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The practice of industrial policy. Lessons for Africa: Co-ordination through an Asian lens

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The practice of industrial policy

Lessons for Africa: Co-ordination through an Asian lens

Justin Yifu Lin,¹ and Khuong Minh Vu²

December 2014

Abstract: African countries are facing great opportunities but also formidable challenges in accelerating economic growth and sustaining a high level of economic performance. The experiences of East Asian countries may offer valuable insights for African leaders and governments in making concerted efforts to formulate and implement effective industrial policy for dynamic structural transformation and inclusive growth. To this end, this paper presents useful lessons from selected East Asian countries, organized into five strategic dimensions in an ‘ASIAN Framework’: (i) Aspiration; (ii) Strategy; (iii) Implementation; (iv) Acquisition of knowledge; and (v) Nurture of human capital formation.

Keywords: new structural economics, industrial policy, strategy, Asia, Africa

JEL classification: O10, O25, O53, O55, O57.

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1 Introduction

Much has been written about the success of Asian economies and the lessons this success offers to developing countries. Among the most comprehensive studies about this topic are *The East Asian Miracle* (World Bank 1993) published by the World Bank in 1993, and *The Growth Report* (World Bank 2008) compiled by the Growth Commission, a group led by two Nobel laureates in Economics (Robert Solow and Michael Spence). *The East Asian Miracle* examines key policy factors underlying the superior performance of eight high-performing Asian economies (HPAEs) between 1965 and 1990; these include Japan, the ‘Four Tigers’ (Hong Kong, South Korea, Singapore, and Taiwan), and three newly industrializing countries (Indonesia, Malaysia, and Thailand). *The Growth Report* investigates the stylized facts in an exhaustive list of the world’s most successful economies, selected on the basis of their high gross domestic product (GDP) growth rate (7 per cent or more) for a minimum of 25 years in the past six decades. This list contains the eight HPAEs, China, and four non-Asian economies (Botswana, Brazil, Malta, and Oman). Together, the two publications identify the following important features of successful Asian economies:

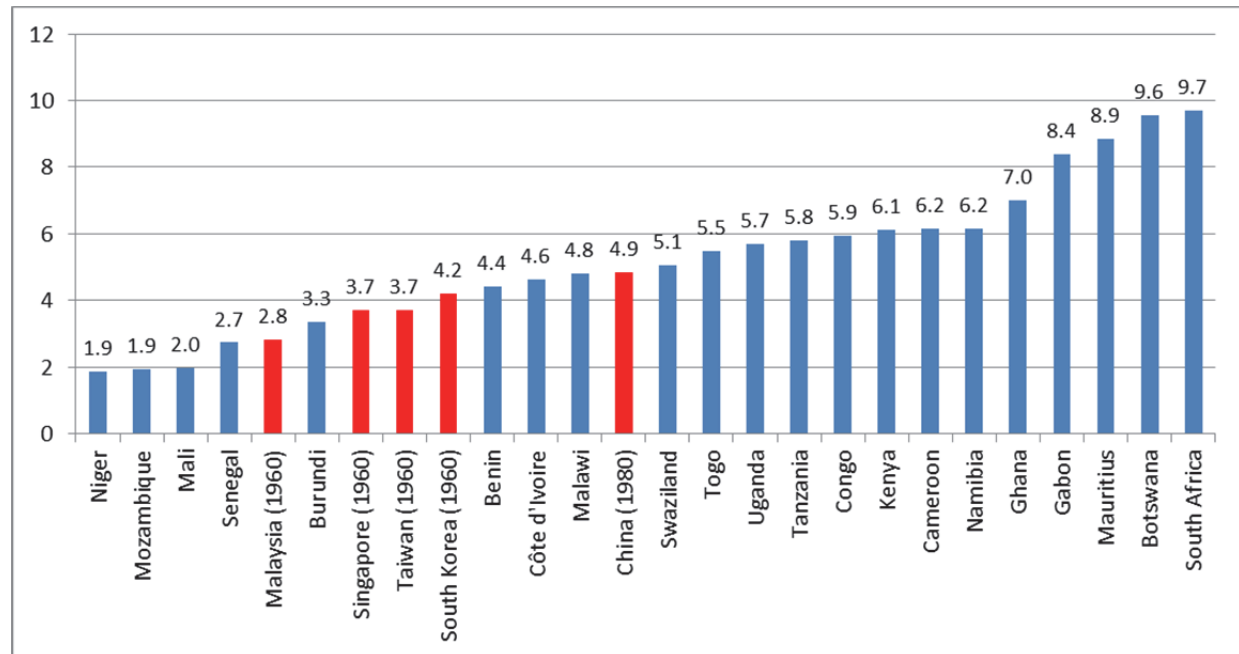
- i. Fully exploiting the world economy; rapid growth of exports, to which manufactured products make the most contribution;
- ii. Maintaining macroeconomic stability;
- iii. Relying on markets for allocation of resources;
- iv. Promoting output and productivity growth in the agricultural sector and its rapid reallocation of resources to other sectors;
- v. Mustering high investment and saving rates, with savings exceeding investment;
- vi. Fostering robust human capital formation, for which systems of education and training have experienced dramatic growth and transformation;
- vii. Keeping income inequality low while successfully reducing poverty;
- viii. Having committed, credible, and capable governments.

This paper argues that these lessons are particularly meaningful and applicable for low-income countries such as those in sub-Saharan Africa (SSA). Profound changes in the world economy over the past few decades have generated currently favourable conditions for low-income countries to make strides in economic growth. In particular, the widespread diffusion of information and communications technology (ICT) and unrelenting waves of globalization have been major drivers of growth, facilitating unprecedented access to information and knowledge, acquisition of technology and know-how, and formation and development of human capital. Furthermore, in most SSA countries human capital—the main engine of economic growth—has now risen to levels comparable to those in successful Asian countries at their respective stages of development (Figure 1).

Challenges facing the efforts of SSA countries to catch up economically now depend more on the commitment and wisdom of their leadership than on the status of their basic conditions for growth. The lessons from East Asian development success can be a valuable source of wisdom for African leaders. As Lucas (1993) states, ‘If we know what an economic miracle is, we ought to be able to make one’. The challenge, however, is how to help African leaders and governments more deeply understand the nature of Asia’s economic growth miracle and more thoroughly master the policy framework for applying its lessons. In this spirit, this paper aims to provide insights into the nature of the Asian economic miracle and its policy framework through the perspective of *new structural economics* and the relevant experiences of successful Asian countries.

This paper proceeds as follows. Section 2 highlights the recent dynamics of economic growth in SSA countries and discusses their potential to accelerate the growth process. Section 3 briefly introduces the principles of new structural economics, enabling a better understanding about the nature of economic growth and the lessons of successful Asian countries. Section 4 presents a strategic framework that underlies the efforts of successful Asian countries to foster economic growth and catch-up endeavours. Section 5 makes concluding remarks.

Figure 1: Educational attainment: SSA in 2010 vs. Asia at the beginning of rapid development

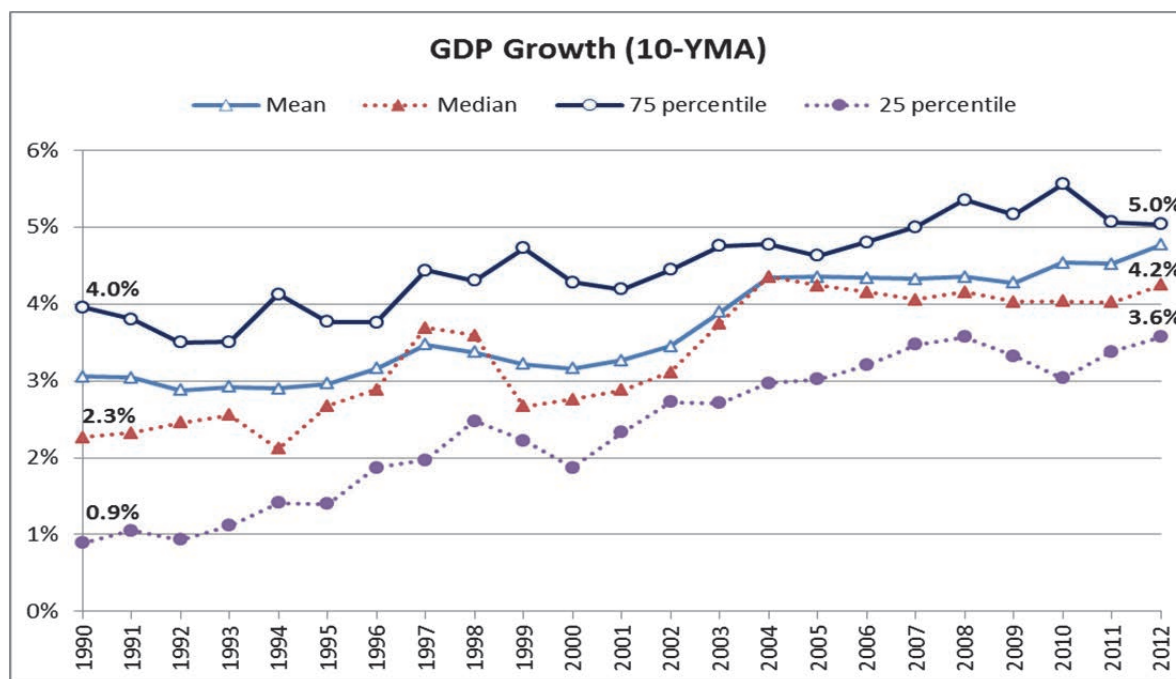


Source: Barro-Lee and Lee (2013).

2 Economic growth in SSA countries and potentials for economic catch-up

Growth in SSA countries has been trending upwards over the past few decades. The region's ten-year moving average (10-YMA) of GDP growth rates accelerated significantly between 1990 and 2010: by 2% points, from 2.3% in 1990 to 4.2% in 2012 for the median; by 1% point, from 4% to 5% for the 75th percentile; and by 2.7% points, from 0.9% to 3.6% for the 25th percentile (Figure 2). This observation suggests that laggard countries (25th percentile) tended to improve their performance more substantially than top-performing countries (75th percentile).

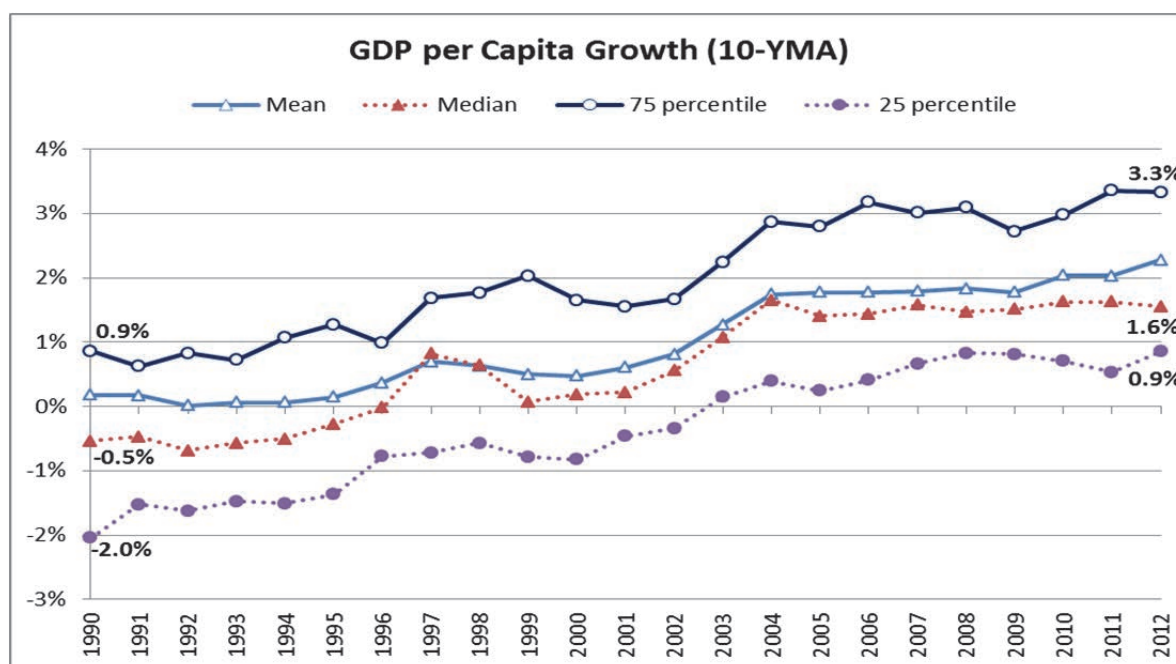
Figure 2: SSA countries and GDP growth trends



Source: World Bank (2014).

SSA countries' per capita GDP growth has also experienced an upwards trend. The region's 10-YMA of GDP per capita growth rates rose between 1990 and 2010: by 2.1% points, from -0.5% in 1990 to 1.6% in 2012 for the median; by 2.5% points, from 0.9% to 3.3% for the 75th percentile; and by 2.9% points, from -2.0% to 0.9% for the 25th percentile (Figure 3). It should be noted that the 10-YMA of GDP per capita growth rate for the 25th percentile was not positive until 2003. This indicates that laggards among SSA countries suffered from decrease in their GDP per capita until the most recent decade.

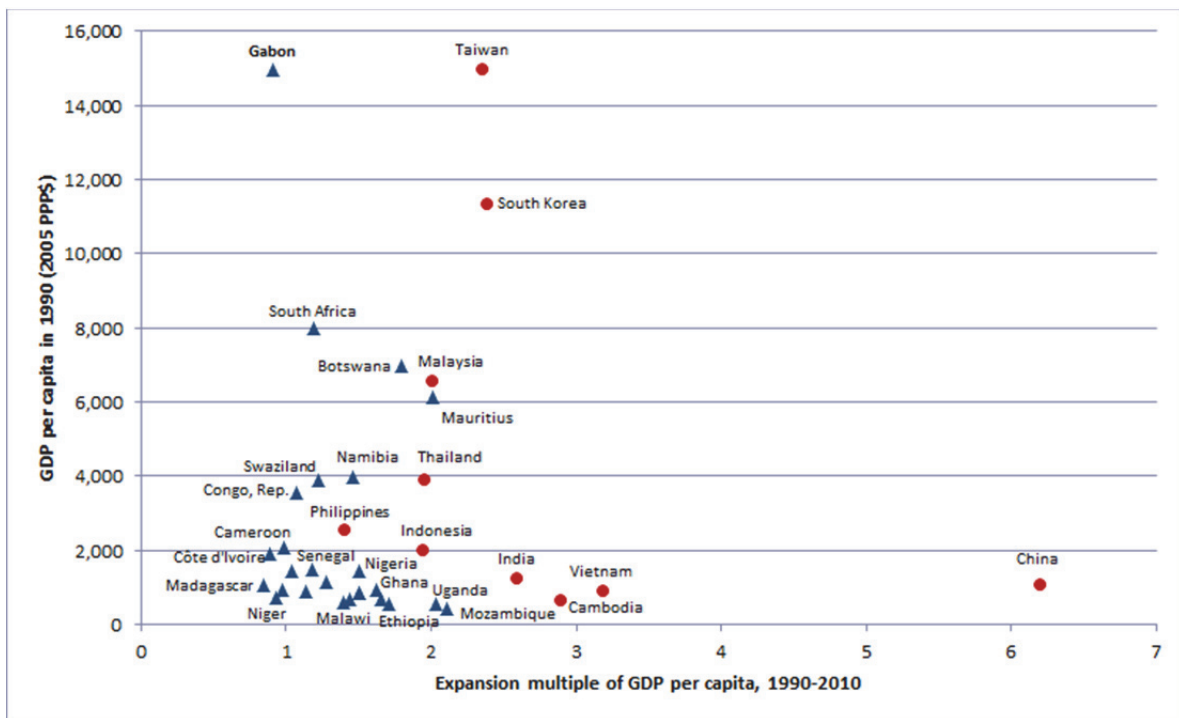
Figure 3: SSA countries and GDP per capita growth trends



Source: World Bank (2014).

Although SSA countries have experienced increasing economic growth, their catch-up performance continued to lag Asian economies over the same period. The per capita GDP of four Asian countries—China, Vietnam, India, and Cambodia—was equivalent to that of SSA countries in 1990 (Figure 4). However, these four Asian countries raised their income levels by a comparatively higher multiple between 1990 and 2010: China by 6.2 times, Vietnam by 3.2, Cambodia by 2.9, and India by 2.6. In contrast, over the same period most SSA countries raised income by multiples of only 1.0 to 2.0 (Figure 4).

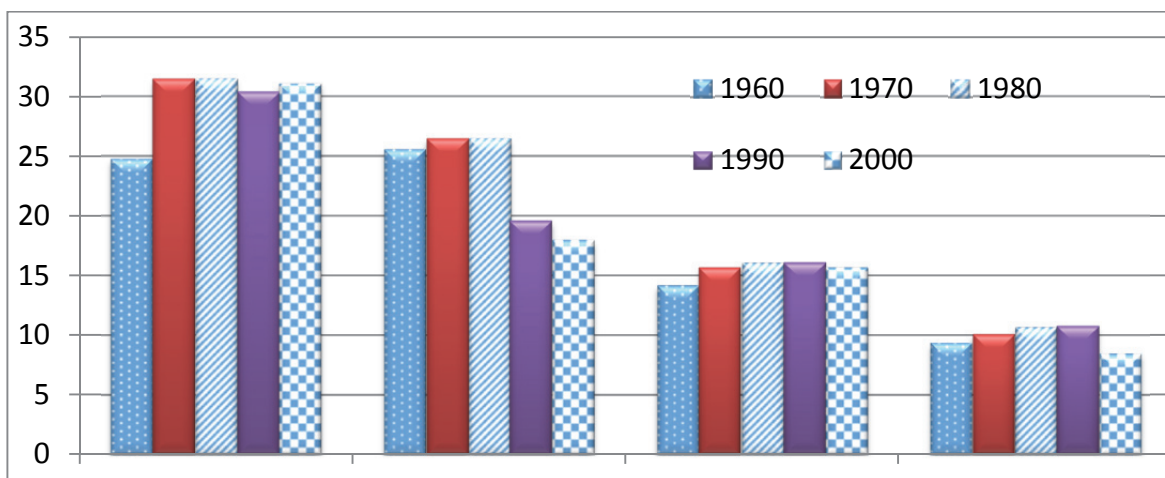
Figure 4: Catch-up performance, 1990-2010: SSA vs. developing Asia



Source: World Bank (2014).

One of the most significant obstacles to the economic growth of SSA countries is its inability to create conditions necessary for exploiting comparative advantages and fostering structural change. For example, SSA countries notably are facing de-industrialization (Figure 5).

Figure 5: Levels of industrialization



Source: World Bank (2014).

In summary, the data suggest that SSA countries are experiencing encouraging trends in economic growth. However, major obstacles remain, which prevent these countries from achieving the high economic growth seen during the Asian economic miracle and in the more recent wave of growth in newly successful Asian economies.

3 Mastering the principles of new structural economics to achieve high sustained growth

Mastering the principles of new structural economics can help scholars discern the nature of economic growth and understand why some countries have generated economic miracles. New structural economics, as depicted by Lin (2011, 2012a), can be characterized by three principles: (i) each country at a given time has a certain comparative advantage defined by the evolving potential of its endowment structure in the context of globalization; (ii) to best exploit its comparative advantage for economic development, a country must rely on the market as the optimal resource allocation mechanism at any given stage of development; and (iii) the state can play a pro-active role in facilitating the process of industrial upgrading, especially for the formation of enabling factors and the promotion of entrepreneurship, clustering, innovation, and foreign direct investments. New structural economics underscores the idea that a country can grow more rapidly if it better leverages the comparative advantage of an evolving endowment structure at every stage of development and capture the benefits of advantages of backwardness. These dynamics most effectively foster economic transformation, and hence enable a country's economy to achieve high and sustained economic growth.

As elaborated by Lin and Monga (2010), new structural economics provide a framework to better understand lessons that developing countries can learn from successful economies. Known as the five stylized facts, these lessons are identified by the Growth Commission¹ as the following: (1) openness to the world economy; (2) maintaining macro-economic stability; (3) engendering high rates of saving and investment; (4) relying on markets for the allocation of resources; and (5) having committed, credible, and capable governments.

If a country masters its comparative advantage and thoroughly understands global competitive dynamics and opportunities, it can position itself more effectively within the world economy. In particular, a low-income country can substantially accelerate growth by leveraging its backward advantage. Lagging in the world's technology frontier, such a country can acquire new growth capabilities cheaply and quickly by importing knowledge and technologies from advanced nations and attracting foreign direct investment. Strategically leveraging comparative advantage in a dynamic global economy, a capable government can then deepen its reliance on the market mechanism for resource allocation and strengthen its role in facilitating structural change in national endowment. Macro-economic stability and high rates of savings would thereby represent the endogenous outcomes of economic growth and transformation processes.

¹ The commission, which consists of 19 well-known and experienced policy, government, and business leaders mostly from the developing world, along with two Nobel laureates in Economics (Robert Solow and Michael Spence), was established in April 2006 and released its final report in May 2008. The group of 13 successful countries was selected based on maintenance of a high GDP growth rate (7 per cent or more) for a period of 25 years or longer. This group includes China, Hong Kong, Indonesia, Japan, Malaysia, South Korea, Singapore, Taiwan, Thailand, Botswana, Brazil, Malta, and Oman, nine of which are from Asia.

4 A strategic policy framework for fostering economic development through structural change

Sustained robust economic development is a transformational process. As argued in new structural economics, it requires effective co-ordination in fostering structural change to reorient resources toward higher productivity users, sectors, and locations. Successful experiences from Asian countries imply the presence of an effective strategic policy framework, which developing countries can apply to design and implement concerted initiatives for promoting structural change and economic development by facilitating private sectors' development in industries that are consistent with the countries' comparative advantages. This framework consists of the following five components, which can be referred to as the 'ASIAN framework': (i) **A**spiration; (ii) **S**trategy; (iii) **I**mplementation; (iv) **A**cquisition of knowledge; and (v) **N**urture of human capital formation.

4.1 Aspiration

Aspiration to catch up is crucial trait for poor nations seeking to leverage growth opportunities in the new global economy. This aspiration inspires a country to adopt ambitious development goals. When based on a robust understanding of the country's comparative advantages and global trends, this ambition is not only the compass for the development process but also a powerful source of energy and dynamism (Vu 2013). This is particularly applicable in efforts to restructure from low- to high-endowment structures. Leadership's articulation of the aspiration to catch up in economic development has been a common feature of proactive, commitment governments in Asian countries that have been successful in their development endeavours.

Japan

In the mid-nineteenth century, the Meiji leaders of Japan were shocked by the superiority of Western military powers and the lingering threat of foreign dominance. The leaders aspired to build a new Japan characterized by strength and influence in the modern world. The Charter Oath, which the Meiji leaders drafted in 1868, expressed a resolute aspiration and determination to succeed in this effort through 'enlightened ruling' (Meiji) and vigorous efforts to acquire knowledge throughout the world (Jansen 2000).

Korea

President Park Chung-Hee admired Japan for its Meiji Restoration (1868-1912). He expressed a burning aspiration to transform South Korea into a second Japan: 'I am pushing for the modernization of my country as the modernizing elite of the Meiji Restoration did.' (Moon and Jun 2011).

Park Chung-Hee also aspired to learn from West Germany, admiring the country's revival after the Second World War. In a speech before his visit to West Germany in 1964, Park stated: 'I intend to witness firsthand the revival of West Germany, a country which has emerged from the ashes of the Second World War as a prosperous nation that has achieved outstanding economic development.' (O 2009: 80).

Singapore

Beginning in the early 1960s, Prime Minister Lee Kuan Yew and his leadership team harboured a strong desire to grow quickly and comprehensively, consulting with experts and producing a development model that has since proven remarkably effective. Lee Kuan Yew's aspiration was

to make Singapore into a ‘First World oasis in a Third World’ by establishing ‘first world standards in public and personal security, health, education, telecommunications, transportation, and services’ (Lee 2000: 76).

He also deepened his commitment to build a distinctive and resilient Singaporean character. According to then-Prime Minister Lee, ‘...We had to make extraordinary efforts to become a tightly knit, rugged and adaptable people who could do things better and cheaper than our neighbors [...]. We had to be different.’ (Lee 2000: 24).

China

The Communist Party of China (CPC) embarked on transformational economic reforms in 1978 with the aim to ‘advance courageously to make a fundamental change in the backward state of our country so that it becomes a great, modern, socialist power.’²

Setting a high aim is important not only during the inception of reforms but also at critical junctures of the economy’s transformation. In 1992, the conservative faction of the CPC feared that China would deviate from its socialist goals, ultimately launching a series of attacks against reform and calling for the elimination of special economic zones. Nevertheless, Deng Xiaoping rallied support for the acceleration of reforms during a trip to Southern China in January 1992:

Now that the peripheral countries and areas have the lead on us in economic development, if we fail to catch up with them or if we advance at a slow pace, the public may have grievances when they make a comparison. Therefore, if an idea can help speed up development, we must not stop it but should try to make development still faster. [...] We must seize every opportunity to make the country develop quickly. We have a good opportunity now; if we fail to seize it, it will be gone very soon. Slow development simply means to halt. We must strive really hard to upgrade the economy to a new level every few years.³

Vietnam

The recent success of Vietnam owes much to opportunities generated by ICT, and can serve as an example for how the aspiration of committed leadership can enable a country to quickly seize technology trends in upgrading its endowment structure. Due to this strong ambition and unwavering commitment, the Vietnamese leadership has also been more decisive in dismantling the monopolistic structure in this industry, promoting competition in the private sector and modernizing ICT infrastructure. As a result, in scarcely more than a single decade Vietnam transformed its dilapidated telecommunication system and negligible ICT production capacity into a highly competitive digital infrastructure, creating a vibrant hub of global ICT manufacturing and outsourcing. Appendix 1 details Vietnam’s initiatives and achievements in this endeavour.

² ‘Communiqué of the Third Plenary Session of the 11th Central Committee of the Communist Party of China’, adopted on 22 December 1978, Beijing Review. Available at: http://www.bjreview.com.cn/special/30yearsofreform/2008-11/29/content_167170.htm (accessed 10 October 2012).

³ Deng’s remarks on his trip to the Southern China in 1992, cited in Marti (2002: 104).

4.2 Strategy

After establishing clear and ambitious goals for development, a country needs to formulate an effective strategy to achieve them. An economic development strategy can be seen as a set of tactical choices and guiding principles in pursuit of such goals. At the core of this strategy are the strategic directions, critical economic sectors, major thrusts, and priorities that the country should identify and articulate in order to fully exploit its comparative advantage, fostering structural change and economic growth.⁴

To formulate an effective economic strategy, a country should first thoroughly understand its core competencies and the comparative advantages associated with its current endowment, along with global opportunities and challenges, and major technological and socio-economic trends (Lin 2009, 2011, 2012a). The formulation of an effective economic strategy requires a strong political commitment from top leadership and vigorous engagement of all stakeholders. The strategy must be an indigenous product of the country, firmly rooted in a unique context and informed by feedback from the government, businesses, think tanks, other experts, professionals, and labour representatives. The strategy should not be merely the product of a consulting firm, international organization, or individual government agency. The recent experience of Singapore, Malaysia, and Indonesia in formulating economic development strategies, as elaborated in Appendix 2, can serve as useful examples.

An effective economic strategy plays a crucial role in identifying the country's comparative advantage associated with its evolving endowment structure and proposing strategic directions and priorities for fostering structural change in an economy.⁵ The formulation of an effective strategy is characterized by the following three features. First, a strategy aligns the country's economic development efforts across sectors and regions, strengthening their coherence, consistency, efficiency, and co-ordination effectiveness. For a large developing country, the government may jumpstart the dynamic growth process by pragmatically creating localized enabling environment in industrial parks/zones for industries of the country's comparative advantages, extending the improvements across regions and sectors gradually in line with the government's available resources and implementation capacity.⁶ Second, a strategy enables the country to more effectively monitor and evaluate progress in economic development; hence, it fosters learning, reflection, and adaptability. Finally, a strategy induces businesses and workers to embrace change and prepare for rapid modernization toward a world-class status. The case of Singapore's maritime industry as described in Box 1 can serve as an example of the success of this transformation.

⁴ Page (2012) argues that African countries need a strategy for breaking into the global industrial economy, which is focused on three interrelated strategic objectives: tilting towards exports, building capabilities, and encouraging agglomeration.

⁵ Only if an industry is consistent with a country's comparative advantages determined by its endowment structure will the industry have the lowest possible factor costs of production. However, to be competitive in the global market, what matters is the total costs, which consists of both factor costs of production and transaction costs. It is thus essential for the state to co-ordinate or provide the necessary improvement in hard and soft infrastructure to reduce the transaction costs to turn a country's comparative advantages into competitive advantages (Lin 2012a, 2012b).

⁶ This pragmatic approach of creating localized enabling environment explains why East Asian countries are able to achieve sustained high growth in spite of poor overall doing business environment and infrastructure.

Box 1: Singapore: Creating a world class maritime industry

In the early years of its independence from the British, Singapore was faced with high levels of unemployment and underemployment. Tight labour conditions at that time prompted the search for alternative avenues to create jobs for its growing population. Following the recommendation from the United Nations, the government embarked on initiatives to develop its maritime industry.

While the government had initially taken stakes in major enterprises in the early years of the transformation, it nonetheless heavily advocated a market-driven maritime development. The government laid the foundations for the industry by building critical infrastructure and upgrading maritime skills to meet the growing demands of the industry. At the same time, the government invited local and foreign capitalists to venture into its flourishing maritime industry thereby creating greater competition among key players. This market-driven strategy paved way for higher innovation and production of higher value products and services that started from ship repair and eventually moved to the construction and conversions of the latest generation drilling rigs and floating production platforms.

The Singapore Marine Industry has seen significant growth over the last 40 years, evolving from a small regional ship repair and building center into a world-class industry that serves international clientele. The industry includes ship repair, shipbuilding, rig building and offshore engineering, and other marine supporting services.

Today, Singapore is one of the world's premier ship repair and ship conversion centers as well as a global leader in the building of jack-up rigs and the conversion of FPSO (Floating Production Storage and Offloading) units. It is also a niche player in the construction of customized and specialized vessels.

Source: From websites of Association of Singapore Marine Industries and Economic Development Board.

In addition to sound economic strategies, a country also needs systematic and recurrent reviews and reforms to enhance the relevance and effectiveness of such strategies, given the rapid changes in external economic circumstances and the continuing evolution of a country's endowment structure. The review of an economic strategy tends to be more robust when the country's economy faces challenges, as leaders can develop a deeper understanding about emerging economic trends and the forces behind them. On these occasions, the country also has a greater determination to undertake decisive changes and politically contentious restructuring efforts to foster economic competitiveness and transformation. Singapore provides a good example of such efforts. The government vigorously reviewed existing strategies when the economy was impacted by external shocks associated with major changes in the global and regional economic landscapes:

- 1985 (amidst economic recession): the Economic Committee was established to stimulate Singapore's economy and identify new directions for growth.
- 1991 (seizing momentum): after 25 years of rapid development, Singapore drafted the Strategic Economic Plan to formulate strategies and programmes for lifting the country to first league developed nation status within 30 to 40 years.
- 1997 (Asian financial crisis): the Committee on Singapore's Competitiveness (CSC) was formed to propose strategies for reviving the country's economy and strengthening its competitive position.
- 2001 (amidst the global downturn caused by the 2000 dotcom bust and the 9/11 terrorist attacks): the Economic Review Committee was established to address the downturn and shape the direction of Singapore's economy over the following 15 years.
- 2009 (the global financial crisis): the Economic Strategies Committee (ESC) was established with the mission to develop strategies for Singapore's economic growth in the new global environment.

4.3 Implementation

A sound economic strategy requires effective implementation to produce desirable outcomes. This requires strenuous efforts in building execution capacity, creating an enabling environment, and ensuring the availability of financial resources for strategic implementation. The process also needs an effective monitoring and evaluation mechanism to closely track progress and inform performance assessments for individual initiatives. This mechanism should be participatory, practical, and reflective, involving intensive learning and adaptation. With effective implementation of a sound economic development strategy, a country can more fully exploit its potential, enhance its resilience against external shocks, and rapidly upgrade its endowment structure.

Putting an economic strategy into a concerted course of action requires not only a strategic vision but also operational skills, not only long-term commitment but also quick responses to change, and not only careful deliberation of implementation measures but also effective management of performance. As such, a developing country lacking experience in such growth initiatives needs a highly competent organization to meet the demanding requirements of developmental effectiveness, particularly regarding the effective implementation of economic strategies.

Institutional initiatives that establish and support highly competent organizations dedicated to co-ordinate efforts for industrial diversification and upgrading, efficiency and productivity improvement, and export promotion, are critical to the success of a developing country's industrial policy implementation. The experiences of successful Asian economies during their 'miracle years' provided exemplary examples.⁷ For Japan, Ministry of Industry and Trade (MITI), Economic Planning Agency (EPA), and Ministry of Finance (MOF) are considered the key drivers of its economic miracle during 1950-90. In particular, MITI in robust consultation with business associations set up three clear criteria for selecting strategic industries: high-income elasticity, technological progress, and productivity growth. At the same time, EPA focused on monitoring the progress of structural change and productivity growth. Its analysis and policy deliberation help the government make more informed decisions in resource allocation.

South Korea established in the 1960s important vehicles for implementing industrial policy, which ranged from the Korea Institute of Science and Technology (KIST) to the Ministry of Science and Technology (MOST) to Export Promotion Conferences. The KIST was active in helping local firms adapt foreign technology, while MOST effectively co-ordinated national technology policies.

For Taiwan, the Ministry of Economic Affairs (MOEA) and its affiliated organizations such as Technology Advisory Committee (TAC) and the Industrial Technology Research Institute (ITRI) were behind Taiwan's concerted efforts to transform its industries from textiles and apparel, toys, and agriculture into machinery, petrochemicals, electrical equipment, and

⁷ It should be also important to point out the recent examples of the agencies/committee in charge of strategy implementation co-ordination in other Asian countries: Performance Management & Delivery Unit of Malaysia (in taking charge of implementing and monitoring the progress of the Economic Transformation Programme); the Committee on Economic Development Acceleration and Expansion of Indonesia (in charge of co-ordinating the implementation of the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development); the National Development and Reform Commission of China (for strategizing, co-ordinating, and monitoring economic reforms); and the National Steering Committee on ICT of Vietnam (for promoting ICT development).

electronics. In fact, ITRI was the major contributor to co-ordinating Taiwan's efforts to become a leading player in the semiconductor and computer industries.

For Singapore, the Economic Development Board (EDB), which has been considered as a major driver of Singapore's economic transformation offers valuable lessons for how a government agency can be a leading driver in implementing a strategy for economic growth and transformation. The lessons include the following:

1. A developing country should establish an organization dedicated to implementing the country's economic strategy. The organization should have its own clear and well-articulated operational strategy that details the implementation element of the country's economic strategy. The organization should also have business-like flexibility and a special mandate from the government for high effectiveness.
2. The government must take special care in appointing the head of this organization. This person must be well respected for his/her integrity, wisdom, and success in past management engagements. Moreover, this person, according to Schein (1996), must have the motivation and capability to bring out the best from his/her people.
3. The organization should recruit the brightest and best young people from all sectors and inspire them with a mission to help the country escape poverty and advance towards prosperity.
4. As a major link between the government and the business community, the organization must excel in the following five C-qualities: commitment, competence, credibility, communication, and co-ordination:
 - (i) Commitment is a strong sense of mission and high moral standards.
 - (ii) Competence is not only defined by high professional standards but also a clear mandate from government leaders and an enabling organizational structure.⁸
 - (iii) Credibility is a reputation for incorruptibility, honesty, and consistency.⁹
 - (iv) Communication must occur between the government and investors, and should be characterized by a high level of responsiveness, intensive consultation, and clarity of the organization's strategic intent.¹⁰
 - (v) Co-ordination embodies the close link between the organization and other government agencies, and the organization's ability to drive co-ordinated efforts among agencies in implementing the country's economic strategy.

4.4. Acquisition of knowledge

Acquiring knowledge is an essential tool for a developing country to enhance the effectiveness of its co-ordinated efforts throughout the course of development. Acquiring knowledge is not confined only to importing technology and know-how, but includes learning from international best practices. Furthermore, invaluable knowledge and wisdom can be derived from

⁸ Like other Singapore government agencies, the EDB used the HAIR framework (Helicopter quality, Analytical skills, Imagination, and Reality) for assessing the competence of its staff.

⁹ According to Schein (1996), the EDB impressed foreign investors by having clear rules and a commitment to keeping promises; they were determined to meet the needs of investors without compromising their own values and rules; they gained respect of investors for being efficient without being either expedient or corrupt.

¹⁰ Schein (1996) noted that 'the most salient characteristics of the EDB officers is their ability to communicate orally and in writing, think things out, articulate one's conclusions and sell them to others.'

experimentation, benchmarking against the best performers, and a commitment to continuous improvement.¹¹

The successful Asian countries have proven to be great learners, effectively exploiting their ‘backwardness’ advantage and leveraging their aspiration to catch-up.¹²

Japan

Seeking knowledge throughout the world to build a foundation for the country’s future was a guiding principle of the Meiji government, as set forth by the 1868 Charter Oath. In putting its strategies into action, the Meiji government dispatched a mission of 50 high-ranking officials to the United States and Europe for a 22-month journey (December 1871 to September 1873) focused on discovering models and lessons for modernization. Remarkably, those on the mission had their jobs available for them when they returned.

As pointed out by Jansen (2000: 360), the lessons drawn by the mission were clear and thoughtful:

Japan had entered a highly competitive world in which victory went to the educated and united. It should choose carefully from among the models before it. Initially American education, British industrialization, French jurisprudence, and German representational institutions held particular promise. It would have to modernize these institutions to establish its qualifications for release from the inequality defined by the unequal treaties, thus postponing immediate gratification for the sake of long-term gain.

The Meiji government was also proactive in acquiring knowledge through consultation with foreign experts. For example, Mori Arinori, a diplomat in Washington who later became the architect of the Meiji education system, invited leading American educators to submit their views about how Japan might best build its foundation for prosperity. In his 1873 reply, David Murray, who was a professor at Rutgers College in New Jersey, argued that Japan could be built into ‘an equally colossal commercial power’ in Asia, as England was to Europe. David Murray was then immediately invited to Japan as adviser to the new Ministry of Education (Jansen 2000: 357).

At the same time, Meiji leaders made laborious efforts to enhance the quality of their decisions concerning policy formulation and institution-building. Throughout this process, they vigorously embraced debate and reflected openly about alternative strategies and implementation efforts. The design of the Meiji state, as a result, was not rigidly established at the beginning but took shape throughout the state’s growth (Jansen 2000: 412).

Korea

Park’s government stressed the importance of mobilizing the wisdom and knowledge of scholars in formulating Korea’s economic development plans. The government used this approach in the preparation of its first Five-Year Economic Development Plan (1961-65), treating the approach

¹¹ See Yeung et al. (1999) provides a rich discussion on this topic.

¹² The concept of ‘backwardness’ advantage was first introduced by Gerschenkron (1962). It has been one of the major comparative advantages low-income countries must fully exploit to succeed on their catch-up endeavours (Lin 2003, 2009, 2012a, 2012b).

as a strategic means to enlighten economic development strategy and stimulate the engagement of the country's scholars in national development endeavours. Park noted:

...[w]e organized a planning committee of college professors and experts with specialized knowledge in many fields. By mobilizing the maximum available expertise for government administration and policy-making, we intended to hold in check the arbitrariness and rashness of the military officers. The establishment of this committee served as a turning point. Korean professors began to show positive interest in the realities of the country and to present policy recommendations on the basis of scientific analyses of the country's situation. (Park 1971: 107-108).

Park himself made relentless efforts to learn. He was 'open to new ideas and capable of transforming them into a detailed workable action programme,' and 'studied hard to learn about economic issues and to discover ways to bring about economic development' (Kim and Park 2011: 278). Park was described as a man 'busy studying Japan... he frequently took clippings from Japanese newspapers and read *The History of the Japanese Economy* until midnight. A great portion of Park's modernization policy emerged from the emulation of Japan. He compared South Korea's economic situation to that of Japan all the time.' (Moon and Jun 2011: 120).

Korea's export expansion meeting, organized and chaired by Park every month since 1965 for nearly 15 years, was evidence of the Park administration's efforts to enlighten its development strategy with knowledge from experts and lessons from practice. Participants from the governmental, industrial, and academic sectors engaged in vibrant discussions with a shared purpose to devise the best possible solutions. The decisions made during these meetings incorporated the comprehensive and diverse views of participants, and were given top priority (O 2009: 103-4).

Singapore

Robust acquisition of knowledge has been a prominent feature of Singapore's development strategy throughout the country's brief but remarkable history of economic transformation. As Lee Kuan Yew remarked:

When we started in 1959 we knew little knowledge about how to govern, or how to solve economic and social problems. [...] We learnt on the job and learnt quickly. If there was one formula for our success, it was that we were constantly studying how to make things work, or how to make them work better.

[...] I almost never made the same mistake twice, and I tried to learn from the mistakes others had made. I discovered early in office that there were few problems confronting me in government which other governments had not met and solved. So I made a practice of finding out who else had met the problem we faced, how they had tackled it and how successful they had been. Whenever it was to build a new airport or to change our teaching methods, I would send a team of officers to visit and study those countries that had done it well. I preferred to climb on the shoulders of others who had gone before us. (Lee 2000: 758-59)

Goh Keng Swee, the main architect of Singapore's economy, listed the capability to learn from others as a key ingredient of the country's success:

There is nothing new under the sun—whether it is setting up an MRT system, a gifted education programme, an air force, a container port or whatever... We do not

try to reinvent the wheel; we study how other people do it. We learn and adapt, not imitate without thinking.¹³

Benchmarking has also been a distinct feature of Singapore in its effort to promote economic development. For example, the EDB always ‘benchmarks against the very best, it commits to being world-class, and it borrows whatever is best’ (Schein 1996: viii).

China

China’s effort to acquire knowledge is also remarkable, especially regarding experimentation. According to Heilmann (2008: 3), policy experimentation is defined as ‘a purposeful and coordinated activity geared to producing novel policy options that are injected into official policymaking and then replicated on a larger scale, or even formally incorporated into national law.’ China’s policy experimentation has ranged from the establishment of special economic zones to the introduction of trial regulations. During the first two decades of China’s economic reforms, over 30 per cent of the government’s new regulations were conducted under experimental status (Heilmann 2008).

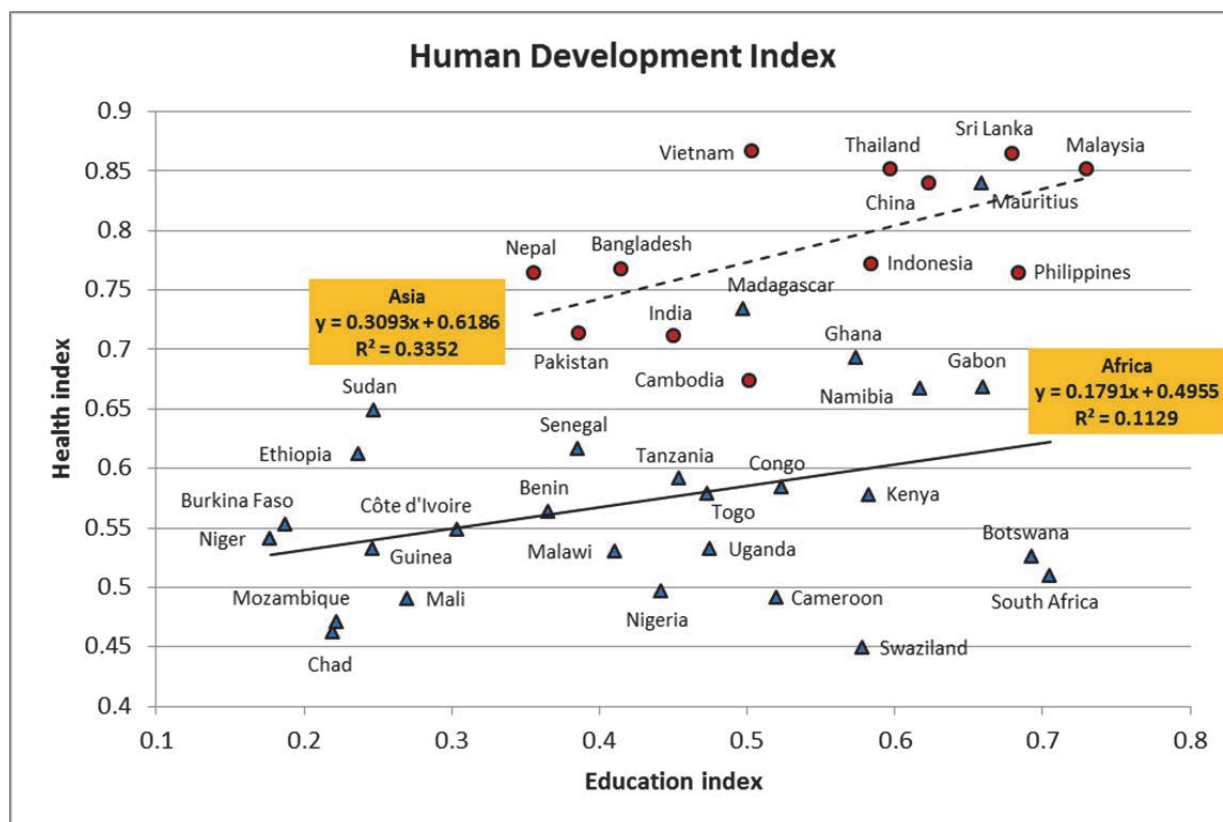
4.5 Nurturing human capital formation

As Lucas (1993) argues, ‘the main engine of growth is the accumulation of human capital—of knowledge—and the main source of differences in living standards among nations is differences in human capital.’ Human capital plays an important role in both enabling and driving the structural change of an economy. With availability of higher skilled labor, firms are enabled and even lured to move to higher value-added activity. Vibrant human capital formation also fosters innovation and learning, which helps firms to produce more output with fewer resources and to invest in upgraded production capacity. Nurturing human capital formation has historically been a major policy priority in successful Asian countries. Indeed, successful Asian countries have paid particularly close attention to human capital at the very beginnings of their development endeavours. Historical evidence is provided in Appendix 3.

To better understand the challenges facing the countries of SSA, particularly with regard to nurturing human capital formation, one examines their current levels of human capital development as compared to developing Asian countries (Figure 6). Two urgent issues are evident. First, it is urgent for countries with very low education levels, including Niger, Burkina Faso, Chad, Mozambique, and Ethiopia, to make major efforts in improving their basic education systems. Second, SSA countries should make a stronger commitment to health development. In general, SSA markedly underperforms developing Asia in the health development index. Moreover, the slope of this measure as a function of education is also flatter for SSA compared to developing Asia (the coefficient beta is 0.18 for SSA compared to 0.31 for developing Asia). This implies that SSA countries can do a better job of improving public health as they make progress on other aspects of human development such as education.

¹³ ‘Dr Goh’s recipe for our success’, *Strait Times*, 7 August 1984.

Figure 6: Human capital development in 2010: SSA vs. developing Asia



Source: UNDP (2012).

5 Conclusion

Lessons and insights from Asia's successful development experiences can be drawn through the lens of new structural economics, a theoretical proposition arguing that modern economic development is by nature a process of continuous structural transformation in technologies, industries, infrastructure, and socio-economic institutions. The experience of Asia demonstrates that developing countries have the potential to grow dynamically, significantly reduce poverty, and reach middle-income or even high-income status in the span of one to two generations, provided the country has an enabling state that can overcome the inherent constraints of inadequate infrastructure and unproductive business environments, and that can generate structural change in technology and industry. The aim of state co-ordination is to facilitate the private sector's maturation in industries that accord with the country's comparative advantages, turning those industries into the country's competitive advantages, and exploiting late-comer opportunities.

The successful development of Asian countries has been addressed in a variety of studies, including those by the World Bank and the Growth Commission. This paper extends this work in two ways. First, it explores how lessons from successful Asian countries can be applied to SSA countries, particularly with regard to strategic objectives, institutional reform, and human development. The paper shows that lessons learned from these Asian economies are meaningful and applicable for SSA countries. However, in order for these lessons to be actionable, the leaders of the SSA countries should more thoroughly understand the nature of economic growth and master a strategic policy framework.

Second, this paper proposes and applies a specific policy framework, demonstrating its value as a versatile and replicable tool. The principles of new structural economics and the five-component strategic framework—ASIAN, as introduced in this paper—serve this purpose. They provide an analytical tool useful not only for development efforts in other regions at varying stages of growth, but also for scholarly research about countries undertaking modernization and economic catch-up. The ASIAN framework’s focus on aspiration, strategy, implementation, acquisition of knowledge, and human capital formation are relevant in both contexts—applied and theoretical—and further operationalize new structural economics. This paper’s contribution aims at enriching development studies from a fresh perspective that addresses continuing transformational changes in information diffusion, the role of knowledge in development, and the impacts on both of a rapidly globalizing economy.

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Appendix 1: Vietnam's embrace of ICT for economic growth and catch-up¹⁴

The rapid penetration of ICT has generated unprecedented opportunities for Vietnam to make leapfrog advancements in upgrading its telecommunication system and expanding its technology production sector. Recognizing the potential of ICT-related opportunities to accelerate the country's economic development, Vietnam's leadership issued a resolution in October 2000 known as Directive No. 58, 'On Accelerating the Use and Development of Information Technology for Industrialization and Modernization.' The directive established a goal for Vietnam to reach 'advanced' IT status among regional peers by 2010, with the following three main objectives: (1) ICT shall be widely used across sectors and become one of the most important factors in promoting socio-economic development and ensuring national security; (2) The information network shall have full nation-wide coverage, with sizeable bandwidth, high speed and quality, and low user costs; internet penetration will reach the world's average rate; (3) The ICT industry shall become a spearhead economic sector with a leading growth rate and an increasing contribution to the country's economic growth.

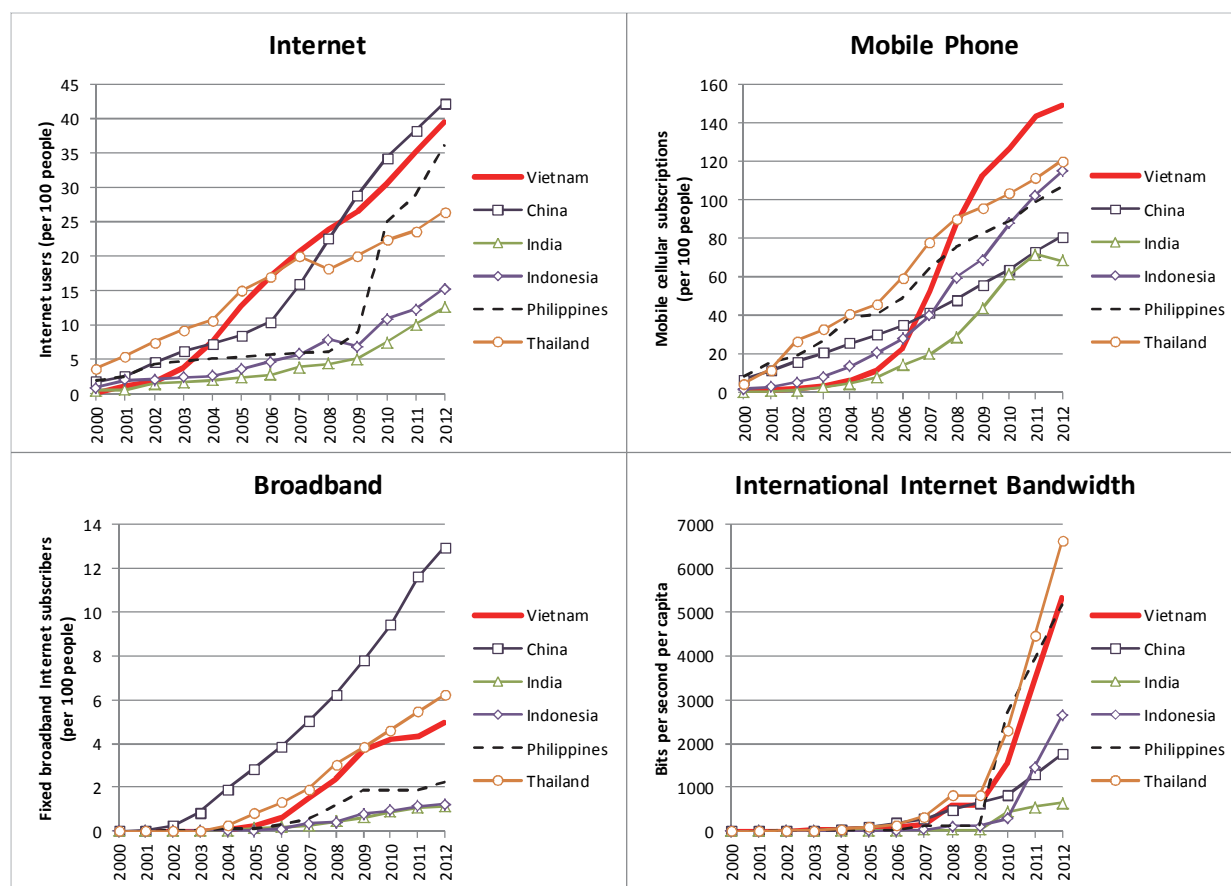
Vietnam's progress towards these strategic resolutions is considerable. The country's ICT diffusion rapidly expanded in the 2000s, with Vietnam soon surpassing many peer countries on penetration measures (Figure A1). The World Economic Forum's Global Information Technology Report (GITR) provides evidence of Vietnam's progress. The 2001-02 report ranked Vietnam at the bottom of the Networked Readiness Index, together with Ecuador, Honduras, Bangladesh, and Nigeria; according to the report, 'considering the poor service and limited bandwidth in these countries, it would take either an extremely devoted web-surfer or a very wealthy subscriber to spend much time online.' Since that time, Vietnam has doubled its international bandwidth each year, from 50 Megabits per second (Mbps) in 2000 to 640,000 Mbps in 2013. The GITR report for 2010-11 remarks 'Vietnam has made impressive strides [...] Vietnam and Venezuela were initially both ranked in the second-lowest decile, and now Vietnam ranks almost five deciles higher.' The report also recognizes the driving role of Vietnam's government in this progress: '...unlike most countries at a similar stage of development, government readiness (20th, up four) is the highest among the three main actors [government, business, and individual]. ICT development is one of the top priorities for the government (18th), which sees the sector as a key driver for national competitiveness (26th).'

Regarding the development of the ICT production sector, the country has made aggressive use of special incentive packages to attract FDI from major technology companies such as Intel, Samsung, Nokia, and Canon. As a result, Vietnam has quickly become a hub of global ICT manufacturing. The country's export of ICT hardware has soared by more than 20 times in less than ten years, from US\$1.5 billion in 2005 to US\$32 billion in 2013; exports are projected to continue this rapid growth in the next 3-5 years.

Vietnam has also become an attractive destination for IT outsourcing (ITO). According to the latest A.T. Kearney' survey (A.T. Kearney 2011), Vietnam's rank as an attractive destination for ITO has risen by 18 places, from 26th in 2005 to 8th in 2011. Additionally, the country's two major cities, Hanoi and Ho Chi Minh City, rank highly in the Tholons list of 100 destinations for IT outsourcing in 2014 (22nd for Hanoi and 17th for Ho Chi Minh City) (Tholons 2013).

¹⁴ Adapted from Vu and Austin (2014).

Figure A1: ICT penetration (Vietnam vs. peer countries)



Source: ITU (2014).

Appendix 2: Recent experiences of Singapore, Malaysia, and Indonesia in economic strategy formation

Singapore's formation of the 2009 economic strategy amidst the global economic crisis

Economic strategy is a prominent feature of Singapore's economic development. The country has habitually relied on a robust formulation process for new economic development strategies to guide development, particularly as the global economic landscape has evolved and the country's endowment structure has progressed. In 2009, amidst the worsening global financial crisis, the Economic Strategies Committee (ESC) was established with the mission to develop strategies for Singapore's growth in a new global environment. The ESC comprised eight sub-committees, each of which was co-chaired by a minister and a business leader, to conduct comprehensive studies of eight issues:

1. Seizing growth opportunities
2. Developing a vibrant SME landscape and globally competitive local enterprises
3. Attracting and rooting MNCs, Asian enterprises and global mid-sized companies
4. Growing knowledge capital
5. Making Singapore a leading global city
6. Fostering inclusive growth
7. Ensuring energy resilience and sustainable growth
8. Maximizing value from land as a scarce resource

The Committee has intensively consulted with companies, business chambers and associations, universities and think-tanks, unionists, professionals, entrepreneurs, and members of the public, reportedly involving more than 1,000 people. Completed in January 2010, the ESC report recommended seven economic strategies under three broad priorities:¹⁵

1. Boosting skills in every job
2. Deepening capabilities among Singapore companies to seize opportunities in Asia
3. Making Singapore a distinctive global city

The seven economic strategies under these three priorities include:

1. Growing through skills and innovation
2. Anchor Singapore as a Global-Asia hub
3. Build a vibrant and diverse corporate ecosystem
4. Make innovation pervasive, and strengthen commercialization of R&D
5. Become a smart energy economy
6. Enhance land productivity to secure future growth
7. Build a distinctive global city and an endearing home

Malaysia: The economic transformation programme¹⁶

Malaysia's Economic Transformation Programme (ETP), officially launched by Prime Minister Najib Razak in October 2010, serves as a broad strategy to transform Malaysia into a high-income developed nation by 2020. It aims to lift Malaysia's gross national income per capita to US\$15,000 in 2020, with a targeted average growth rate of 6 per cent per year from 2010 to 2020.

The strategy envisions four salient features of the Malaysian economy's transformation during the target period:

- The economy will undergo significant re-orientation towards a service-basis, resembling the structure of a typical developed nation.
- More than 3.3 million new jobs will be created by 2020, spread across the country in urban and rural areas. The nature of these new jobs will shift the national employment profile towards middle- and high-income salary brackets.
- Greater Kuala Lumpur/Klang Valley will be transformed into a world class city.
- Growth will be achieved in a sustainable manner through green development initiatives.

Focused on actions rather than ideas and theoretical principles, the ETP consists of two parts: 12 National Key Economic Areas (NKEAs) and six Strategic Reform Initiatives (SRIs). The 12 NKEAs were identified and developed by a public-private collaboration, with the joint effort including 500 representatives from the private sector (350 from 200 different companies) and the government (150 from 60 different public institutions, ministries, and agencies). These NKEAs represent sectors in which Malaysia holds globally competitive advantages, and have the potential to be key economic growth engines. They include the development of the Greater Kuala Lumpur/Klang Valley and 11 industries: oil, gas and energy; palm oil & rubber; financial services; tourism; business services; electrical and electronics; wholesale and retail; education;

¹⁵ ESC (2010).

¹⁶ The content of this section is derived from the website of the PEMADU. Available at: <http://etp.pemandu.gov.my/> (accessed 10 October 2012).

healthcare; communications content and infrastructure; and agriculture. The Greater Kuala Lumpur/Klang Valley was selected as an NKEA for two reasons. First, Kuala Lumpur currently accounts for roughly one third of Malaysia's GDP. Second, cities are significant drivers of growth, and a thriving Kuala Lumpur is vitally important to the health and performance of Malaysia's overall economy.

The portfolio of NKEA sectors will evolve over time, depending on the performance of various sectors in the economy. There will be a rigorous process to remove slow-growth sectors from the portfolio and to identify emerging drivers of growth to be added. The 12 NKEAs are focused on producing tangible outcomes through 131 Entry Point Projects (EPPs) and 60 Business Opportunities (BOs). Designation comes with prioritized public investment and special policy support. Additionally, each NKEA has a lead minister who assumes responsibility for ensuring smooth implementation and delivery.

Derived from the 51 policy measures recommended by the National Economic Advisory Council (NEAC) to enhance Malaysia's global competitiveness, the six SRIs represent cross-cutting policy reform initiatives with a particular focus on the 12 NKEAs. These include: competition, standards & liberalization; government's role in business; human capital development; public service delivery; narrowing disparities; and public finance reform. Each SRI has a lead minister or ministers who are responsible for the successful implementation of the initiatives. Key Performance Indicators (KPIs) have been included in their ministerial scorecards.

Indonesia: The master plan for acceleration and expansion 2011-25¹⁷

The Master Plan for Acceleration and Expansion 2011-25 (MP3EI), launched by the Government of Indonesia in May 2011, establishes a strategic framework to transform the country into an advanced economy by 2025. The MP3EI was developed with a vision for Indonesia to become an 'independent, developed, just, and prosperous' society. With the MP3EI, Indonesia aims to become the world's 10th largest economy by 2025, with GDP per capita increasing fivefold (US\$3,000 in 2011 to US\$15,000 in 2025).

The MPEI3 is a product of partnerships among central and local governments and other sectors of society. In particular, CEOs, experts, academics, and representatives from business associations provided inputs in various working group forums. The implementation of MP3EI, likewise a collaborative effort, will be co-ordinated by a committee chaired by the Indonesian president. This committee will be responsible for the co-ordination, monitoring, and evaluation of specific strategies and actions identified in the master plan.

Three main elements of the MP3EI:

(a) Promoting six economic corridors by establishing centers of development and industry clusters within each. The corridors are:

- The Sumatra Economic Corridor
- The Java Economic Corridor
- The Kalimantan Economic Corridor
- The Sulawesi Economic Corridor

¹⁷ The content from this section is derived from the Master Plan for Acceleration and Expansion of Indonesia's Economic Development 2011-2025, published by the Co-ordinating Ministry for Economic Affairs (2011).

- The Bali-Nusa Tenggara Economic Corridor
- The Papua-Kepulauan Maluku Economic Corridor

(b) Strengthening national connectivity for local and global integration. This includes the development of a robust connectivity system that supports the effective and efficient movement of goods, services, and information within the country and between the country and the rest of the world.

(c) Strengthening human resource capacity and national science and technology sectors to support the development of growth initiatives in each economic corridor.

The MP3EI identifies 22 leading economic activities as economic growth engines, which include: steel; food and beverages; textile; transportation equipment; shipping; nickel; copper; bauxite; palm oil; rubber; food agriculture; tourism; ICT; coal; oil and gas; defense equipment; animal husbandry; timber; cocoa; fishery. Each corridor will rely on a combination of these leading economic activities as a key growth engine. For example, the Java economic corridor includes six industries: food and beverages; textile; transportation equipment; shipping; ICT; and defense equipment.

Eight basic principles for the successful execution of the MP3EI

The MP3EI establishes eight principles for its successful execution, emphasizing a decisive shift in perspective and behaviour across sectors:

- Change must affect positively on all stakeholders of the nation
- Change in mindset starts from the Government and its bureaucracy
- Change requires the spirit of hard work and the strong desire to develop collaborations within a healthy competitive environment
- Productivity, innovation, and creativity, driven by science and technology
- Enhancing entrepreneurship
- Private sector has an important role in economic development
- A campaign to implement sustainable development principles
- A campaign for change in mindset to improve prosperity has to be carried out extensively by all stakeholders of the nation

Critical issues for the successful execution of MP3EI

- The role of government and business enterprises
- State financial policy reform
- Bureaucracy reform
- Connectivity between regions in Indonesia
- Food security, water, and energy policies
- Social security and poverty reduction

Appendix 3: Historical evidence for the attention of Asian leaders on human capital development

Japan

As a key statesman during the Meiji Restoration, Kido Takayoshi helped draft the Charter Oath and was a key member of the mission. He emphasized the importance of human capital formation in a nation's development:

Nothing has more urgency for us than schools. [...], unless we establish an unshakable national foundation we will not be able to elevate our country's prestige in a thousand years... Our people are no different from the Americans or Europeans of today; it is a matter of education or lack of education.¹⁸

South Korea

President Park Chung Hee believed that people were the driving force behind a nation's success. He argued that this force would be strengthened if people were competent, had a clear direction, and possessed a sympathetic understanding of their personal role in development. Upon taking power in 1961, he realized:

The key to improving a backward economy is the way one uses human resources [...] This task requires not only strong national willpower, but the ability to translate willpower into achievement. (Park 1971: 107)

Singapore

Goh Keng Swee, the main architect of Singapore's economic development, identified in a 1961 article the two fundamental conditions for people to play a central role in economic development: education and the opportunity for people to realize their potential. Regarding education, he noted:

General education is fundamental, and the percentage of literacy in a society is taken to be an index of its cultural level and general well-being. The state's attitude to compulsory schooling, the school-leaving age, free education, and facilities for higher education are important for sustaining long-term economic growth. Without well-educated population, no state can possibly develop its economic resources to the fullest. (Goh 1995: 48)

¹⁸ Cited in Jansen (2000: 356)