – that when Khrushchev pounded his shoe on the UN podium and declared, 'We will bury you,' it was an economic rather than a military boast. It is therefore a shock to browse through, say, issues of *Foreign Affairs* from the mid-1950s through the early 1960s and discover that at least one article a year dealt with the implications of growing Soviet industrial might.

Illustrative of the tone of discussion was a 1957 article by Calvin B. Hoover.[1] Like many Western economists, Hoover criticised official Soviet statistics, arguing that they exaggerated the true growth rate. Nonetheless, he concluded that Soviet claims of astonishing achievement were fully justified: their economy was achieving a rate of growth 'twice as high as that attained by any important capitalistic country over any considerable number of years [and] three times as high as the average annual rate of increase in the United States.' He concluded that it was probable that 'a collectivist, authoritarian state' was inherently better at achieving economic growth than free-market democracies and projected that the Soviet economy might outstrip that of the United States by the early 1970s.

These views were not considered outlandish at the time. On the contrary, the general image of Soviet central planning was that it might be brutal, and might not do a very good job of providing consumer goods, but that it was very effective at promoting industrial growth. In 1960 Wassily Leontief described the Soviet economy as being 'directed with determined ruthless skill' – and did so without supporting argument, confident he was expressing a view shared by his readers.

Yet many economists studying Soviet growth were gradually coming to a very different conclusion. Although

[1] Hoover's tone – critical of Soviet data but nonetheless accepting the fact of extraordinary achievement – was typical of much of the commentary of the time (see, for example, a series of articles in *The Atlantic Monthly* by Edward Crankshaw, beginning with 'Soviet Industry' in the November 1955 issue). Anxiety about the political implications of Soviet growth reached its high-water mark in 1959, the year Khrushchev visited America. *Newsweek* took Khrushchev's boasts seriously enough to warn that the Soviet Union might well be 'on the high road to economic domination of the world.' And in hearings held by the Joint Economic Committee late that year, CIA Director Allen Dulles warned, 'If the Soviet industrial growth rate persists at eight or nine per cent per annum over the next decade, as is forecast, the gap between our two economies ... will be dangerously narrowed.'

they did not dispute the fact of past Soviet growth, they offered a new interpretation of the nature of that growth, one that implied a reconsideration of future Soviet prospects. To understand this reinterpretation, it is necessary to make a brief detour into economic theory to discuss a seemingly abstruse, but in fact intensely practical, concept: growth accounting.

Accounting for the Soviet Slowdown

It is a tautology that economic expansion represents the sum of two sources of growth. On one side are increases in 'inputs': growth in employment, in the education level of workers, and in the stock of physical capital (machines, buildings, roads, and so on). On the other side are increases in the output per unit of input; such increases may result from better management or better economic policy, but in the long run are primarily due to increases in knowledge.

The basic idea of growth accounting is to give life to this formula by calculating explicit measures of both. The accounting can then tell us how much of growth is due to each input – say, capital as opposed to labour – and how much is due to increased efficiency.

We all do a primitive form of growth accounting every time we talk about labour productivity; in so doing we are implicitly distinguishing between the part of overall national growth due to the growth in the supply of labour and the part due to an increase in the value of goods produced by the average worker. Increases in labour productivity, however, are not always caused by the increased efficiency of workers. Labor is only one of a number of inputs; workers may produce more, not because they are better managed or have more technological knowledge, but simply because they have better machinery. A man with a bulldozer can dig a ditch faster than one with only a shovel, but he is not more efficient; he just has more capital to work with. The aim of growth accounting is to produce an index that combines all measurable inputs and to measure the rate of growth of national income relative to that index – to estimate what is known as 'total factor productivity.'[2]

So far this may seem like a purely academic exercise. As soon as one starts to think in terms of growth accounting, however, one arrives at a crucial insight about the process of economic growth: sustained growth in a nation's per capita income can only occur if there is a rise in output per unit of input. (See 'Sustained Growth' section below.)

Mere increases in inputs, without an increase in the efficiency with which those inputs are used – investing in more machinery and infrastructure – must run into di-

[2] At first, creating an index of all inputs may seem like comparing apples and oranges, that is, trying to add together noncomparable items like the hours a worker puts in and the cost of the new machine he uses. How does one determine the weights for the different components? The economists' answer is to use market returns. If the average worker earns $15 an hour, give each person-hour in the index a weight of $15; if a machine that costs $100,000 on average earns $10,000 in profits each year (a 10 per cent rate of return), then give each such machine a weight of $10,000; and so on.

Sustained Growth

To see why sustained growth can only occur if there is a rise in output per unit of input, let's consider a hypothetical example. To keep matters simple, let's assume that the country has a stationary population and labour force, so that all increases in the investment in machinery, etc., raise the amount of capital per worker in the country. Let us finally make up some arbitrary numbers. Specifically, let us assume that initially each worker is equipped with $10,000 worth of equipment; that each worker produces goods and services worth $10,000; and that capital initially earns a 40 per cent rate of return, that is, each $10,000 of machinery earns annual profits of $4,000. Suppose, now, that this country consistently invests 20 per cent of its output, that is, uses 20 per cent of its income to add to its capital stock. How rapidly will the economy grow?

Initially very fast indeed. In the first year, the capital stock per worker will rise by 20 per cent of $10,000, that is, by $2,000. At a 40 per cent rate of return, that will increase output by $800: an 8 per cent rate of growth.

But this high rate of growth will not be sustainable. Consider the situation of the economy by the time that capital per worker has doubled to $20,000. First, output per worker will not have increased in the same proportion, because capital stock is only one input. Even with the additions to capital stock up to that point achieving a 40 per cent rate of return, output per worker will have increased only to $14,000. And the rate of return is also certain to decline – say to 30 or even 25 per cent. (One bulldozer added to a construction project can make a huge difference to productivity. By the time a dozen are on-site, one more may not make that much difference.) The combination of those factors means that if the investment share of output is the same, the growth rate will sharply decline. Taking 20 per cent of $14,000 gives us $2,800; at a 30 per cent rate of return, this will raise output by only $840, that is, generate a growth rate of only 6 per cent; at a 25 per cent rate of return it will generate a growth rate of only 5 per cent. As capital continues to accumulate the rate of return and hence the rate of growth will continue to decline.

minishing returns; input-driven growth is inevitably limited.

How, then, have today's advanced nations been able to achieve sustained growth in per capita income over the past 150 years? The answer is that technological advances have led to a continual increase in total factor productivity – a continual rise in national income for each unit of input. In a famous estimate, MIT Professor Robert Solow concluded that technological progress has accounted for 80 per cent of the long-term rise in US per capita income, with increased investment in capital explaining only the remaining 20 per cent.

When economists began to study the growth of the Soviet economy, they did so using the tools of growth accounting. Of course, Soviet data posed some problems. Not only was it hard to piece together useable estimates of output and input (Raymond Powell, a Yale professor, wrote that the job 'in many ways resembled an archaeological dig'), but there were philosophical difficulties as well. In a socialist economy one could hardly measure capital input using market returns, so researchers were forced to impute returns based on those in market economies at similar levels of development. Still, when the efforts began, researchers were pretty sure about what they would find. Just as capitalist growth had been based on growth in both inputs and efficiency, with efficiency the main source of rising per capita income, they expected to find that rapid Soviet growth reflected both rapid input growth and rapid growth in efficiency.

But what they actually found was that Soviet growth was based on rapid growth in inputs – end of story. The rate of efficiency growth was not only unspectacular, it was well below the rates achieved in Western economies. Indeed, by some estimates, it was virtually nonexistent (Powell 1968).

The immense Soviet efforts to mobilise economic resources were hardly news. Stalinist planners had moved millions of workers from farms to cities, pushed millions of women into the labour force and millions of men into longer hours, pursued massive programs of education, and above all plowed an ever-growing proportion of the country's industrial output back into the construction of new factories. Still, the big surprise was that once one had taken the effects of these more or less measurable inputs into account, there was nothing left to explain. The most shocking thing about Soviet growth was its comprehensibility.

This comprehensibility implied two crucial conclusions. First, claims about the superiority of planned over market economies turned out to be based on a misapprehension. If the Soviet economy had a special strength, it was its ability to mobilise resources, not its ability to use them efficiently. It was obvious to everyone that the Soviet Union in 1960 was much less efficient than the United States. The surprise was that it showed no signs of closing the gap.

Second, because input-driven growth is an inherently limited process, Soviet growth was virtually certain to slow down. Long before the slowing of Soviet growth became obvious, it was predicted on the basis of growth accounting. (Economists did not predict the implosion of the Soviet economy a generation later, but that is a whole different problem.)

THE NEWLY INDUSTRIALISING COUNTRIES OF ASIA, LIKE THE SOVIET UNION OF THE 1950S, HAVE ACHIEVED RAPID GROWTH IN LARGE PART THROUGH AN ASTONISHING MOBILISATION OF RESOURCES. ONCE ONE ACCOUNTS FOR THE ROLE OF RAPIDLY GROWING INPUTS IN THESE COUNTRIES' GROWTH, ONE FINDS LITTLE LEFT TO EXPLAIN.

It's an interesting story and a useful cautionary tale about the dangers of naive extrapolation of past trends. But is it relevant to the modern world?

Paper Tigers

At first, it is hard to see anything in common between the Asian success stories of recent years and the Soviet Union of three decades ago. Indeed, it is safe to say that the typical business traveller to, say, Singapore, ensconced in one of that city's gleaming hotels, never even thinks of any parallel to its roach-infested counterparts in Moscow. How can the slick exuberance of the Asian boom be compared with the Soviet Union's grim drive to industrialise?

And yet there are surprising similarities. The newly

industrialising countries of Asia, like the Soviet Union of the 1950s, have achieved rapid growth in large part through an astonishing mobilisation of resources. Once one accounts for the role of rapidly growing inputs in these countries' growth, one finds little left to explain. Asian growth, like that of the Soviet Union in its high-growth era, seems to be driven by extraordinary growth in inputs like labour and capital rather than by gains in efficiency (see Lau & Kim 1993, 1994; Young 1992, 1994a, 1994b).

Consider, in particular, the case of Singapore. Between 1966 and 1990, the Singaporean economy grew a remarkable 8.5 per cent per annum, three times as fast as the United States; per capita income grew at a 6.6 per cent rate, roughly doubling every decade. This achievement seems to be a kind of economic miracle. But the miracle turns out to have been based on perspiration rather than inspiration: Singapore grew through a mobilisation of resources that would have done Stalin proud. The employed share of the population surged from 27 to 51 per cent. The educational standards of that work force were dramatically upgraded: while in 1966 more than half the workers had no formal education at all, by 1990 two-thirds had completed secondary education. Above all, the country had made an awesome investment in physical capital: investment as a share of output rose from 11 to more than 40 per cent.[3]

Even without going through the formal exercise of growth accounting, these numbers should make it obvious that Singapore's growth has been based largely on one-time changes in behaviour that cannot be repeated. Over the past generation the percentage of people employed has almost doubled; it cannot double again. A half educated work force has been replaced by one in which the bulk of workers has high school diplomas; it is unlikely that a generation from now most Singaporeans will have PhDs. And an investment share of 40 per cent is amazingly high by any standard; a share of 70 per cent would be ridiculous. So one can immediately conclude that Singapore is unlikely to achieve future growth rates comparable to those of the past.

But it is only when one actually does the quantitative accounting that the astonishing result emerges: all of Singapore's growth can be explained by increases in measured inputs. There is no sign at all of increased efficiency. In this sense, the growth of Lee Kuan Yew's Singapore is an economic twin of the growth of Stalin's Soviet Union– growth achieved purely through mobilisation of resources. Of course, Singapore today is far more prosperous than the USSR ever was – even at its peak in the Brezhnev years – because Singapore is closer to, though still below, the efficiency of Western economies. The point, however, is that Singapore's economy has always been relatively efficient; it just used to be starved of capital and educated workers.

Singapore's case is admittedly the most extreme. Other rapidly growing East Asian economies have not increased their labour force participation as much, made such dramatic improvements in educational levels, or raised investment rates quite as far. Nonetheless, the basic conclusion is the same: there is startlingly little evidence of improvements in efficiency. Kim and Lau conclude of the four Asian 'tigers' that 'the hypothesis that there has been no technical progress during the postwar period cannot be rejected for the four East Asian newly industrialised countries.' Young, more poetically, notes that once one allows for their rapid growth of inputs, the productivity performance of the 'tigers' falls 'from the heights of Olympus to the plains of Thessaly.'

This conclusion runs so counter to conventional wisdom that it is extremely difficult for the economists who have reached it to get a hearing. As early as 1982 a Harvard graduate student, Yuan Tsao, found little evidence of efficiency growth in her dissertation on Singapore, but her work was, as Young puts it, 'ignored or dismissed as unbelievable.' When Kim and Lau presented their work at a 1992 conference in Taipei, it received a more respectful hearing, but had little immediate impact. But when Young tried to make the case for input-driven Asian growth at the 1993 meetings of the European Economic Association, he was met with a stone wall of disbelief.

In Young's most recent paper there is an evident tone of exasperation with this insistence on clinging to the conventional wisdom in the teeth of the evidence. He titles the paper 'The Tyranny of Numbers'– by which he means that you may not want to believe this, buster, but there's just no way around the data. He begins with an ironic introduction, written in a deadpan, Sergeant Friday, 'Just the facts, ma'am' style: 'This is a fairly boring and tedious paper, and is intentionally so. This paper provides no new interpretations of the East Asian experience to interest the historian, derives no new theoretical implications of the forces behind the East Asian growth process to motivate the theorist, and draws no new policy implications from the subtleties of East Asian government intervention to excite the policy activist. Instead, this paper concentrates its energies on providing a careful analysis of the historical patterns of output growth, factor

[3] These figures are taken from Young 1994b. Although foreign corporations have played an important role in Singapore's economy, the great bulk of investment in Singapore, as in all of the newly industrialised East Asian economies, has been financed out of domestic savings.

accumulation, and productivity growth in the newly industrialising countries of East Asia.'

Of course, he is being disingenuous. His conclusion undermines most of the conventional wisdom about the future role of Asian nations in the world economy and, as a consequence, in international politics. But readers will have noticed that the statistical analysis that puts such a different interpretation on Asian growth focuses on the 'tigers,' the relatively small countries to whom the name 'newly industrialising countries' was first applied. But what about the large countries? What about Japan and China?

The Great Japanese Growth Slowdown

Many people who are committed to the view that the destiny of the world economy lies with the Pacific Rim are likely to counter scepticism about East Asian growth prospects with the example of Japan. Here, after all, is a country that started out poor and has now become the second-largest industrial power. Why doubt that other Asian nations can do the same?

There are two answers to that question. First, while many authors have written of an 'Asian system' – a common denominator that underlies all of the Asian success stories – the statistical evidence tells a different story. Japan's growth in the 1950s and 1960s does not resemble Singapore's growth in the 1970s and 1980s. Japan, unlike the East Asian 'tigers,' seems to have grown both through high rates of input growth and through high rates of efficiency growth. Today's fast growth economies are nowhere near converging on US efficiency levels, but Japan is staging an unmistakable technological catch-up.

Second, while Japan's historical performance has indeed been remarkable, the era of miraculous Japanese growth now lies well in the past. Most years Japan still manages to grow faster than the other advanced nations, but that gap in growth rates is now far smaller than it used to be, and is shrinking.

The story of the great Japanese growth slowdown has been oddly absent from the vast polemical literature on Japan and its role in the world economy. Much of that literature seems stuck in a time warp, with authors writing as if Japan were still the miracle growth economy of the 1960s and early 1970s. Granted, the severe recession that has gripped Japan since 1991 will end soon if it has not done so already, and the Japanese economy will probably stage a vigorous short-term recovery. The point, however, is that even a full recovery will only reach a level that is far below what many sensible observers predicted 20 years ago.

It may be useful to compare Japan's growth prospects as they appeared 20 years ago and as they appear now. In 1973 Japan was still a substantially smaller and poorer economy than the United States. Its per capita GDP was only 55 per cent of America's, while its overall GDP was only 27 per cent as large. But the rapid growth of the Japanese economy clearly portended a dramatic change. Over the previous decade Japan's real GDP had grown at a torrid 8.9 per cent annually, with per capita output growing at a 7.7 per cent rate. Although American growth had been high by its own historical standards, at 3.9 per cent (2.7 per cent per capita) it was not in the same league. Clearly, the Japanese were rapidly gaining on us.

THE STORY OF THE GREAT JAPANESE GROWTH SLOWDOWN HAS BEEN ODDLY ABSENT FROM THE VAST POLEMICAL LITERATURE ON JAPAN AND ITS ROLE IN THE WORLD ECONOMY. MUCH OF THAT LITERATURE SEEMS STUCK IN A TIME WARP, WITH AUTHORS WRITING AS IF JAPAN WERE STILL THE MIRACLE GROWTH ECONOMY OF THE 1960S AND EARLY 1970S.

In fact, a straightforward projection of these trends implied that a major reversal of positions lay not far in the future. At the growth rate of 1963-73, Japan would overtake the United States in real per capita income by 1985, and total Japanese output would exceed that of the United States by 1998! At the time, people took such trend projections very seriously indeed. One need only look at the titles of such influential books as Herman Kahn's *The Emerging Japanese Superstate* or Ezra Vogel's *Japan as Number One* to remember that Japan appeared, to many observers, to be well on its way to global economic dominance.

Well, it has not happened, at least not so far. Japan has indeed continued to rise in the economic rankings, but at a far more modest pace than those projections suggested. In 1992 Japan's per capita income was still only 83 per cent of the United States', and its overall output was only

42 per cent of the American level. The reason was that growth from 1973 to 1992 was far slower than in the high-growth years: GDP grew only 3.7 per cent annually, and GDP per capita grew only 3 per cent per year. The United States also experienced a growth slowdown after 1973, but it was not nearly as drastic.

If one projects those post-1973 growth rates into the future, one still sees a relative Japanese rise, but a far less dramatic one. Following 1973-92 trends, Japan's per capita income will outstrip that of the United States in 2002; its overall output does not exceed America's until the year 2047. Even this probably overestimates Japanese prospects. Japanese economists generally believe that their country's rate of growth of potential output, the rate that it will be able to sustain once it has taken up the slack left by the recession, is now no more than three per cent. And that rate is achieved only through a very high rate of investment, nearly twice as high a share of GDP as in the United States. When one takes into account the growing evidence for at least a modest acceleration of US productivity growth in the last few years, one ends up with the probable conclusion that Japanese efficiency is gaining on that of the United States at a snail's pace, if at all, and there is the distinct possibility that per capita income in Japan may never overtake that in America. In other words, Japan is not quite as overwhelming an example of economic prowess as is sometimes thought, and in any case Japan's experience has much less in common with that of other Asian nations than is generally imagined.

The China Syndrome

For the skeptic, the case of China poses much greater difficulties about Asian destiny than that of Japan. Although China is still a very poor country, its population is so huge that it will become a major economic power if it achieves even a fraction of Western productivity levels. And China, unlike Japan, has in recent years posted truly impressive rates of economic growth. What about its future prospects?

Accounting for China's boom is difficult for both practical and philosophical reasons. The practical problem is that while we know that China is growing very rapidly, the quality of the numbers is extremely poor. It was recently revealed that official Chinese statistics on foreign investment have been overstated by as much as a factor of six. The reason was that the government offers tax and regulatory incentives to foreign investors, providing an incentive for domestic entrepreneurs to invent fictitious foreign partners or to work through foreign fronts. This episode hardly inspires confidence in any other statistic that emanates from that dynamic but awesomely corrupt society.

The philosophical problem is that it is unclear what year to use as a baseline. If one measures Chinese growth from the point at which it made a decisive turn toward the market, say 1978, there is little question that there has been dramatic improvement in efficiency as well as rapid growth in inputs. But it is hardly surprising that a major recovery in economic efficiency occurred as the country emerged from the chaos of Mao Zedong's later years. If one instead measures growth from before the Cultural Revolution, say 1964, the picture looks more like the East Asian 'tigers': only modest growth in efficiency, with most growth driven by inputs. This calculation, however, also seems unfair: one is weighing down the buoyant performance of Chinese capitalism with the leaden performance of Chinese socialism. Perhaps we should simply split the difference: guess that some, but not all, of the efficiency gains since the turn toward the market represent a one-time recovery, while the rest represent a sustainable trend.

Even a modest slowing in China's growth will change the geopolitical outlook substantially. The World Bank estimates that the Chinese economy is currently about 40 per cent as large as that of the United States. Suppose that the US economy continues to grow at 2.5 per cent each year. If China can continue to grow at 10 per cent annually, by the year 2010 its economy will be a third larger than ours. But if Chinese growth is only a more realistic 7 per cent, its GDP will be only 82 per cent of that of the United States. There will still be a substantial shift of the world's economic centre of gravity, but it will be far less drastic than many people now imagine.

The Mystery That Wasn't

The extraordinary record of economic growth in the newly industrialising countries of East Asia has powerfully influenced the conventional wisdom about both economic policy and geopolitics. Many, perhaps most, writers on the global economy now take it for granted that the success of these economies demonstrates three propositions. First, there is a major diffusion of world technology in progress, and Western nations are losing their traditional advantage. Second, the world's economic centre of gravity will inevitably shift to the Asian nations of the western Pacific. Third, in what is perhaps a minority view, Asian successes demonstrate the superiority of economies with fewer civil liberties and more planning than we in the West have been willing to accept.

All three conclusions are called into question by the simple observation that the remarkable record of East Asian growth has been matched by input growth so rapid that Asian economic growth, incredibly, ceases to be a mystery.

Consider first the assertion that the advanced countries are losing their technological advantage. A heavy majority of recent tracts on the world economy have taken it as self-evident that technology now increasingly flows across borders, and that newly industrialising nations are increasingly able to match the productivity of more established economies. Many writers warn that this diffusion of technology will place huge strains on Western society as capital flows to the Third World and imports from those nations undermine the West's industrial base.

There are severe conceptual problems with this scenario even if its initial premise is right (Krugman 1994). But in any case, while technology may have diffused within particular industries, the available evidence provides absolutely no justification for the view that overall world technological gaps are vanishing. On the contrary, Kim and Lau find 'no apparent convergence between the technologies' of the newly industrialised nations and the established industrial powers; Young finds that the rates in the growth of efficiency in the East Asian 'tigers' are no higher than those in many advanced nations.

The absence of any dramatic convergence in technology helps explain what would otherwise be a puzzle: in spite of a great deal of rhetoric about North-South capital movement, actual capital flows to developing countries in the 1990s have so far been very small – and they have primarily gone to Latin America, not East Asia. Indeed, several of the East Asian 'tigers' have recently become significant exporters of capital. This behaviour would be extremely odd if these economies, which still pay wages well below advanced-country levels, were rapidly achieving advanced-country productivity. It is, however, perfectly reasonable if growth in East Asia has been primarily input driven, and if the capital piling up there is beginning to yield diminishing returns.

If growth in East Asia is indeed running into diminishing returns, however, the conventional wisdom about an Asian-centred world economy needs some rethinking. It would be a mistake to overstate this case: barring a catastrophic political upheaval, it is likely that growth in East Asia will continue to outpace growth in the West for the next decade and beyond. But it will not do so at the pace of recent years. From the perspective of the year 2010, current projections of Asian supremacy extrapolated from recent trends may well look almost as silly as 1960s-vintage forecasts of Soviet industrial supremacy did from the perspective of the Brezhnev years.

Finally, the realities of East Asian growth suggest that we may have to unlearn some popular lessons. It has become common to assert that East Asian economic success demonstrates the fallacy of our traditional laissez-faire approach to economic policy and that the growth of these economies shows the effectiveness of sophisticated industrial policies and selective protectionism. Authors such as James Fallows have asserted that the nations of that region have evolved a common 'Asian system,' whose lessons we ignore at our peril. The extremely diverse institutions and policies of the various newly industrialised Asian countries, let alone Japan, cannot really be called a common system. But in any case, if Asian success reflects the benefits of strategic trade and industrial policies, those benefits should surely be manifested in an unusual and impressive rate of growth in the efficiency of the economy. And there is no sign of such exceptional efficiency growth.

The newly industrialising countries of the Pacific Rim have received a reward for their extraordinary mobilisation of resources that is no more than what the most boringly conventional economic theory would lead us to expect. If there is a secret to Asian growth, it is simply deferred gratification, the willingness to sacrifice current satisfaction for future gain.

That's a hard answer to accept, especially for those American policy intellectuals who recoil from the dreary task of reducing deficits and raising the national savings rate. But economics is not a dismal science because the economists like it that way; it is because in the end we must submit to the tyranny not just of the numbers, but of the logic they express.

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