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Articles et débats

Policy Debates

Policy Debate | Learning to Grow Beyond the Middle-Income Trap - Singapore as an Export Model?

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Abstract

Editor's note: These papers are a contribution to the 'Policy Debate' section of *International Development Policy*. In this section, academics, policy-makers and practitioners engage in a dialogue on global development challenges. Papers are copy-edited but not peer-reviewed. Instead, the initial thematic contribution is followed by critical comments and reactions from scholars and/or policy-makers. **This debate can be pursued on the Journal's blog <http://devpol.hypotheses.org/528>** where you are invited to share your reflections under your name.

In the initial paper 'Learning to Grow', the authors argue that a key challenge for middle-income countries is to avoid 'the middle-income trap'. In this situation, economic growth has come to a halt and a country is unable to transition to the next level in part due to inadequacies in high-level human capital. Taking the example of Singapore as a country that has avoided the middle-income trap, the authors call for 'a much closer alignment of policies for human capital and economic development' and a 'human capital focussed development strategy'. In his answer, Professor Gopinathan, from the National University of Singapore, analyses some key conditions that were crucial for Singapore's success and questions whether the model could be exported to other contexts.

Index terms

Thematic keywords : emerging economies, economic | development history, social protection, education, employment, youth, labour market

Geographic keywords : Asia South-East, Singapore

Author's notes

The initial paper was directed by Prof. Raymond Saner and Dr. Lichia Yiu with background data prepared by James Sundquist and additional input from Laura Wojizek.

Full text

INITIAL PAPER by Raymond SANER and Lichia YIU | Learning to Grow: A Human Capital-focused Development Strategy, with Lessons from Singapore

- 1 Low levels of human capital stock limit growth opportunities for companies and correspondingly can slow down economic development thereby endangering a country's competitiveness. Perceived underinvestment in human capital by its firms can be corrected by a country by making investment in human capital a centrepiece of its development strategies. Singapore provides a model of such a strategy, continuously improving its human capital to attract foreign investment to the county. Singapore's continuous upgrading of its workforce's skills has

unlocked equally continuous development of higher-value-added economic activity, a development “miracle.” Although it is unlikely that another country could easily duplicate Singapore’s model, it offers useful lessons, particularly for other small nations. This article presents a sector-specific analysis of how Singapore’s workforce planning was implemented through a continuous skill improvement strategy.

1. Introduction

2 Even after a developing country ensures public safety, achieves political and macroeconomic stability, builds new infrastructure, and opens itself to trade, it cannot count on automatic rapid development. The important steps mentioned above would enable it to compete as a low-cost producer, but the higher-wage activities that make the highest standards of living possible would most likely remain elusive if the requisite skilled manpower for higher value production is unavailable or very limited. This frustrating condition, known as the “middle income trap”, affects many developing countries — up to 35 by one estimate.¹ Research into the causes of the middle income trap identifies a lack of economic “capabilities” to compete in more advanced sectors.^{2,3} More concretely, developing countries often lack the human capital necessary to develop further.⁴ The transition into more advanced sectors slows down as the demand for high-level human capital outstrips supply. Most worryingly, “Even emerging markets that have achieved rapid improvement in overall education attainment can suffer from shortages of specific kinds of skilled workers.”⁵

3 Skills gaps persist, trapping countries, because numerous externalities lead to underinvestment in human capital. Although the consequences for development are best illustrated by middle income developing countries, these market imperfections can occur anywhere; even firms in OECD countries tend to underinvest in training.⁶ A McKinsey study of the “world at work” projects a *global* shortage of highly skilled workers and surplus of low-skill workers, with implications for countries of all levels of development.⁷ The resulting structural unemployment threatens to create a “lost generation” of workers and retard economic development around the world.⁸

4 Consequently, governments often need to promote human capital accumulation in order to improve national competitiveness and develop a more advanced economy. Public involvement in education and training is nothing new, of course, and is typically aimed at elevating general levels of education. Doing so is important for development, but a much closer alignment of policies for human capital and economic development could make both more effective. By coordinating with businesses and labour organizations in order to understand which skills are needed and which sectors are poised for growth, countries could accelerate development by targeting investment in human capital. Both public investment and incentives for private investment would be instruments of development strategy, improving workforce skills, moving businesses up value chains, and ultimately raising standards of living.

5 A human capital-focused development strategy would enjoy widespread support, from businesses in search of skilled employees, labour unions anxious about unemployment, and from a global trade regime in favour of non-discriminatory policies. Furthermore, it would benefit the country by improving economic diversity, while requiring fewer sunk costs from the public sector than other activist strategies, such as industrial policy.

6 Such a programme might still be met with considerable scepticism, were it not for a successful example: Singapore. Famously dedicated to openness and the free market watchword of competitiveness, Singapore did not wait for the market to bring development. The country achieved stunningly rapid structural transformation by emphasizing skill development and progressively higher value-added activities. Eschewing tariff walls and other forms of protection, Singapore focused on upgrading the skills of its workforce and incentivizing companies to invest in their own workers. The fruits of this strategy have been an increase in real GDP per capita from USD 5,041 at the transition to independence in 1965 to USD 60,742 in 2011 (2011 PPP US dollars).⁹ Since the UN Development Programme began tracking the Human Development Index in 1990, Singapore’s has risen from .756 to .895, moving from twenty-eighth to eighteenth in the world (UNDP). The literacy rate rose from 50 per cent in 1965 to 96.4 per cent in 2012.¹⁰

2. Skills Gaps as a Barrier to Development

7 Skills gaps impede development through three pathways: as a domestic supply-side constraint, by deterring foreign investment, and by deterring technological upgrading by firms.

Domestic Supply-side Constraint

8 The first of these pathways is the most obvious: businesses have difficulty competing and expanding their operations without enough skilled employees. Evidence comes from a recent OECD–WTO survey of small-to-medium size companies in five sectors important to developing economies: agriculture and food, textiles and apparel, tourism, information and communications technology (ICT), and transportation and logistics. Developing countries’ companies reported a lack of appropriate skills as one of the top three obstacles to operating or upgrading a business in four of the five sectors, excepting transportation and logistics.¹¹ Countries desiring a healthy business environment might conclude that investment in skills is as essential as streamlining regulation and protecting property rights.

Discouraging Foreign Direct Investment

9 Low levels of human capital deter foreign direct investment (FDI) by transnational corporations for the same reasons they hamper domestic firms: it is difficult doing business without the right people. However, FDI is worth mentioning separately for two reasons. First, attracting FDI is a long-established, popular strategy, frequently recommended to developing countries. The spillovers of technology transfer and inflows of capital and foreign exchange associated with FDI mean it merits special attention. Second, transnational corporations can react to skills gaps differently than can domestic firms. The OECD–WTO study previously cited also surveyed “leading

firms” in the five sectors; whereas skills had mattered least in the transport and logistics sector for developing countries’ firms, leading firms in the same sector were *most* likely to report inadequate skills as a “typical obstacle when establishing a commercial presence in developing countries.”¹² Thus, countries seeking to identify skills gaps must gather information not only from domestic firms, but also from transnational corporations.

Discouraging Technological Upgrading

- 10 In addition to these direct effects on the performance of firms, shortages of human capital can indirectly hamper economic development by restricting firms to the lower rungs of global value chains. Skills have been found to have a Say’s law-type relationship with technological upgrading — an increased supply of skills “induces skill-biased technical change and increases the skill premium.”¹³ Evidence from both rich and poor countries suggests that upgrading to more advanced activities occurs in tandem with improvements in skills.¹⁴ Because of the complementary effects of skilled labour and advanced technology, developing countries should invest in human capital even if their presently dominant, low-skill sectors do not report a skills gap.

3. Problems of Skill Development¹⁵

- 11 Even though both firms and employees stand to benefit from a higher-skill economy, markets for skilled labour can remain stuck in a low-skill equilibrium. As the World Bank publication *The Right Skills for the Job?: Rethinking Training Policies for Workers* (Almeida et al., 2012) explains, many issues conspire to deter private investment in human capital.

Imperfections in Labour Markets

- 12 Most skills are *partially* transferable, so neither employee nor employer can capture all of the returns: employers fear employees taking their new skills elsewhere, while employees can’t be sure that their new skills will translate into higher salaries. Consequently, both underinvest. The employer faces a “poaching externality”, while the employee’s situation is referred to as a “matching externality”.

Imperfections in Capital Markets

- 13 Training usually requires borrowing based on the expectation of increased future earnings. However, if financial institutions are uncertain about the return on a course of training or other factors regarding an individual’s ability to repay the loan, they may decline to lend. Training is most important for youth who often lack collateral, exacerbating the problem.

Coordination Failures

- 14 Underinvestment in skills can occur even in perfect labour- and capital markets if firms and workers cannot depend on something provided by the other. In innovation externalities, “workers do not invest enough in high-end skills because there are not enough companies that introduce innovations and demand them, and firms do not innovate and create high-productivity jobs because there are not enough skilled workers.” In vacancy externalities, firms do not create skilled positions because the cost of skilled labour is prohibitively high, while workers do not acquire high skills because there are not enough vacancies for them.

Inadequate Information

- 15 If individuals lack information about the returns on training or the quality of training providers, they cannot make good decisions about whether to upgrade their skills or where to do so.

4. The Solution: The “Developmental State”

- 16 Because market outcomes of human capital tend to be sub-optimal, a strong justification exists for state intervention. Modern proponents of the power of government to fix problems of development often use the paradigm of the “developmental state” to distinguish their ideas from the older, more *dirigiste* policies the failure of which made public solutions taboo during the 1980s.¹⁶ Accepting the criticism that government intervention in the economy can be wasteful, but rejecting the belief that governments are incapable of improving market outcomes, supporters of the developmental state advocate “smart” interventions. Instead of top-down direction of economic structure, developmental states use “market-following” policies, such as supporting the availability of skilled labour, to nudge industries towards greater sophistication.¹⁷

- 17 One argument in support of the developmental state derives from observation that interventionist East Asian states have developed much more quickly than the Latin American states who embraced Washington Consensus-style policies of reining in government.¹⁸ The global financial crisis that struck in 2008 also convinced many that the Western guardians of economic wisdom had lost their legitimacy, clearing space for a “post-Washington Consensus” that included a role for industrial policy in the developmental state sense.¹⁹ In the politically freighted realm of development policy, these historical arguments can carry as much weight as the most sparkling theory. Both trends, the rise of East Asia and the shock to free market capitalism, have made the global political economy increasingly multipolar. Whereas the Washington-based institutions of the World Bank, IMF, and United States government could once marginalize industrial policy by virtue of their near-monopoly on lending and expertise, the forthcoming BRICS development bank will almost certainly endorse developmental state-style policies.

- 18 The developmental state paradigm also enjoys intellectual support from many eminent economists. The most complete articulation comes from Justin Lin in his *New Structural Economics* (2012). Lin argues that an economy’s factor endowment determines its optimal industrial structure — the principle of comparative advantage. He adds that each industrial structure demands a particular level of tangible and intangible infrastructure, from transport to human capital. As an economy develops and its factor endowment becomes increasingly capital- and skilled labour intensive, corresponding improvements must be made to the infrastructure, or the movement into more advanced sectors will stall. Thus, development demands a “comparative advantage following” strategy of government support for structural transformation.

- 19 In Singapore, however, such thinking is not new. As the 1986 Economic Committee Report explains, “The government plays a major role in providing a conducive business environment, and creating investment opportunities. But exploiting these opportunities and identifying the best ones to take up must be left to the

private sector.”²⁰ Statements such as “the government is unlikely to have the detailed and omniscient grasp of all sectors to identify which project to put money on” coexist with ones such as “MTI [Ministry of Trade and Industry] should be given overall responsibility for promoting services.” By positioning the public and private sectors as partners, instead of mutual antagonists, Singapore developed swiftly and harmoniously.

5. The Wide Appeal of Investing in Human Capital

- ²⁰ A human-capital-driven development strategy has many advantages: support from both business and labour, feasibility under the modern trade regime, the potential to increase sectoral diversity, and few risks. Other strategies might share some of these advantages, but never all.

Support from Business

- ²¹ As the OECD–WTO survey made clear, companies deeply appreciate efforts to raise skill levels in the workforce. Subsidized training indirectly subsidizes businesses by creating a pool of skilled labour to draw from and saving them training costs. Firms also routinely demonstrate their enthusiasm for public investment in human capital by partnering with government programmes to create joint training centres: the firm offers its knowledge and resources to the programme, while receiving a stream of potential employees in return. A notable example of this was Tata’s partnership with Singapore to create the Tata Government Training Centre. The availability of properly trained employees seeded Tata’s expansion in Singapore to include Kalzip Asia (a division of Tata Steel), Tata Communications, Tata Consultancy Services, Tata NYK Shipping, Trust Energy Resources (a division of Tata Power), Tata Chemicals Asia Pacific, and more. Grateful for the assistance in technical education, Singapore made Chairman Rajan Tata an honorary citizen in 2008.²¹

Support from Labour

- ²² Labour gains most directly from investment in human capital, as it offers the only solution to structural unemployment. As youth unemployment expands worryingly around the globe prompting fears of a “lost generation” consigned to underemployment, calls for public action to provide skills development are growing louder.²² A recent McKinsey Global Institute report forecasts massive structural unemployment in the global labour market, with a surplus of up to ninety-five million low-skill workers.²³ The report also predicts shortages of up to forty million high-skill workers and forty-five million medium-skill workers, supporting the idea that investment in human capital would offer handsome returns and do much to alleviate structural unemployment.²⁴

Support from the Global Trade Regime

- ²³ Proponents of industrial policy frequently criticize the World Trade Organization (WTO) for restricting the “policy space” necessary to implement it.²⁵ Most unfair, these critics point out, is the fact that the very practices now banned in the spirit of a “level playing field” were the same ones used by rich countries to develop in the first place.²⁶ Such arguments might contain a great deal of truth, but altering the global trading regime might be a more daunting challenge than the puzzle of economic development itself.
- ²⁴ In contrast, a soft industrial policy focused on human capital does not infringe on the sacred principles of national treatment and most-favoured-nation status. In fact, investment in workforce skills could benefit foreign firms as much as domestic firms if they invest in the country. The WTO clearly supports such strategies; the Fourth Global Review of Aid for Trade, held at WTO headquarters to discuss its signature development initiative, featured a side event entitled “Skills for Competitiveness”, attended by the Director General of the WTO himself, Pascal Lamy. The side event was organized by the International Labour Organization (ILO), further illustrating the common ground between business and labour on skill development.

Improving Economic Diversity

- ²⁵ As recent empirical work by the WTO shows, “poor economies... are characterized by high concentration on the export side.”²⁷ Export concentration translates into income volatility, as the economy becomes vulnerable to demand shocks for its few major exports. This in turn has negative implications for growth, particularly for low- and middle-income countries.^{28,29} By nurturing new sectors, soft industrial policy can reduce an economy’s dependence on old ones, improving economic diversity, stability, and growth. Practice backs this theory: witness Singapore’s blistering structural transformation from military base and port into an industrial hub, where the manufacturing sector grew by 18.1 per cent annually between 1965 and 1973.³⁰

6. Case Study: Singapore

- ²⁶ The acid test of any policy is implementation. Fortunately, the developing world has a guiding star in Singapore, which rapidly scaled value chains by making the necessary investments in human capital. From a labour-intensive economy in the years following independence, Singapore transformed into a capital-intensive and finally a knowledge-intensive economy. Workforce skills and the economy developed in a dynamic fashion, as the skills development system was repeatedly overhauled, prompting further economic transformation, which in turn demanded fresh changes to the skills development system. Interventions came in two types: public investment and incentives for private investment. Underlying both was a coordinated, professional civil service essential to successful implementation.

Getting Started (1965 – 1978)

- 27 When Singapore separated from Malaysia in 1965, it had a GNP below USD 320 per capita, 9 per cent unemployment, a 50 per cent literacy rate, and no natural resources.^{31,32} At this early stage of development, Singapore could reap large productivity gains from reforms to the primary and secondary levels of schooling. Integrating the formerly disparate Chinese, English, Malay, and Tamil school systems, the Ministry of Education introduced a common national system that emphasized English as a second language, science, and mathematics.³³ These skills provided a foundation upon which a globally competitive workforce could be built. Starting from low levels of human capital, investments were accordingly basic, but they grew more sophisticated as did the economy and workforce.
- 28 Fortunately, Singapore did not have to wait for its investment in youth to mature before it could begin growing. Its well-developed infrastructure and the stability conferred by the People's Action Party's political dominance made the nation a prime investment environment.³⁴ Foreign corporations established garment and electronics factories to take advantage of low labour costs, and by the early 1970s, Singapore actually began to experience labour shortages, and had to rely on immigrants to meet demand.³⁵ Wages were kept artificially low, in effect providing Singapore with an artificial competitiveness.³⁶ But in order to develop, which involved allowing its citizens to enjoy higher wages, Singapore needed to develop its human capital and become more productive.
- 29 Thus, the 1972 recommendation by the National Wage Council to allow wage increases was followed by the creation in 1973 of the Industrial Training Board (ITB) to “centralize, coordinate and intensify industrial training.”^{37,38} The ITB fostered a close relationship with the private sector, which would become a hallmark of Singapore's vocational and technical education: it collaborated with businesses to develop relevant and rigorous curricula, it partnered with them to create apprenticeships and on-the-job training programs, and it signed memoranda of understanding with transnational corporations to keep its training staff updated on the most recent technological developments.³⁹ The ITB's close association with private enterprise was essential to its vocational training's effectiveness, and the transfer of knowledge from transnational corporations ensured that its graduates were trained in the best practices of their industry, able to take on ever more advanced tasks.
- 30 The custodian of Singapore's rapid growth and investment for the future was the Economic Development Board (EDB), which continues to play a key role in coordinating various branches of Singapore's government in order to achieve the paramount goal of development. The EDB not only attracted the foreign investment that solved Singapore's unemployment problems, it took responsibility for integrating the nation's skills development system with its development strategy. Its Manpower and Training Unit convinced transnational corporations such as Tata, Rollei, and Philips to set up Joint Government Training Centres, which subsidized the corporations' own training in return for surplus graduates who brought their skills to other firms.⁴⁰ Singapore's manufacturing sectors grew by 18.1 per cent annually from 1965 to 1973, before oil shocks moderated that expansion, but continued investment in skills prepared Singapore for future growth.⁴¹

A “New Industrial Revolution” (1979 – 1990)

- 31 In 1979, Singapore began an economic restructuring drive, the “New Industrial Revolution”, which sought to develop more capital- and skill-intensive industries.⁴² The four-pronged strategy involved investment incentives, an investment promotion programme, wage controls, and an expansion of the education and training system.⁴³ As a result, the ITB was replaced by the Vocational and Industrial Training Board (VITB), which was larger, more open to adults, and offered more and higher quality training courses.^{44,45} The VITB also institutionalized the ITB's links to business in its tripartite governance structure, ensuring representation of business, labour, and government interests.⁴⁶ This institutional expansion and sophistication reflected Singapore's developing economy, which achieved higher levels of capital and value added per worker during this time.⁴⁷
- 32 That year also witnessed the birth of the Skills Development Fund, which incentivized businesses to continually invest in their employees' skills. Still operational, the Skill Development Levy collects .25 per cent of each employee's salary on the first SGD 4,500 per month, or SGD 2, whichever is larger.⁴⁸ The revenues supply the Skills Development Fund, which provides grants to firms that provide training to their employees, according to the following matrix:⁴⁹

Table 1. Training supply by the Skills Development Fund

Type of courses	Funding components	Conducted by	Courses targeted at Rank & File	Courses targeted at PMEIs*
Certifiable	Course fee support	External training providers	80% of course fee capped at \$7/hr	50% of course fee capped at \$15/hr
		In-house instructors	\$7/hr	\$15/hr
	Absentee payroll support	External training providers / in-house instructors	80% of hourly based salary capped at \$4.50/hr	
Others#	Course fee support	External training providers / in-house instructors	\$2/hr	

* Professionals, Managers, Executives and Technicians.

#Funding for other training courses conducted by external training providers is capped at 100% of course fees.

Source: Workforce Development Agency (2012a).

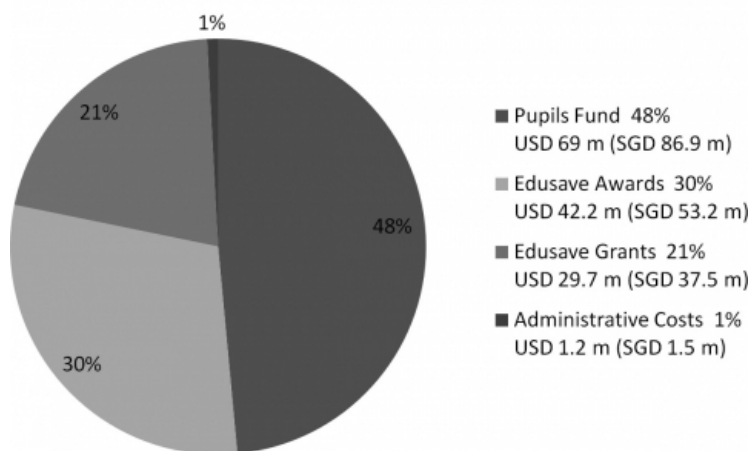
- 33 The Skills Development Fund has been recognized by the World Bank for offering special benefits to small and medium sized enterprises, which often invest less than large firms in skill development because they suffer from small economies of scale, low financing, and inexperience with training.⁵⁰ Although more intrusive than some other tools of soft industrial policy, the World Bank found the fund to have induced a “significant ... increase in company-based training programs”, supporting its value.⁵¹
- 34 The structural transformation that occurred during the New Industrial Revolution was a great development success as higher-value-added sectors and jobs appeared, but it also threatened to generate structural

unemployment if the economy left older, less-skilled workers behind. To cope, and to further upskill the labour force, Singapore introduced several continuing education and training (CET) programmes between 1983 and 1987. Basic Education for Skills Training (BEST) and Work Improvement through Secondary Education (WISE) provided working adults with the equivalent of a primary and secondary education, respectively, while Modular Skills Training (MOST) taught technical skills.⁵² These investments in adult workers enabled them to participate in a more productive economy, benefitting both them and the businesses that hired them.

The Beginnings of a Knowledge Economy (1991 – 2009)

35 The next major update to Singapore's human capital development system began in 1991 when the Long Term National Development sub-committee of the cabinet unveiled *The Next Lap*, a broad plan for national development that focused on human resources.⁵³ Among the many outcomes of its proposals was the Edusave scheme, which provides targeted funding to the general education system. Each Singaporean child between the ages of seven and sixteen receives annual contributions from the government deposited into his or her Edusave Pupils Fund, contributions which can only be withdrawn to fund enrichment activities or fees for educational purposes beyond the standard classroom experience, and cannot be used to purchase textbooks or uniforms, or to pay exam fees.⁵⁴ Edusave also provides awards to high-performing and well-behaved students and grants to educational institutions to fund enrichment activities.⁵⁵ Financed by the returns of a USD 5 billion endowment fund, the programme distributed SGD 179.1 million in FY 2011, or SGD 384.11 for each child enrolled in primary or secondary education – Edusave's target sectors.^{56,57} By tying the resources to exceptional activities or performance, Edusave minimizes waste and rewards quality in the foundational levels of its human capital development system.

36 **Figure 1. Amount disbursed by EduSave Pupils Fund, 2011**
Total Amount Disbursed in 2011
 USD 142.1 million (SGD 179.1 million)



37 *The Next Lap* also called for the establishment of a third university in Singapore, which became Singapore Management University.⁵⁸ The major push for higher education, however, came in 2002 from the Ministry of Trade and Industry report "Developing Singapore's Education Industry", which urged the "branding of Singapore as a global education hub" by improving its tertiary education system. Proposed strategies included attracting world-class universities to establish partnerships or branches in Singapore – as the Massachusetts Institute of Technology (MIT) and Wharton School of Business have done – increasing the proportion of young Singaporeans that attend college, and increasing resources by attracting more fee-paying international students.⁵⁹ Although uncontroversial proposals, the involvement of the Ministry of Trade and Industry in improving Singapore's education "industry" reveals the country's conception of soft industrial policy: development demands a coordinated effort, with departments that design strategies responsible for coordinating with the departments that will implement them.

38 In addition to moving into knowledge sectors, Singapore remained committed to its manufacturing base, and continued to invest in technical education accordingly. Its system of technical and vocational education and training (TVET) took on its current form in 1993 with the establishment of the Institute of Technical Education (ITE). In terms of academic ability, roughly the tenth to thirty-fifth percentile of a school cohort the ITE.⁶⁰ Crucially, individuals are not treated as less important than their peers who enter polytechnics or junior colleges. A former director of the ITE remarks that overcoming the Asian cultural preference for academic education and building pride in vocational education was one of the institution's greatest challenges and greatest successes.⁶¹ The ITE built its public image carefully, beginning with its physical presence. The three campuses offer state-of-the-art workshops as well as sports and arts facilities that foster a vibrant student life environment.^{62,63} Far from superfluous spending, these investments have been identified as "an important factor in changing the mindset and perception of the public and image of the ITE."⁶⁴ The ITE also raised the profile of technical skills with "'Top of the Trade' television competitions and 'Apprenticeship of the Year' awards", and promoted itself with branding and marketing campaigns.⁶⁵ By improving the cultural standing of TVET, the ITE has continued to produce the motivated, skilled graduates essential to Singapore's industrial competitiveness.

39 Singapore also links TVET to its industrial policy by nurturing a close relationship between the ITE and business. The Ministry of Education, which oversees the ITE, closely consults firms regarding the curriculum design and review process.⁶⁶ Basic manufacturing skills are too subject to poaching externalities for firms to invest in, so the public sector provides the training, but industry input ensures its "relevance, quality, and cost effectiveness".⁶⁷ The ITE also runs apprenticeship-type programmes, including the Traineeship, Approved Training Centre, and Certified On-the-Job Training Centre schemes, which grant firms various resources (including funding) to provide individuals with experience. This type of market-following investment in skills

development promotes high-level manufacturing in Singapore, which continues to make up 19 per cent of the country's GDP, even in such a high-wage environment.⁶⁸

Productivity Drive (2010 – present)

40 By the first decade of the new millennium, Singapore was already a success story. However, given its stated objective of catching up with Switzerland's level of development by 2020–2030, Singapore maintained its sense of urgency and renewed its efforts to promote development in 2010 with a campaign to increase productivity by 2 to 3 per cent per year for ten years. Tellingly, the body placed in charge of the productivity drive was named the National Productivity *and Continuing Education* Council (emphasis added). The link between education and productivity made clear that the campaign concerned *labour* productivity, not capital productivity, and viewed human capital as the most important means of raising labour productivity, and with it wages and development. Taking a sectoral approach, the council identified sixteen "priority sectors" for productivity growth and has drawn up "Productivity Roadmaps" for several of them, informing businesses how they can take advantage of government support for productivity upgrades, including worker training.⁶⁹

41 The council acts on its analysis through its control of the Productivity and Innovation Fund, an SGD 1 billion appropriation made by Singapore's government to bankroll the productivity drive.⁷⁰ The 2012 budget allocated an additional SGD 2 billion to the fund.⁷¹ In its first year of implementation, 20 per cent of Singapore businesses took advantage of the fund, primarily in the form of the Productivity and Innovation Credit.⁷² The Productivity and Innovation Credit reimburses firms for 400 per cent of their expenditure in six areas: training employees, information and automation technology, acquiring and licensing intellectual property, registering intellectual property, research and development, and design projects.⁷³ Firms are compensated in the form of tax breaks, but some of the money can be claimed in the form of cash payments — an arrestingly explicit incentive to improve productivity.

42 As its name suggest, the council also oversees a massive expansion of continuing education and training (CET). Under the CET Masterplan, two campuses are being constructed that will provide training facilities and other career services, such as advisory services.⁷⁴ Although overseen by the Workforce Development Agency (WDA), CET provision is decentralized, delivered by private training companies accredited by the WDA. Licensed CET providers grant Workforce Skill Qualifications (WSQs) to graduates, certifying their new skills. For each of the thirty-three WSQ frameworks, an Industry Skills and Training Council develops the curriculum, standards, and assessments.⁷⁵ Representation from firms, industry associations, and labour organizations provides the same quality and relevance oversight function as the ITE's close relationship with industry. For individuals that spend time in both the ITE and WSQ system, a Mutual Recognition Agreement exists to ensure that training remains "stackable", while increasing flexibility for workers who are seeking to upgrade their skills.⁷⁶

43 The final pillar of Singapore's most recent push to increase levels of human capital expands "Workfare" to provide a temporary income to low-wage workers while they enhance their skills. While the focus on the lower end of the skills ladder might seem counterintuitive for a country seeking to climb value chains, training in the most basic skills offers the greatest productivity gains; even for the OECD, a recent ILO report emphasizes the value of raising secondary-school completion rates, increasing certification of skills acquired on the job, and quality assurance systems in TVET.⁷⁷ Furthermore, a development perspective should emphasize efforts to benefit lower-income workers. Demand-led employment training offers a balanced approach to this between market solutions and aid.

44 Workfare includes two complementary operations: the Workfare Income Supplement (WIS) and the Workfare Training Support Scheme (WTS). WIS is the more straightforward: payments to low-income workers aged over thirty-five to support them as they acquire more skills.⁷⁸ Most of this payment goes into the worker's account with Singapore's compulsory saving system, the Central Provident Fund; only a small proportion comes in cash.⁷⁹ The WTS provides grants to employers who send their older, low-wage workers for further training, awards to individuals who complete courses (such as WSQs), and runs the Skills Up programme, which provides mentoring in basic workplace skills.⁸⁰ Together, the WIS and the WTS enable low-skill workers to meet basic needs while becoming more productive.

Evolution of Work Share

45 The First Quarter 2013 Economic Report of Singapore, published by its Ministry of Trade and Industry, conceded that the country's wage share lags behind most other developed countries. Singapore reports a rate of 43 per cent, while most developed countries achieve levels of 50 per cent or more.⁸¹ The report argues, however, that "wage shares do not necessarily translate to higher wages",⁸² as wage share is influenced by factors ranging from the sectoral composition of the economy to labour regulation. Despite Singapore's lower wage share, the report argues that the figure alone, without further analysis and comparison, cannot be taken as an indication of the country's workers being underpaid. In fact, Singapore's PPP-adjusted wage level, at USD 3,106, puts the country ahead of Japan, South Korea, and the euro area, which all have higher levels of wage share.⁸³

46 Further, although Singapore's wage share is lower, it has been quite stable over time, fluctuating less than 1 per cent between 1980 and 2009 (a 0.7 per cent increase).⁸⁴ The country has achieved this despite a trend of declining wage share in national income, as documented by the ILO's Global Wage Report 2010/11/12 and the OECD's Employment Outlook 2012.⁸⁵ The OECD noted a median decline of 4.4 per cent across the 26 countries whose labour share had decreased.⁸⁶ Taken in this context, Singapore's wage share appears solid, even though it encompasses a lower level than most developing countries.

7. Lessons

47 Singapore certainly paints an uplifting picture. But is it of any relevance to other developing countries? Other studies of Singapore's skill development model have cautioned against copying it, noting that the record of efforts to replicate policy models is not encouraging.⁸⁷ The institutional, political, economic, historical, and cultural

context of any policy initiative matter tremendously to its outcome. Singapore, for instance, is a rare example of a city state, with only 697 km² for its government to govern.⁸⁸ Perhaps only its small size made such complex, coordinated planning feasible. Singapore's government has also been described as a form of "soft authoritarianism", insulated from the vagaries of democracy; maybe its model would fail in a country with a more dynamic political environment.⁸⁹

48 But while it might not be possible to transplant Singapore's model, could it provide some lessons more useful than "human capital is important for development"? Nations seeking to emulate Singapore's success, if not its model, could follow these principles:

Strong Public Institutions

49 The best-designed strategy to invest in human capital still requires competent institutions to implement it. This is a frustrating first lesson, because it means that many countries struggling with skill mismatches need to improve their governing capacity before they can tackle them. However, there is no escaping the fact that the state must address "government failure" before it can fix market failures. Singapore certainly did so, building its development strategies upon the foundation of a professional civil service. The country placed third in the inaugural Corruption Perceptions Index created by Transparency International in 1995 and has remained close to the top ever since.^{90,91} The need for capable institutions to implement a human capital-focused development strategy adds urgency to the debate over what constitutes "good governance" and how to achieve it. Fortunately, several of Singapore's other lessons shed light on how to improve governance.

Tripartism: Engaging Stakeholders

50 Tripartism — the institutionalized cooperation of business, labour, and government on economic issues — helps policymakers acquire the input they need to do their job well. By granting a voice and even voting power to those involved, tripartite arrangements inform decisions and can help build consensus. In Singapore for instance, the National Productivity and Continuing Education Council is composed of six government representatives, four labour union representatives, and eight business representatives.⁹² Its tripartite character contributes to its mission to improve business competitiveness while simultaneously raising workers' standards of living. Furthermore, the personal involvement of trade union presidents and CEOs of major corporations lends credibility to its recommendations. Numerous other tripartite institutions, from the National Wages Council to the Tripartite Committee on Low-Wage Workers and Inclusive Growth verify Singapore's dedication to tripartition.

51 The partnership between government, business, and labour, particularly at high levels, is reminiscent of Peter Katzenstein's theory of corporatist arrangements in small states. Studying several small European countries, Katzenstein concluded that high-level bargaining between bureaucrats and interest groups allows them to manage the rapid change involved in participating in the global economy.⁹³ Singapore's close coordination with business and labour, as well as its frequent fine-tuning of a centralized economic strategy, have prompted comparisons with the corporatist framework before.⁹⁴ As an Asian example of the corporatist model, Singapore strengthens Katzenstein's argument that small states compete differently than large states, using their small size to coordinate economic actors in a way impossible for larger states. Thus, although tripartition is possible on a larger scale (it is a central principle of the ILO), it might work best in smaller environments. If so, Singapore could have lessons for say, Benin, but not Nigeria.

Focus on Competitiveness

52 Some historical efforts to spur development attempted to force the creation of new industries; the Singapore example of more intelligent intervention tries to induce development by fertilizing sectors that already have a comparative advantage.⁹⁵ True, Singapore practiced long-range economic planning, such as its 1984 goal to reach Switzerland's 1984 level of GNP per capita by 1999, but at the operational level, it promoted industries that could succeed immediately.⁹⁶ Keeping the ultimate goal of an advanced economy in mind, Singapore advanced methodically from labour-intensive industry into capital-intensive industry and finally into a knowledge-intensive economy that includes research, services, and high-end manufacturing. The Institute for Technical Education illustrates this principle: it has worked closely with industry to develop skills already in demand, *over time* raising the skill levels of Singapore's manufacturing workforce.

53 If we imagine private enterprise to be a river, governments like Singapore do not build massive dams of trade protection and dig deep trenches of subsidies to divert its course; they strategically remove blockages caused by market failures, allowing the energy of private enterprise to carve a new channel for itself. This approach maximizes the chance that public investment pays off, making an activist development strategy affordable.

8. Conclusion

54 Singapore challenges notions about what developing countries can accomplish. Eschewing both import substitution industrialization and neoliberal prescriptions for development, the island country achieved historically rapid development by combining security, free markets, and continuous upgrades to its human capital. Although the government of Singapore never promoted its model or insinuated itself into debates of comparative political economy, the "developmental state" paradigm that it represents now enjoys broad support from theorists and international organizations.⁹⁷

55 However, there is less consensus about how states should go about facilitating development. Singapore's experience suggests that in the proper context, investments in human capital can drive development. Using a combination of public investment, incentives for private investment, and close coordination with business and labour, Singapore rapidly upgraded its citizens' skills, productivity, and ultimately their standard of living. While skills development certainly does not fully explain Singapore's development success, it was undoubtedly essential

to the country's ability to keep moving into higher-value-added activities. Without rising levels of human capital, development would have stalled as skill gaps held back more advanced sectors.

56 This approach succeeded spectacularly for Singapore, which continues to attempt to improve labour productivity. However, rising inequality poses a threat to its continued success. Singapore's Gini coefficient has steadily crept upwards, rising from .454 to .478 in the last ten years, which included the moderating effects of the global economic crisis.⁹⁸ From a development perspective, this means that less productivity gains trickle down in the form of higher wages. The declining share of income going to wages might slightly benefit competitiveness, but that faces diminishing returns and threatens to undermine domestic demand.⁹⁹ To maintain its dedication to development, Singapore may need to continue to fine-tune its strategy.

ANSWER by S. GOPINATHAN | A Response to R. Saner and L. Yiu's Learning to Grow: A Human Capital-Focussed Development Strategy, with Lessons from Singapore

1. Introduction

57 One of the enduring questions for twenty-first century politics and government is policy issues related to economic growth and national well-being. The key question is which social policies, especially in education, lead to sustained growth. This remains important in spite of economic growth in a huge number of countries in the last century and millions raised out of poverty. Notwithstanding those facts, millions more remain impoverished and national and international peace and sustainability cannot be envisaged without socio-political development of which economic growth is one key enabler.

58 As Saner and Yiu point out in 'Learning to Grow: A Human Capital-Focussed Development Strategy, with Lessons from Singapore', for a range of countries a key challenge is to avoid 'the middle-income trap', a situation in which economic growth has plateaued and a country is unable to transition to the next level in part due to inadequacies in high-level human capital. Failure to make that transition leads to the possibility of increased competition from low-cost economies and heightened tension and frustration among nationals who now have, as a result of earlier economic growth, heightened expectations and aspirations. To ensure this trap is avoided, Saner and Yiu call for 'a much closer alignment of policies for human capital and economic development' and a 'human capital focussed development strategy'. They point, rightly, to Singapore as a country that has avoided the middle-income trap, that now has a sophisticated and diverse economy, and that has one of the highest GDP per capita ratios in the world.

2. Singapore as a Developmental State

59 Singapore's political class faced huge issues in building a viable state in the fifties and sixties. There was an underdeveloped economy, unemployment, labour unrest, and a school system divided by medium of instruction. Malaysia and Indonesia, Singapore's two closest neighbours, looked on Singapore with suspicion, due in large part to its majority Chinese population. Malaya faced a Communist-inspired insurgency while Indonesia viewed Singapore as a British colonial outpost. A short-lived merger with Malaysia (1963 – 1965) further fuelled feelings of insecurity. It was a period that has been characterized as calling for a 'politics of survival'.¹⁰⁰

60 These challenges in turn concentrated minds on the policies that were required, and an eschewing of ideology in favour of pragmatism. A strong state apparatus was created to domesticate both labour and capital and to have them serve developmental needs. The government built up its capacity to learn from both the successes and failures of other policy regimes, in particular, shunning economic nationalism in favour of a market economy and foreign investment. New institutions such as the Economic Development Board, which successfully spearheaded the search for Foreign Direct Investment (FDI), were created in the early sixties. At present, Singapore benefits from an early policy decision to ensure that manufacturing remained an essential component of the economy. It must be noted that Singapore was not without assets when it began its developmental journey.¹⁰¹ Britain left behind a competent civil administration and a rule-of-law tradition, which the government built upon. There was the infrastructure of the port and allied industries, and a level of English language competence unmatched in the region. An early decision which illustrates the aforementioned pragmatism is the one that maintained English as the dominant medium of instruction at all levels; the rationale being that Singapore needed capital, technology, and markets for its modernization.¹⁰²

61 The leadership of the People's Action Party (PAP) was influenced by Fabian political ideals — key members of the leadership had been educated in Britain — but soon realized that it was necessary to grow the economic pie before redistributing wealth. One key decision was for the government to prioritize economic growth, to have a share in the economy, and to utilize surplus to build infrastructure such as housing, schools, hospitals, and transport networks, and — as Saner and Yin point out — this strategy to some extent offset the low wages that labour received especially in the early stages of industrialization in the seventies.

3. Developing Human Capital (1960 – 1978)

62 A key question has to be the extent to which human capital policies contributed to Singapore's stellar economic growth. There is no doubt they played a large part, and will continue to do so, but it is also important to ask hard question about policy missteps and recognize unintended outcomes.

63 How can one characterize the Singapore education system? Given a five-decade development history, it is important to see its evolution in phases. Up until the late seventies, even when economic growth — especially job

creation — was impressive, Singapore had an under-performing education system. The system was burdened by an over-ambitious bilingual curriculum, poor quality teaching, and only rudimentary Technical and Vocational Education and Training (TVET) infrastructure. Though primary schooling was near universal, Singapore did not have a policy on compulsory education (even today, only primary education is compulsory). There was high attrition in the system leading to a major review in the late seventies (Report on the Ministry of Education, 1978).¹⁰³ Labour productivity was low, averaging 3 per cent per annum compared to about 7 per cent in Japan, Taiwan, and Hong Kong. It could therefore be argued that it was finance rather than human capital that spurred economic growth along with the fact that the government worked hard to create favourable conditions for investment, especially by maintaining peaceful industrial relations.

64 Significantly, in this phase the government put key TVET policies in place and invested in training infrastructure like the Adult Education Board, later the Vocational and Industrial Training Board. At the school level it mandated compulsory exposure to a TVET curriculum for male- and 50 per cent of female students. And it invested in teacher training as it recognized the lack of skilled teachers as an education quality issue, and in creating centralized workshops to serve students in a cluster of schools, a cost-effective way of overcoming facilities shortages. The government was not averse to setting manpower targets for post-secondary education, seeking to channel some 60 per cent of the cohort into technical/vocational education.

65 Another key feature of the system in this phase was that the government resisted the temptation to expand university education and instead invested in vocational and polytechnic education. Further, it ensured that these academic institutions kept close links with industry and were alert to changing demand for skills. Adequate resourcing, curricular flexibility, and innovation characterize these institutions to this day.¹⁰⁴

66 The government, recognizing that demand for skills was outstripping its capacity to educate and train (due to the success of the Economic Development Board (EDB) in attracting FDI), was able both to leverage foreign companies keen to invest in Singapore — Tata, Rolex, etc. — and to learn by obtaining assistance from Japan, Germany, and France. It is clear that the government's strategy was not to rely on the school system alone. The creation of the Skills Development Fund enabled companies and businesses to invest in their employees' skills, a significant departure from previous practice where employers saw it as the responsibility of the state to provide them with skilled labour.

4. Gearing Up (1979 – 1990)

67 Saner and Yiu attribute some of the success of the Singapore model to the Edusave initiative. While helpful in that it provided financial aid to poor but deserving children, and in this way helped to keep them in school, it did not directly impact on skills development. By the early nineties, Singapore had reduced attrition and built up a robust education system. More significant would be the decision to allow the use of Central Provident Fund (CPF) savings for education purposes as it facilitated the upgrading of qualifications and competencies.

68 A major feature of Singapore's skill development infrastructure that receives insufficient attention in Saner and Yiu's paper is the role played by polytechnics. There are five well-resourced polytechnics, which enrol a larger share of students from post-secondary education than the Institute of Technical Education (ITE) and the universities.¹⁰⁵ They were and are crucial in the augmentation of Singapore's skills stock. Indeed, it is possible to argue that the type of activities that ITE students are skilled to perform, will — in the future — be largely automated, and that companies needing such skills will relocate to sites at which labour is cheaper. In contrast, polytechnic-style education will confer skills that can be upgraded. Currently, many holders of a polytechnic diploma are pursuing university qualifications. The polytechnics played a significant role in the eighties and nineties in Singapore's transition to a knowledge economy.

69 With regard to university education, the government's stance was that publicly funded university education was only for the most able, estimated to be around 25 per cent of the cohort. It resisted the temptation to unwisely expand university education — up until the late nineties there was not even the alternative route of private university education in Singapore — and instead worked hard to make TVET attractive and closely linked to labour market needs. It was only when the economy was ready to move into its present knowledge economy phase that university access was expanded. The Singapore Management University (SMU) and the Singapore University of Technology and Design (SUTD) were established in 2000 and 2012 respectively, and more recently, under pressure from the electorate, the government has agreed to increase the university participation rate from the current 27 per cent to 40 per cent by 2020. It has insisted that graduates from these new institutions will have employable skills; internships will be a key feature in the design of programmes at SIM University and the Singapore Institute of Technology. Manpower from the universities will be the key to filling managerial positions and a key asset in contributing to Research and Development (R&D).

5. Skills in the Knowledge Economy (1990 – 2014)

70 Singapore has made a successful transition to the knowledge economy. A strong education and training infrastructure exists, which the government labels a 'bridges and ladders' system, with multiple pathways. There is strong commitment to and investment in R&D though much of the talent needed to staff institutes like Biopolis and Fusionopolis has to be imported. The ability to coordinate policies across ministries gives policy and implementation a coherence lacking in other countries. There is both a strong reform imperative at work in the school system and on-going development of worker training through initiatives such as the Workforce Development Agency.

6. Current Issues

71 Several issues trouble Singaporean education at the present time. One is that the dominant focus on economic growth and the yoking of the education system to serve manpower needs has meant that both policy makers and citizens adopt an instrumental view of education, notwithstanding rhetoric and calls for holistic education. The

curricula emphasis on languages, science, and mathematics has meant a neglect of the humanities. The system is regarded as having become obsessed with certification and parents invest large sums in private tuition. Competition to get into the top schools, programmes in universities, and polytechnics is intense. This orientation has consequences for Singapore's aspirations to be a major player in the Knowledge-based Economy (KBE). The KBE rewards twenty-first century competencies such as creativity, resilience, entrepreneurship, and communication skills; the present performance orientation is ill suited to meet the needs of such an economy.

72 The Singapore state's successful management of the economy has made it rich but Singapore is also faced with increased income inequality and slowing social mobility. In pursuit of economic growth, it allowed for the liberal import of labour at both ends of the skills continuum in the last two decades. Schemes like Workfare are designed to address voter dissatisfaction, given that the government is resisting adopting a minimum wage policy. The links between certification, skills, and employment are fraying and are going to require more innovative policy responses. Voters are now asking what ends economic growth should serve.¹⁰⁶

7. Lessons

73 Some key features of Singapore's development experience are worth noting. Singapore succeeded by recognising vulnerabilities, challenges, and opportunities. It built strong institutions and professionalized its civil service. It made quality and cost effectiveness key principles and avoided, where it could, populist measures. Successful implementation was a key feature of policy regimes and the country smoothed out contradictions by fostering coordination and 'joined-up' government.

74 Each phase of economic development throws up new policy challenges for skills development. Singapore will have to successfully change the culture and ethos of its education system, finding a balance between rigour and standards and innovation and creativity; it needs a less performance-oriented system. It will need to ensure the continuing relevance of ITE skills preparation to knowledge economy developments and requirements; and worker skill training can only succeed if employers are able to fairly reward workers and can take advantage of new worker skills and dispositions. Much has been achieved in Singapore but much more remains to be done.

75 To be sure, it would not be possible to export these policies to other contexts, but important principles can be gleaned from the Singapore experience. The reality of competition spurred a focus on economic growth, which could not be sustainably achieved without investment in human capital. Policy innovation and implementation capacity requires a professionalized civil service. A close linking of education institutions to economic growth trends and skill requirements in the labour market is essential to keep training relevant. And the government and employers need to share in worker skill development.

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List of illustrations



- Title **Table 1. Training supply by the Skills Development Fund**
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- Title **Figure 1. Amount disbursed by EduSave Pupils Fund, 2011**
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