# Singapore's Economic Growth Model – Too Much or Too Little?

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## Singapore's Economic Growth Model

Singapore's economic growth model of the past forty-odd years is well-known, justifiably much-admired, and widely written and talked about in international policy and academic circles.

Like its fellow "Asian tigers"—Korea, Taiwan, Hong Kong, and before them, Japan--this growth model was based on the export of initially labor-intensive manufactured goods to world markets, followed by a move up the technology and value-added ladder as comparative advantage shifted. Like Korea, Taiwan and Japan, but unlike Hong Kong, economic development in Singapore was substantially state-directed and included a managed-float currency regime. Unlike Korea, Taiwan and Japan, but like Hong Kong, it was carried out with free trade and capital flows.

Over the past two decades, as Korea and Taiwan especially have liberalized economically (and politically) along many dimensions, reducing the state's role in their economies, and Hong Kong has remained the freest economy in the world, Singapore's economy has remained firmly state-directed even as it diversified out of export manufacturing and into high-value services. Today, there are three major differences between Singapore's growth model and those of the other Asian economies usually considered its peers, beyond its obviously much smaller size.

The first is the heavy reliance on state-promoted immigration, which is strictly though not always successfully restricted in the other economies.

The second is the continued dominance of multinationals and government-linked corporations in sectors of the economy that elsewhere have strong domestic private sector participation. Most notably, outside of banking and property, there is an absence of the large corporations established and grown by domestic private entrepreneurs that are such a distinctive feature of the business and economic landscape in Japan, Korea, Taiwan and Hong Kong and have expanded globally—the Sony's, Samsung's, Acer's, Hutchinson's etc.

The third difference is the lesser integration of Singapore's economy with that of its Southeast Asian neighbors, in contrast to the rapid and strong market-led integration of Northeast Asian economies, including China.

I will not in this paper discuss the reasons for these differences but simply state them as part of the backdrop for my main discussion.

**Economic Theory and Economic Growth**

From an economic theory perspective, there is nothing particularly "miraculous"—or even "Asian"--about the Asian tigers' past or China's current high growth. **Comparative advantage t**ells us that countries can increase the value of their production and consumption from a fixed resource base by participating in international trade. This enables a country to specialize in exporting what it is relatively more efficient in producing compared with other countries, and importing from them what it is not as efficient in producing.

Note that comparative advantage in one or more sectors means comparative disadvantage in other sectors. By definition, a country cannot be internationally competitive in every sector. Despite its absolute abundance of labor, skills, and now capital, China will not end up producing everything in the world. If it tries to do so, the demand for its fixed resources—and even China's resources are fixed—will push up their prices, causing inflation which will undermine the initial cost advantage. This is what has been happening in China over the past couple of years.

A country can increase production in many sectors at once only if it is operating inside its production possibility frontier, that is, has some underutilized resources, whether land, labor or capital. But once it reaches that frontier, it is confronted with trade-offs, a favorite of economists. If it wants to produce more of one product, it will need to produce less of another. The production possibility curve can, of course, move outward as more resources are added—for example, as the labor employed in labor-intensive sectors accumulates skills, and savings enhance the supply of capital or productivity increased. When this happens, comparative advantage itself changes—with a previously labor-intensive economy becoming a skill- and capital-intensive one, as happened to all the Asian tigers.

But comparative advantage based on fully-employed relative resource endowments is not the only determinant of international competitiveness and trade flows. Paul Krugman won this year's Nobel prize in economics by arguing 30 years ago for what was then called "new" or "strategic" trade theory. According to this theory, a country can become competitive in an industry by exploiting **economies of scale or learning**, with exports (and in some cases import restrictions) enabling it to develop such economies by producing and selling cumulatively more units for a larger market.

Krugman then added what he calls "economic geography" to the equation, or the **agglomeration advantages** first described by Alfred Marshall at Cambridge in the 1920s, and later popularized by Michael Porter of Harvard as "clusters". Industrial concentrations develop in particular locations—usually first-comers—because the proximity of suppliers, customers and competitors in a given geographical area gives rise to economies and externalities which make the location as a whole internationally competitive in a very specific sector or industry (think Silicon Valley for high-tech, Michigan for automobiles, and Wall Street for finance).

In business school strategy departments, such as the one where I teach MBAs from around the world about "the world economy", we lump economies of scale, externalities and agglomeration together as sources of location-specific "**competitive advantage**" which can complement or overcome resource-based comparative advantage or disadvantage.

But like comparative advantage, competitive advantage is limited. Not every country can have scale economies in the same industry, for example, and when many countries try to develop the same industry, usually through a mix of targeted import protection and subsidies, excess capacity results and everybody loses—for example, by being forced to produce at lower volume and higher unit cost. Until very recently, this was the situation of the global steel industry, for example, creating the conditions for the industry consolidation which led to the emergence of, most notably, Arcelor-Mittal.

There are also disadvantages as well as advantages to agglomeration, or clusters—most notably **congestion costs** (such as land and labor shortages which emerge when too many firms chasing the same scarce resources and skills in the same location push up their prices and thus undermine each other's competitiveness), and **negative externalities** (such as environmental pollution and dissipation of intellectual property).

Comparative advantage, particularly in its dynamic version, and competitive advantage—new trade theory and clusters—both allow a role for government policy in shaping a location's competitiveness in particular sectors. Besides allowing free trade and capital flows which are market-driven, market-shaping policies are possible. These include selective investments to shape resource endowments (develop or attract particular skills, for example), tax incentives and subsidies to target the allocation of scarce resources toward particular sectors, and infrastructure investment to enhance a location's overall attractiveness to business. Besides the Asian tigers, countries such as Ireland, Dubai, Caribbean banking centers and—most notorious recently, Iceland--have all made use of such state strategies, capitalizing additionally on a fixed resource, their respective geographic locations.

Government policy to shape comparative and competitive advantage does, of course, have its downsides. For one thing, it is readily subject to imitation, which can lead to "beggar-my-neighbor" results—where neighboring countries compete to attract foreign investors with ever-more attractive and costly tax breaks and other subsidies—as well as excess capacity in particularly popular sectors. For another, the WTO increasingly limits policies that seek to subsidize competition as well as protect markets. There are also economists' standard efficiency and equity concerns about government favoring one sector over another, and of citizens subsidizing foreigners.

In addition, as a national economy moves inexorably up the technology ladder, the capital cost—and opportunity cost—of further state-directed shifts in comparative or competitive advantage escalates. This is the simple but very powerful concept of **diminishing returns**.

From a regional and global perspective, if everyone uses government policy in this way, the world as a whole risks facing competition based on government policy rather than market forces. This introduces a large element of political risk into private business decisions, creating both inefficiency in the allocation of scarce resources, and a reduction of world welfare. In the current global financial crisis, the importance of coordinated interest-rate and bank-rescue policies is an instructive example of the need to avoid beggar-my-neighbor consequences which would preclude recovery for everyone.

This brings me to the concept of "**fallacy of composition**", most associated with another Cambridge economist whose name has been re-invoked in the current crisis--John Maynard Keynes, the father of macroeconomics. A fallacy of composition arises when one infers that something is true of the whole because it is true of some part—or even every part—of the whole. The most famous illustration of this fallacy that is pertinent today is Keynes' "paradox of thrift". While saving or "thrift" is good for an individual, if everyone consumes less to save more, the result is a fall in consumer demand, and thus in GDP growth of which consumer demand is typically the largest element. Lower aggregate income may thus mean lower aggregate savings.

But there are many other examples of the fallacy of composition. In government industrial policy, for example, a tax cut for sector A can stimulate its growth and development by attracting resources—capital, labor and entrepreneurship—to that sector. But if every other sector—B, C, D etc.—also gets a tax cut, then no sector is better off. In fact, the government budget ends up running massive deficits—as the U.S. has discovered to its woe and that of the whole world--and the economy as a whole may simply end up with higher inflation.

**Implications for Singapore's Growth Model**

What do all these old-fashioned economic theories mean for Singapore's economic growth model to date—what I call the "EDB model" of "Give them a tax break and they will come", whether "they" are Hewlett-Packard, UBS, Johns Hopkins, Sands or Lucasfilms? Essentially they all boil down to one prescription: You can't have everything, especially if you are small and resource-constrained.

Comparative advantage tells us that a comparative advantage in one sector means a comparative disadvantage in another, and trying to do everything will only push up resource costs and make you uncompetitive overall.

Competitive advantage tells us that building an advantage on the basis of economies of scale, first-comer and agglomeration or cluster advantages is not necessarily sustainable, especially if it is largely reliant on government policy rather than geographical resources—because of the risks of imitation and excess capacity, WTO prohibition, diminishing returns, and fallacy of composition if we try to create advantage in multiple sectors.

In other words, the essence of both comparative and competitive advantage is specialization. Singapore cannot be internationally competitive and a world leader in semiconductors, life sciences, health care, education, financial services, creative industries and casino tourism all at the same time. If we try to do this, all sectors will face rising costs as they compete with each other for scarce land and talent, even if capital is abundantly available, and negative externalities will balloon, as shown by the inflation and environmental degradation that Dr. Geh Min and I discussed in a Straits Times article earlier this year.

**Globalization and Growth**

But, you will ask, what about globalization? Doesn't that enable us to increase our resource base by importing labor, skills and capital, and to expand our market to the world and thus benefit from economies of scale, even though we are small? Don't globalization and technological innovation enable us to push out the production possibility frontier—to both get more resources, and utilize them more efficiently, to have more, and produce more with less?

Singapore has certainly benefited enormously from globalization, in both factor and product markets. But there are also constraints here, and comparative and competitive advantage, diminishing returns and fallacy of composition still apply, even with an expanded production possibility frontier. And there are additional risks, particularly from globalization.

The first risk was one identified by our own Lee Tsao Yuan, then Alwyn Young and Paul Krugman in the 1990s, when they showed that Singapore's economic growth in the 1970s and 1980s had occurred mainly through factor accumulation (the addition of inputs of labor and capital) rather than increased factor productivity (producing more with the same labor and capital). Since 1990 Singapore's growth has certainly included increased productivity, to which global competition and foreign inputs of capital, skills and technology unarguably contributed.

But the ready availability of foreign inputs is arguably also a potential if not actual deterrent to the better utilization of domestic resources—because it is so much easier to just add more input to get more output. Imports of unskilled foreign labor may artificially preserve the competitiveness of labor-intensive activities (such as construction), retarding the reallocation of complementary resources to more productive uses.

Imports of skilled foreign talent and foreign capital may have the unintended consequence of "crowding out" or even "chasing away" local talent, capital and entrepreneurship—as the over-present role of the state in the economy has arguably already done. It is instructive, for example, that according to Forbes magazine, Hong Kong, which has only 50% more people than Singapore, has five times the number of local billionaires—entrepreneurs who can lead in building and rebuilding the economy. Over the last 40 years, Hong Kong's GDP growth rate and per capita income have

surpassed Singapore's, and were achieved with lower savings and higher consumption, reflecting a more efficient use of capital, and much lower salaries for highly-placed civil servants, reflecting a more efficient use of skills. The high ratio of expatriates, including those from less-developed countries, in the upper reaches of Singapore's government-linked and foreign corporations also shows either a failure to develop an internationally competitive managerial class in the private sector (perhaps because of public sector manager salaries much higher than those available in Hong Kong), or a misdirection of resources toward sectors that do not reflect our underlying comparative advantage.

In Singapore's situation of land scarcity, foreign labor and capital also add to domestic inflationary pressures that could undermine the cost-competitiveness of various economic sectors. Imports of capital, including for activity in the financial services sector, in the context of Singapore's persistent current account surpluses and massive foreign exchange reserves, also put upward pressure on the exchange rate and undermine cost-competitiveness. (I am aware, of course, that currency appreciation and domestic inflation are alternative macroeconomic outcomes. But while currency appreciation will limit imported inflation, it cannot do anything about the excess demand for a fixed supply of land that results from large imports of labor and talent.)

Another risk presented by globalization, of which the current financial crisis makes us painfully aware, is the contagion and volatility it introduces into small open economies. In the merchandise trade sector, exports will obviously decline as major export markets in the U.S., Europe and Japan fall into recession—this time, for perhaps as long as two to three years. Recessions also usually produce global consolidations of industry, with smaller, more peripheral locations lacking the anchor of a substantial domestic market or labor force being the most likely to be axed in the face of lower demand and profits.

Ann Arbor, Michigan, the town of 130,000 people where I now live and work, experienced its worst-ever economic shock when our largest private sector employer, Pfizer, the world's largest research-based pharmaceutical company, closed its R and D center in town, despite the fact that it was very new with state-of-the-art facilities, had recently received many millions of dollars of city and state tax abatements, and had been responsible for developing blockbuster drugs like Lipitor. This happened in January 2006, one month after another drug Pfizer was developing elsewhere failed to pan out, and the company felt it had to cut costs. Despite the relatively low cost and high productivity of the Ann Arbor facility, it was axed because it was the smallest of the company's four global R and D centers, and consolidation usually dictates that the smaller facilities go first. Today the town is still littered with the empty high-end residences vacated by high-earning, PhD-holding Pfizer scientists.

Another thing that happens in recessions is that people cut their discretionary spending, which usually means luxury consumption, such as eating out in restaurants and traveling long distances for vacations. In the U.S., these sectors were already hurting before the financial crash, largely because of the sharp rise in energy prices. Domino's Pizza, a fast-food-delivery chain headquartered in Ann Arbor, suffered a 6% decline in its U.S. sales in the third-quarter this year. In tourism, the casino state of Nevada has been particularly

hard hit—to the extent that it might even vote for a Democrat for President this round—and Macau is suffering a similar slump. Sands and other mega-casino operators previously considered money-minters have now run into financial difficulties.

Trade-based recessions come and go, and Singapore has been in one for half a year now. It is possible that secularly rising energy costs—despite the recent recession-induced slump—will spawn some return to localized rather than globalized manufacturing supply-chains that could further hurt Singapore and other Asian countries, but this is likely to be mitigated by the growth of Asian markets themselves.

More disruptive is the risk posed by volatile global capital flows. Since the days of Adam Smith and David Ricardo, academic economists have been virtually united in our belief in free trade, which has been validated by copious research. But since the Asian financial crisis of a decade ago, belief in free capital flows has been increasingly challenged by academic research. Before the current crisis, there was already no research consensus, and it is very likely that, post-crisis, the evidence will trend even further in a negative direction. Ironically, this may be true not just for small open emerging economies like Hungary, Ukraine, and not-so-small Brazil and Indonesia, from which foreign funds pulled out in panic and to shore up their deteriorating capital bases at home, but perhaps also for the U.S. itself, given the role that undiscriminating capital inflows from the rest of the world played in building up its real estate and financial asset bubble.

The lack of adequate financial market regulation at the national level, and of an international monetary institution infrastructure capable of dealing with systemic failure in the developed economies, are among the factors blamed for the depth, spread and seeming intractability of the current crisis. We can assume that an era of tighter government regulation and multilateral oversight is upon us. This, together with the bubble deflation, de-leveraging, capital destruction and rising risk-aversion we are witnessing worldwide, suggests that financial sectors and cross-border capital flows will shrink, and financial innovation diminish, for a probably significant period of time. There may even be a retreat from globalization toward some "localization of finance" just as there may be some localization of tourism and manufacturing supply-chains because of energy costs. None of this is good for Singapore's current economic model.

The increased role of governments in financial regulation and coordination highlights an additional risk posed by globalization going forward—which is the political risk that comes from uncertainty in government policy changes in this and other sectors. Part of Macau's decline, for example, is the result of restrictions by the Chinese government on the frequency with which mainlanders can visit Macau to gamble. Other countries may contemplate various capital controls, while China and India are less likely to liberalize their remaining controls any time soon. Outside of finance, government regulation is also likely to influence the returns from particular industries, such as pharmaceuticals and medical tourism for American consumers, when the next U.S. presidential administration works out its health care and social security plans.

There will also continue to be a push in the international community for a reduction in the international macroeconomic imbalances which contributed to the current crisis. The undervalued managed-float currencies, large current account surpluses and massive foreign exchange reserves built up by Asian countries like Japan, China and Singapore and recycled into financial and real assets in the U.S. and Europe, will be less economically and politically acceptable in the post-crisis era, both at home and abroad. Again, none of this is good for Singapore's current economic model.

But a retreat from such quasi-mercantilist policies will provide Asia and the world with a new source of growth that diverges from that of the past forty years--this is the expansion of domestic consumption in Asia. Chinese economists, like Zhiwu Chen of Yale, and political scientists, like my former Michigan colleague Yasheng Huang now of MIT, and others based in China, have argued that greater privatization of its economy is required to shift demand from government spending, investment and exports, toward consumption.

Let me quote from a recent commentary by Zhiwu Chen in *The Financial Times*, August 7, 2008:

"this industry-first, government-investment-driven and export-oriented growth model has run its course. The focus on industry not services has damaged China's environment. It has also been highly resource intensive…...To transform its economy, China needs to shift towards growth driven by domestic demand, not exports, and one led by services not industry….. wages from labour are the main, or even the only, source of disposable income for most Chinese consumers. Even this single source is growing more slowly than expected. That is why private consumption is slow to rise. State ownership depresses consumption demand…..depending on whether the government or private households control the country's wealth and income, the economy will have a different demand structure. If households control spending power they will favour consumer goods and services, which benefits the service sector. If the government controls spending power, it will favour infrastructure, industrial projects and industrial goods, boosting heavy industries and energy and natural resource consumption…..In the 1980s and 1990s, these consequences of state ownership were growth-enhancing. Now, the over-investment in industry is a negative. It is fundamental for China to distribute ownership rights of the remaining state assets equally among its citizens."

What has this to do with Singapore? It turns out that both China and Singapore have the world's lowest shares of consumption in GDP—about 40%, with the state having ownership or control over most of the remainder, including investment by foreign multinationals which is largely controlled and incentivized by the state. In our article in a forthcoming volume published by the Institute for Southeast Asian Studies, Lee Soo Ann of NUS and I highlight the work of other economists, like the organizer of this conference, Tilak Abeysinghe, and Choy Keen Meng of NUS, who have noted the extremely low share of both labor incomes and consumption in Singapore's GDP. As is the case in China, this correlates with increasing income inequality. The difference in Singapore, however, is that the widening income gap also correlates with the growing presence of high-income foreigners and highly-paid civil servants in multinationals and

GLCs, at a time when the average incomes of most Singapore nationals, even prior to the current crisis and recession, were stagnating, creating a split not just between average and rich, but also between local and foreign, private and state actors in the economy.

Singapore's economic growth model today, Soo Ann and I argue, is predicated on "more of the same" government policies that may be out of place in a changed local, regional and global environment. I quote,

"This includes bureaucratic targeting of favoured sectors for receipt of (now much more costly) state subsidies and tax-breaks directed to attracting capital investment and technology from foreign companies and institutions serving international markets…..the newly favoured sectors (such as "life sciences", gambling casinos and high value-added services like finance, medicine and education) create disproportionately more jobs for foreigners than for locals, at all skill levels, and can only be sustained by massive immigration. They are also much more capital-intensive and risky, and subject to stronger global and regional competition…. Because of these simultaneous "big bets" in a small place, the reliance on external factors of production, and the costs of failure, are much higher…..

These policies, together with changes in the global economic environment and the globalization processes of multinational companies, have resulted in much more ambiguous impacts on the local population. GDP growth, hinged to globalization in specific ways dictated by the state…..has occurred with low shares in GDP for labour incomes (relative to capital returns), and consumption (relative to investment and government expenditure), increased income inequality, and a decline in the relative incomes of local Singaporeans relative to foreigners. The specific forms and requirements of GDP growth have also contributed to the undermining of national identity and social cohesion."

**An Alternative Strategic Vision**

To conclude, I suggest that Singapore's recent economic growth model has both tried to do too much, in contradiction to what comparative advantage, competitive advantage, diminishing returns and the fallacy of composition tell us, and achieved too little, in terms of delivering high and secure incomes and living standards for Singaporeans, as opposed to foreigners and foreign companies. That's my view as an economist. But you might well ask me: As a professor of business strategy, what do I think should be done?

First, I would suggest a national conversation on the purpose and nature of economic growth for an affluent and educated nation at our stage of development, and in our geographical location. While Singapore's economic growth record to date has been admirable, at least as measured by GDP (rather than PPP, which is an arguably better measure), it has emphasized quantitative targets over qualitative results and the distribution among beneficiaries. Focusing on "how much" does not necessarily tell us "how good" or "for whom". "People for growth"—growth as an end in itself--is not the same as "growth for people"—growth as a means toward greater welfare for people. We

also need to specify which people we are growing for: for example, a national government should not use domestic savings to create employment disproportionately for foreigners, simply in order to claim success in establishing a particular sector of its choosing, that may not be validated by underlying market forces.

Second, the sustainability of growth matters. How sustainable is the growth we choose—both financially (without continuous and ever-increasing government subsidies in an ever-changing competitive world economy, and without generating inflation through the import of excess labor and capital) and environmentally (without degrading our own natural resource patrimony and creating the congestion costs and negative externalities which risk undermining competitiveness and growth itself, in a world already running up against severe natural resource constraints and ever-more-costly energy)?

Third, what is the process of growth, and who is responsible for it? Do we devote our carefully husbanded national savings, accumulated over a couple of generations of repressed consumption, to letting the state make big bets on a few major, capital-intensive, expensive projects dependent on foreign capital, foreign labor, foreign skills, foreign entrepreneurs and foreign markets in which we have a lot of competition and no intrinsic comparative advantage? Or do we privatize the economy, releasing capital and talent to local entrepreneurs who will allocate resources according to market forces, and innovate, creating value in smaller but nimbler, more diverse and more locally-rooted enterprises which, if they fail, will take only small parts, rather than big chunks, of the economy down with them? It may be initially difficult for a population conditioned to enter only those sectors and professions championed, incentivized or run by the state, to suddenly turn entrepreneurial and reliant on the market instead, but the history of our entrepreneurial forefathers suggests we can do it.

Fourth, what is distinctive about us, as a nation, or even as a place, that will enable us to build a unique niche in the regional and world economy that cannot be fulfilled by others, however much they try to emulate us by creating tax havens, developing infrastructure, subsidizing foreign capital, welcoming banks, establishing R and D facilities, building casinos, and learning to speak English and Chinese—all of which many others in Asia are doing? Any anthropologist or sociologist will tell you that identity is constructed—not essential and immutable--and communities are imagined. But geography is destiny and biology is rooted in history, and that is where we need to start envisaging a new economic model.

I can imagine, for example, a whole cluster of economic activities—from finance to forestry and fisheries—that will take advantage of our geographical location, installed capacities and accelerated global trends in the environmental sector, that can make us a world leader rather follower in "green business" and energy conservation. We can become a global model for environmentally-friendly buildings and lifestyle, in which there is a ton of money to be made and brand enhancement to be gained by pioneers in a fast-moving field. Focusing on environmental conservation—including forest and marine resource preservation, both of which affect our own environmental quality, will also help integrate us into our regional neighborhood.

Another cluster of regionally-integrated economic activities might be in the creative fields of traditional and modern Asian as well as Western arts and culture, in which we already have some established assets, not least of which are our multicultural population, hybrid tradition, and geographical location.

A third cluster of economic activities might take in social and health services in, for example, developing policies, systems, products and services for an ageing population—next to environmental degradation, by far the greatest economic challenge facing Asia and the world in the next 30 years.

A time of global crisis, and of impending major economic, social and demographic shifts in the region where we are fortunate to find ourselves located, is an excellent time to re-examine not just Singapore's economic growth model, but also our identity and values as a nation, both of which—growth and identity--are linked. Such a conversation is already going on in the United States, and it is possible that the model that emerges there may be significantly different than that which prevailed prior to the crisis. As we advise our MBA students of many nationalities on their career strategies: figure out who you are, what potential or existing competitive advantage makes you different from every other up-and-coming-MBA, and be yourself. As any psychologist will tell you, if you don't value and respect yourself, no-one else will.