



CHAPTER 4

Perspectives on Growth: A Political-Economy Framework— Lessons from the Singapore Experience

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Until the 1970s, traditional neoclassical growth models emphasized differences in factor accumulation to explain differences in income per capita across countries. These models found factors such as saving rates (Solow 1956), preferences (Cass 1965; Koopmans 1965), or other exogenous parameters, such as total factor productivity growth, to be important. More recent strands of growth theory, following Romer (1986) and Lucas (1988), are similar in this approach but endogenize steady-state growth and technical progress.

Throughout the 1990s, it became increasingly evident that factor accumulation alone was insufficient for sustained growth. The growth experience of many countries in the 1990s and numerous extensive cross-country regressions provided evidence that good policies and sound

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institutions play an equally, if not more, important role in building and sustaining the momentum for growth. Although a consensus has yet to be reached on the impact that policies and institutions have on growth, a far greater amount of attention has been paid in an attempt to understand their roles in the growth story.

This chapter attempts to match a country's growth performance to a set of qualitative variables, with particular emphasis on political-economy variables covering institutions and geography. This discussion draws extensively on data from Penn World Table 6.2 (PWT6.2; Heston, Summers, and Aten 2006) to create a comparable database of growth performance for countries across the time period 1960 to 2003. Appendix 1 elaborates on the methodology used to sample PWT6.2.

The Global Growth Experience since 1960

An examination of the data dating back to 1960 brings forward interesting observations on the global growth experience. Notably, the median chain-weighted purchasing power parity (PPP)-adjusted per capita gross domestic product (GDP; henceforth real per capita GDP) of countries has increased steadily over the years, rising from \$2,463 in 1960 to \$6,025 in 2003 (figure 4.1a). The income gap between countries has also widened considerably, especially over the last decade or so. This can be seen from the increased income range, which was measured as the difference between the real per capita GDP of the wealthiest and poorest country (figure 4.1b). What this clearly shows is that the growth process over the last 43 years has benefited some countries more than others, and that this differential has persisted, contrary to theoretical predictions of (absolute) growth convergence models.

Following Durlauf, Johnson, and Temple (2005), this discussion next examines the global distribution of income at 10-year intervals from 1960 to

Figure 4.1a. Real per Capita GDP (1960–2000)

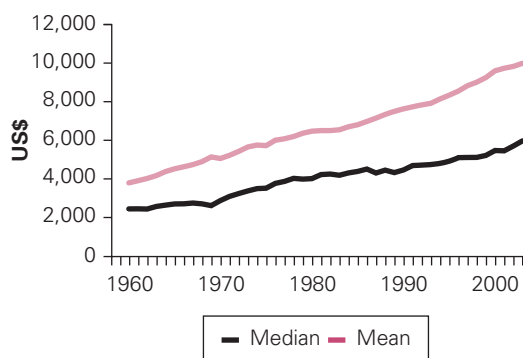
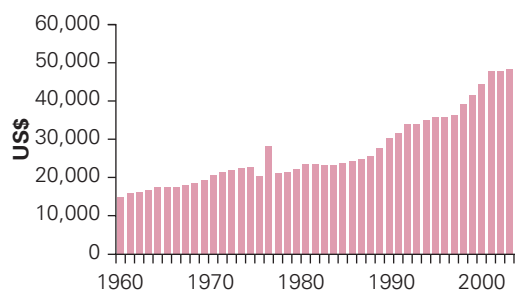


Figure 4.1b. Range of Real per Capita GDP (1960–2000)



Sources: Heston, Summers, and Aten 2006; authors' calculations.

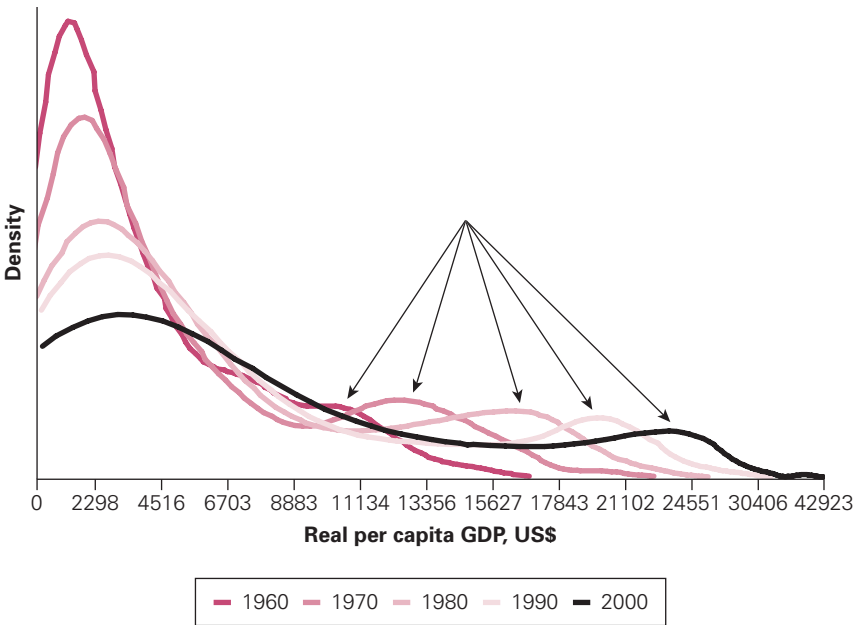
Note: Data are denominated in international PPP-dollars. This is equivalent to the purchasing power of a U.S. dollar in a given year.

2000 using kernel density plots. Figure 4.2 shows the estimated distribution functions for GDP per capita growth across countries, with the rightward shift reflecting the growth that has taken place since 1960. Noticeably, the distribution has become more “normal” (less peaked), suggesting a broadening of growth to more countries over the years. Nonetheless, the rightward shift of the “second peak” in the distribution across the time period corroborates our earlier observation that the income gap across countries has increased over time.

Figure 4.3 provides yet another perspective by showing the distribution of real per capita GDP relative to the benchmark, which here is taken to be the country with the highest real per capita GDP at each period. The rightward shift and normalizing of the distributions over the period 1970–90 suggests that growth had indeed broadened to many countries, even when compared against the benchmark that proxies for the economic “possibility frontier.” However, perhaps because of the series of shocks in the late 1990s, the distribution in 2000 has reverted back to the distribution in 1960, albeit with a more pronounced “second peak.” In other words, most countries have actually become worse off relative to the wealthiest country in 2000, with the emergence of a middle-income group of countries following the recent bout of shocks to the global economy.

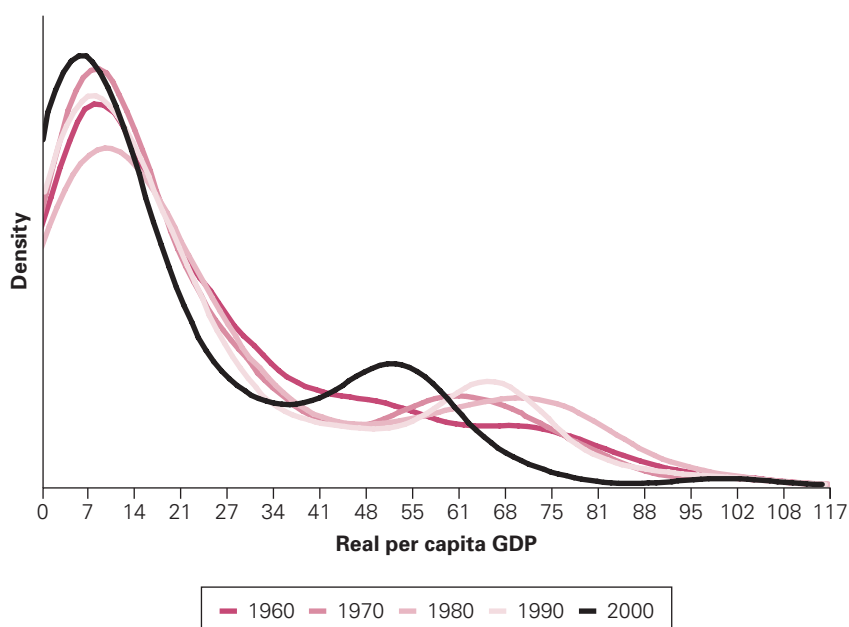
The evolution of the distribution of global income reflects widely divergent growth performances over the years. To identify the countries that have done exceptionally well and those that have performed badly, the countries have been ranked by their compounded annual growth rates

Figure 4.2. Kernel Density Plot of Global Income Distribution (in international dollars)



Source: Authors’ estimates.

Figure 4.3. Kernel Density Plot of Global Income Distribution (relative to benchmark country)



Source: Authors' estimates.

(CAGR) of real per capita GDP over the period 1960–2003, and then the 10 best and 10 worst performers selected. For completeness, the average year-on-year (YOY) changes and the coefficient of variation¹ over the period are also shown (see tables 4.1 and 4.2).

¹ The coefficient of variation is measured as the dispersion of YOY growth around the mean.

Table 4.1. Ten Growth Successes, 1960–2003 (real per capita GDP)

Growth Successes	CAGR %	Average YOY%	Coefficient of Variation
Taiwan, China	6.29	6.34	0.50
Botswana	6.03	6.20	0.99
Korea, Rep. of	6.02	6.05	0.69
Equatorial Guinea	5.96	8.18	3.07
China	5.75	5.92	0.97
Hong Kong, China	5.05	5.17	0.96
Thailand	4.58	4.65	0.81
Malaysia	4.54	4.60	0.78
Singapore	4.41	4.52	1.04
Cyprus	4.34	4.57	1.50
Average (growth successes)	5.29	5.62	1.13
World average	1.65	2.08	3.14

Source: Authors' estimates.

Note: Coefficient of variation is computed as the ratio of standard deviation of YOY percentage growth to average YOY percent growth across economies from 1960 to 2003.

Table 4.2. Ten Growth Laggards, 1960–2003 (real per capita GDP)

Growth Laggards	CAGR %	Average YOY%	Coefficient of Variation
Congo, Dem. Rep. of	-3.47	-3.07	-2.98
Sierra Leone	-1.86	-1.72	-3.11
Madagascar	-1.19	-1.12	-3.24
Niger	-0.78	-0.57	-11.40
Central African Republic	-0.74	-0.55	-11.37
Nicaragua	-0.61	-0.46	-11.87
Chad	-0.59	-0.25	-33.53
Senegal	-0.54	-0.43	-11.33
Jordan	-0.24	-0.01	-491.07
Guinea	-0.14	-0.05	-80.23
Average (growth laggards)	-1.02	-0.82	-66.01
World average	1.65	2.08	3.14

Source: Authors' estimates.

Note: Coefficient of variation is computed as the ratio of standard deviation of YOY percentage growth to average YOY percentage growth across countries from 1960 to 2003.

Growth Successes and Laggards

Of the 10 growth success stories, seven have come from Asia (East and Southeast Asia), and sub-Saharan African economies dominate the list of growth laggards. The success stories' record is particularly impressive, with each one attaining growth rates nearly three times that of the world average. Landlocked Botswana, with a population of only slightly over 1.6 million, is one of two African countries in the list of top performers. Not only have the top performing countries grown at a significantly faster pace than the growth laggards, they have also done so with far greater consistency, as seen from their markedly lower coefficients of variation. Again, the Asian economies and Botswana stand out, with coefficients of variation lower than the average of that for growth successes. In contrast, growth is far more volatile in the growth laggard countries and in Equatorial Guinea. The latter, for example, has seen fast but volatile growth, its fortunes rising with the discovery of crude oil, which forms the bulk of its export earnings.²

If asked in 1980 which countries would do well in the next 20 years, an observer would almost certainly have, with the benefit of hindsight, fallen into the trap of identifying future winners by extrapolating past growth trends in 1960–80. Countries such as Ecuador or Paraguay, which enjoyed strong growth over 1960–80, might have been identified only to find them falling into a deep recession in the subsequent years. Table 4.3 lists the economies in

2 See United Nations (2005). Between 2002 and 2003, Equatorial Guinea exported \$1.2 billion worth of crude petroleum, equivalent to 89.7 percent of total exports. Exports increased rapidly after the discovery of crude oil in the 1990s, rising to \$1.3 billion between 2002 and 2003. In contrast, the economy's exports totaled \$26.1 million between 1982 and 1983, when Equatorial Guinea exported no crude oil (data for 1982–83 from United Nations 1986).

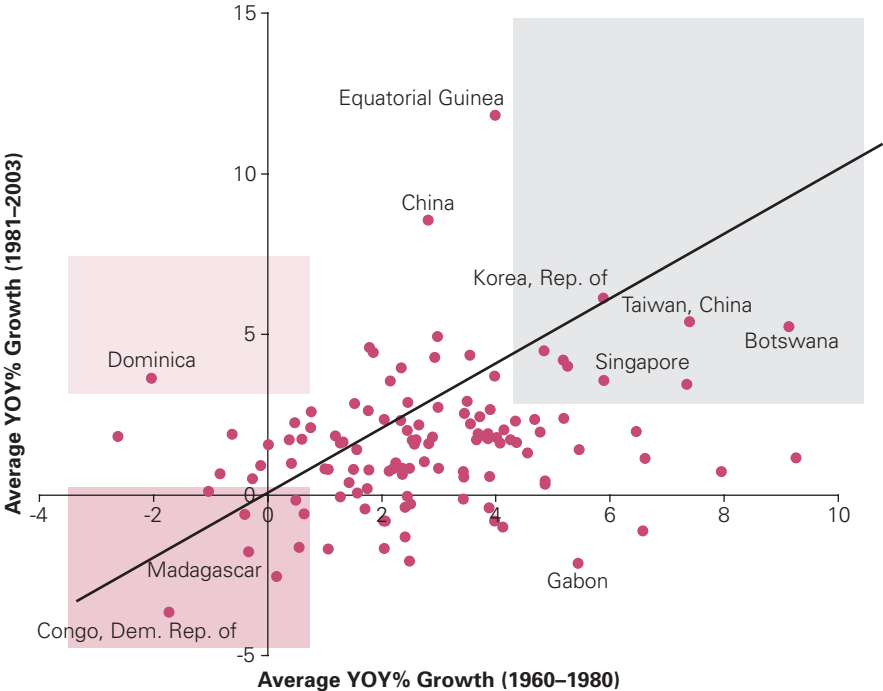
Table 4.3. Average Growth (YOY %) over 1960–80 and 1981–2003

	G2 ≤ 0	0 < G2 ≤ 1.5	1.5 < G2 ≤ 3	G2 > 3
G1 ≤ 0	Central African Republic Congo, Dem. Rep. of Madagascar	Guinea Namibia Nigeria Senegal Togo	Chad Mali Uganda	Dominica São Tomé and Príncipe
0 < G1 ≤ 1.5	Bolivia Jordan Kenya Nicaragua Niger Sierra Leone	Benin Cameroon Gambia, The Jamaica	Algeria Bangladesh Burkina Faso Ethiopia Guinea-Bissau Nepal New Zealand Rwanda Tanzania	
1.5 < G1 ≤ 3	Burundi Comoros Côte d'Ivoire Guatemala Peru Venezuela, R. B. de Zambia Zimbabwe	Argentina Colombia Costa Rica El Salvador Honduras Iran, Islamic Rep. of Madagascar Mozambique Philippines South Africa Switzerland Uruguay	Australia Canada Chile Denmark Egypt, Arab Rep. of Germany Netherlands St. Lucia Sweden Turkey United Kingdom United States	Cape Verde China India Luxembourg Mauritius St. Kitts and Nevis St. Vincent
G1 > 3	Congo, Rep. of Ecuador Gabon Haiti Paraguay	Barbados Brazil Fiji Ghana Greece Mexico Morocco Papua New Guinea Romania Syrian Arab Rep.	Austria Belgium Dominican Republic Finland France Grenada Hungary Iceland Indonesia Israel Italy Japan Lesotho Norway Pakistan Panama Poland Portugal Spain Trinidad and Tobago Tunisia	Botswana Cyprus Equatorial Guinea Hong Kong, China Ireland Korea, Rep. of Malaysia Maldives Singapore Sri Lanka Taiwan, China Thailand

Source: Authors' estimates.

Note: Only economies with 10 or more observations in both periods are included.

Figure 4.4. Scatter Plot of Average Growth (YOY %), 1960–80 against 1981–2003



Source: Authors’ estimates.

Note: Economies in the upper-right (gray) area were the consistently high performers that achieved 80th percentile growth rate (or greater) in both periods. Economies in the lower-left (dark pink) area were the consistent underperformers that achieved 20th percentile growth rate (or lower) in both periods. Economies in the upper-left (light pink) area were the late achievers that registered 20th percentile growth rates in G1 but 80th percentile growth rates in G2.

various categories, classified by their average YOY growth rates of real per capita GDP in 1960–80 (G1) and in 1981–2003 (G2).

Clearly, past growth does not necessarily translate to future growth, although resources and institutions inherited from past growth do appear to feed into an economy’s endowment in the next cycle. For example, it appears that economies that do not do well in G1 tend not to do as well in G2, with Dominica and São Tomé and Príncipe being the most notable exceptions. In comparison, economies that did well in G1 have by and large managed to maintain positive, albeit lower, growth in G2, as figure 4.4 illustrates.

Divergence in Growth Experiences

To attain finer granularity, it has been found to be useful to group the economies into three income bands: the top 50th percentile, the second quartile (the 25th to 50th percentile range), and those in the bottom quartile, according to their levels of real per capita GDP at five-year intervals over the period 1960–2003. Then the economies were classified into three broad categories based on their income trajectories:

1. *Advancers*—Economies that rose from one income band into a higher one for three consecutive observations or more, without slipping back to their original band. This would include an economy rising from the bottom quartile into the second, or one rising into the top 50th percentile from the income bands below.
2. *Average Performers*—Economies that remained in the income band between the bottom quartile and the 50th percentile.
3. *Underperformers*—Economies that fell from an income band into the ones below for three consecutive observations or more. This would include an economy regressing into the lowest quartile from the second, or one falling from the top 50th percentile into the income bands below.

By grouping these economies this way, those that have been ranked consistently above the 50th percentile (“developed” economies) have effectively been filtered out, as well as those that have persistently remained below the 25th percentile (“developing” economies). This leaves a set of 42 “developing” economies, categorized in the three groups according to table 4.4.

As is to be expected, a strong mapping of economies is seen from table 4.4 across to table 4.3, because the growth performance of economies over the years would directly impact their ranking within the band. The underperformers in table 4.4 are clustered around the top left-hand cells of table 4.3, whereas most advancers in table 4.4 are found in the bottom right-hand cells of table 4.3. Notably, most of the advancers have already moved into the top 50th percentile; the only exceptions are China (47th percentile), Sri Lanka (39th percentile), Indonesia (38th percentile), and India (32nd percentile). Given their growth momentum, it would not be surprising for China and India to rise into the top band within the next decade or so.

Table 4.4. Categorization of Economies Based on Income Trajectories

Advancers	Average Performers	Underperformers
Botswana	Bolivia	El Salvador
China	Cameroon	Fiji
Dominican Republic	Cape Verde	Guatemala
India	Comoros	Jamaica
Korea, Rep. of	Côte d’Ivoire	Jordan
Malaysia	Ecuador	Madagascar
Pakistan	Egypt, Arab Rep. of	Namibia
Romania	Grenada	Nicaragua
Sri Lanka	Guinea	Paraguay
St. Lucia	Haiti	Peru
St. Vincent	Honduras	Senegal
Taiwan, China	Indonesia	
Thailand	Morocco	
	Papua New Guinea	
	Philippines	
	Syrian Arab Rep.	
	Turkey	
	Zimbabwe	

Source: The economies are drawn from a sample of 118 from Heston, Summers, and Aten 2006.

Nearly all the growth advancers listed in table 4.4 also appear in our list of growth successes compiled in table 4.1. Hong Kong, China, and Singapore are two of the most glaring growth successes omitted from the advancers category. This is an artifact following the transition to PWT6.2 from PWT6.1. PWT6.2 omits data for 12 countries in 1960 as compared to PWT6.1. With seven out of 12 of these countries previously having higher incomes than Singapore, their omission under PWT6.2 boosts Singapore's relative ranking above the sample's 50th percentile. Hong Kong, China's classification reflects similar factors in the transition. Consequently, where both economies in 1960 were marginally below the 50th percentile under PWT6.1, they are now above the 50th percentile under PWT6.2. Having consistently remained above the 50th percentile throughout the sample period, they do not fit our definition of growth advancers and are thus not reflected in table 4.4.

A Conceptual Political-Economy Framework

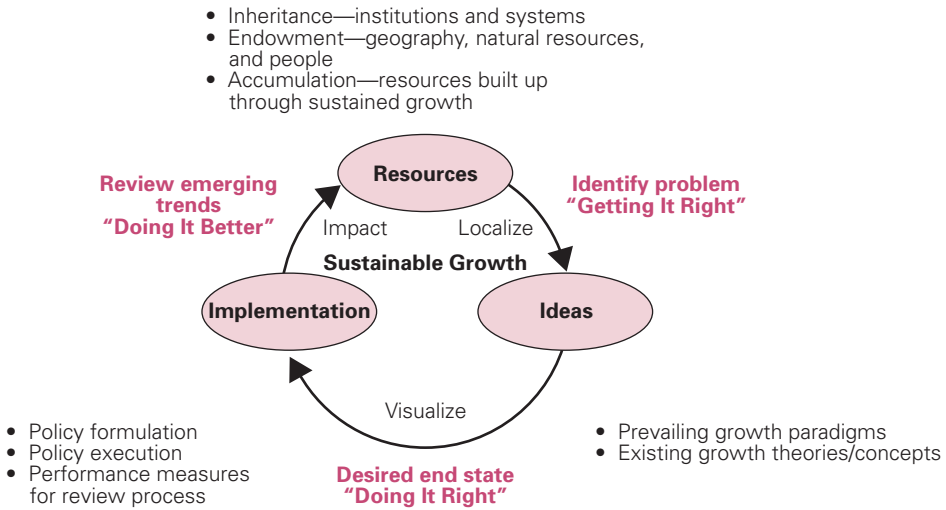
The previous section documented the widely divergent trends in the global growth experience. In line with the evolution of growth and development economics, thinking about economic growth processes might be best done via an empirical, a posteriori framework induced from actual growth experiences. Singapore has seen strong economic performance over the last four decades since gaining independence as a sovereign state, and the conceptual framework that follows draws on insights from Senior Minister Goh Chok Tong, who served as prime minister of Singapore from 1990 to 2004. This framework of analysis will identify “necessary conditions of growth” under a few broad categories and will be applied in the analysis of the sample of countries in table 4.4. This will allow us to identify and highlight commonalities for each category of countries.

The three pillars in this conceptual framework (see figure 4.5) are as follows:

1. *Resources, which take the form of the following:*

- a) Natural endowment, or a country's geographical positioning, its land area, its natural resources, and its people. For example, Singapore's only natural resource was its superior geographical location and a natural deep sea harbor, which made it an ideal trading post for the British en route to China and India. The British experiment in growing agricultural crops floundered because Singapore's soil proved unsuitable. This contrasts with neighboring Malaysia, where rubber was successfully cultivated. Malaysia also had ample tin reserves and was once the world's largest producer of tin.
- b) Inheritance, or the institutions of bureaucracy and government, and the political and legal systems in a country. These are artifacts of history, handed down from previous generations, whether through monarchic rule or the outcome of revolutions and colonialism.

Figure 4.5. The Economic Growth Cycle



Institutions	Leadership	People
<ul style="list-style-type: none"> • Effective administration • Independent judiciary • Responsible press • Vibrant private sector • Effective civil service • Responsible legislature • Good governance 	<ul style="list-style-type: none"> • Selflessly devoted to national interests and not pursuit of party/individual interests • Visionary, competent, and diligent • Integrity, honesty, and incorruptibility • Able to mobilize people • Work through politics of convergence not divergence • Good leadership does not preempt a particular political system 	<ul style="list-style-type: none"> • Common purpose and destiny • Supportive of leadership and government • Social cohesion among different groups • Entrenched stake in country

Source: Authors.

c) Accumulation, or the cyclical process that affects an economy’s stock of resources. Economic growth, changes in government, or natural disasters all affect a country’s stock of endowed or inherited resources. Resources accumulated from successful growth will feed into a country’s inheritance in the next cycle, whereas shocks may deplete a country’s endowment or destroy its inherited resources.

Resource availability will condition the growth paradigms that can be usefully applied to any economy. However, some caveats are necessary. First, the initial resource endowment of a country is not necessarily reflective of its future developmental potential. Although natural endowments may be less susceptible to change, inherited resources can change, and sometimes fairly quickly. Countries are thus, at times, able to make up for a shortfall in natural endowments by building on their inherited resources, such as reforming their institutions. When robust institutions are in place, they become valuable inherited resources that reduce the constraints on future growth. Similarly, countries with rich natural endowments could have very poor inherited resources, and losses on the latter may outweigh gains arising from the former. Second, being resource rich reduces the

constraints to economic activity but does not create growth per se. The pragmatic assessment of growth paradigms, alongside an economy's resources and constraints, will enable the creation of good, tailored policies to boost growth, with more options available to economies that are richer in resources.

2. *Ideas, or the prevailing growth paradigms/concepts of the day.* Ideas cover a wide spectrum ranging from desired outcomes (such as growth as economic progress or a broader definition to include measures of well-being) and desired paths (such as Marxist dialectic or capital accumulation) to requisite preconditions (such as trade liberalization or quality of institutions). Ideas are fluid and varied, and there is thus no single yellow brick road to prosperity. A paradigm that is fashionable in one decade falls out of favor in the next, and may yet be resurrected in a third.

Experience has also demonstrated that a wholesale application of ideas to an economy is no recipe for growth. The idea needs to be applied to its local context. A pragmatic assessment of the resources, constraints, and other structural peculiarities associated with the domestic economy is thus necessary for any growth practitioner seeking to understand how certain growth paradigms may actually work out in an economy.

3. *Implementation or formulating the right policies and effectively executing them.* The review channel then allows for feedback as to whether policies were correctly crafted and well implemented. Policy makers must constantly review the policy phase using appropriate performance indicators to determine (a) whether the idea has worked in the local context, (b) whether and how implementation and formulation could be improved, or more fundamentally, (c) whether one should rethink the original growth paradigm in light of possible changes in the operating environment.

Policy review is important, because sustained growth is often the result of persistent fine-tuning of policies. The discipline accorded by financial markets can sometimes be a useful yardstick for policy review, where international market response is positive. For example, this could manifest through foreign investors' willingness to invest or the successful export of a country's output; efforts can then be directed to refining policies along this track.

In a setup in which institutions are meant to enhance, not undermine, each other, and in which politics is convergent and not divergent, this review process, through honest self-reflection against clearly defined benchmarks, provides necessary checks and balances.

The successful implementation of policies depends, among other things, on the following:

1. *Robust institutions.* These include an effective administration and civil service, responsible legislature, independent judiciary, a vibrant private sector, and a responsible press. The underlying value entrenching these institutions is a commitment to good governance, which ensures that a

country's institutions remain effective and impartial, are devoted to the formulation and implementation of pragmatic and focused growth policies, and are not distracted by motives for self-enrichment or extraction of a country's resources and assets. These institutions are also responsible and serve to enhance, not undermine, each other's operations.

2. *Good leadership.* Such leaders are visionary and diligent, selflessly devoted to national, not party or individual, interests. For credibility, leaders must have integrity, be incorruptible (or have the incentives to remain so), and be honest. These leaders contribute to successful policy implementation by their ability to envision the road ahead, to mobilize the people, and to build consensus for their policies through a politics of convergence, not divergence.
3. *People consensus.* Sustained growth often requires trading short-term pain for long-term gain. The end point of growth and development—the well-being of a nation's people—will thus be meaningful only to a people united on the purpose and destiny of their country and who have an entrenched stake in the country. Policies that purport to bring about this end must have the consensus of the population; the people can then be supportive of the leadership and government, even when sacrifices are called for. Social cohesion is key: growth policies should not be divisive or benefit one group to the detriment of another, in line with the politics of convergence practiced by the government. In the absence of people consensus, social strife or political instability may render unfruitful even the most determined efforts to implement growth policies.

The three key elements of robust institutions, good leaders, and people consensus—the “horizontal”—interact with each other and have critical roles to play at each stage of the development path, from the inception of ideas, to efficient use of resources, to formulation of growth policies and their implementation and review.

Resources, ideas, and implementation form a self-reinforcing growth cycle. Policy makers who are able to accurately pin down the interactions between the three could thus generate sustained growth, which in turn boosts a country's resources, strengthens its institutions, and bolsters popular support for its leaders. Yet these same dynamics could be reinforced in a negative spiral, where the foundations for growth are repeatedly undermined. This makes poor growth outcomes more likely.

Singapore's experience may be rather unique, given its circumstances. The country's small size allows policy to be highly targeted and makes policy execution, coordination, and implementation somewhat easier. Yet, as the framework above illustrates, its development experience can have wider application for analyzing and promoting the growth of a small region, if not of a bigger country. Singapore has learned that resources and ideas are only necessary conditions, which are in and of themselves not sufficient to ensure sustained growth. Holistic implementation is key: there is no point in having first-class strategies and policies with third-class execution.

Singapore's Development Experience

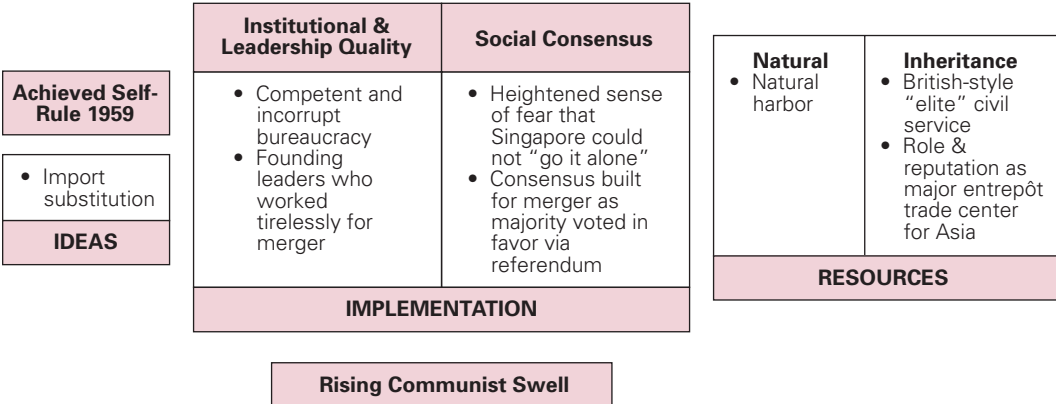
The conceptual political-economy framework in the previous section was induced a posteriori from Singapore's own development experience. Singapore has grown 4.4 percent per year on a compounded annual basis over the last 40 years. Real per capita GDP has risen sharply, reaching \$29,404 in 2003 from \$4,219 in 1960. This is no coincidence: although Singapore lacked natural resources and had only its geography by way of natural endowment, it also inherited British-style institutions such as a civil service, which were built upon. Singapore's leaders adopted policies that entrenched Singaporeans' stake in the country and strove to bridge ethnic divisions with a shared vision of prosperity for all citizens.

The rest of this section applies the framework to interpret Singapore's history, examining five distinct phases in its development. Each phase starts with the laying out of the domestic and external economic contexts for that period before discussing the factors that underpin growth—resources, institutions, leadership, and social consensus—in turn.

First Phase: Import Substitution and Merger with Malaysia (1959–65) (Figure 4.6)

Newly independent, Singapore found itself saddled with a poorly educated population suffering from severe poverty and chronic unemployment. The country had little by way of resources, aside from its natural harbor and its reputation and role as a major entrepôt trade center for Asia. However, it had inherited the British legal system with entrenched rule of law, as well as a bureaucracy operating on the principles of meritocracy and incorruptibility. The country faced a challenging operating environment: Singapore's traditional economic activities—entrepôt trade and related supporting services and processing industries—were declining as direct trade routes between Southeast Asia and developed world markets opened up. A rising communist swell played on interracial tensions and

Figure 4.6. First Phase—Import Substitution and Merger with Malaysia (1959–65)



threatened institutional stability. The business environment deteriorated as a consequence.

Neocolonial ideas of growth were percolating in the developing world, and chief among these was the import substitution paradigm. Similarly influenced, Singapore's social democratic government looked to create its own industrial base through import substitution. In adopting this paradigm, the country's leaders were aware that Singapore lacked natural resources, a sufficiently large domestic market, and a skilled workforce. They thus looked toward a common market with Malaysia that would be far larger than the country's small population of two million people. In addition, the government drew up a host of complementing policies such as tariffs on imports and a five-year education plan to boost math, science, and technical skills to support industrial development.

Implementing import substitution required building up existing institutions, as well as vigorous efforts by Singapore's leaders to drive the merger with Malaysia. The government created a scholarship system, which channeled its best and brightest into the civil service. The country's leaders led by Prime Minister Lee Kuan Yew were pragmatic and understood that industrialization would not happen simply because of a single policy decision, but would require a host of supporting measures. Social support for the merger was also strong, heightened by a sense of fear that Singapore could not "go it alone."

A majority of the people voted for a merger via popular referendum. Nonetheless, the economic opportunities that Singapore had expected from the merger with Malaysia failed to materialize, and indeed, the introduction of an additional layer of bureaucracy from Kuala Lumpur did not help the investment climate. Growth was erratic—after a recession in 1959, GDP growth rebounded but was highly volatile, ranging from 4 percent to 14 percent in alternate years.³

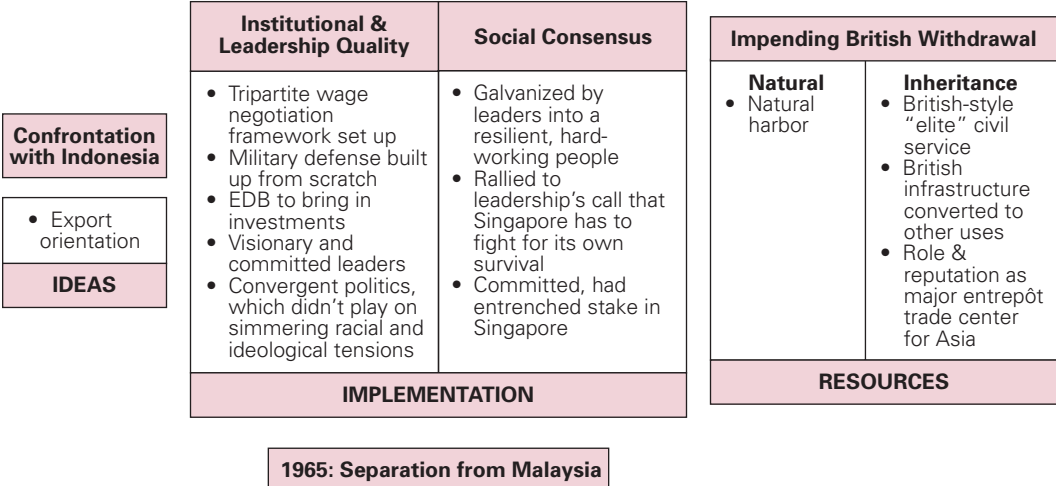
Second Phase: From Import Substitution to Export-Oriented Growth (1966–73) (Figure 4.7)

Singapore's brief union with Malaysia ended in 1965. With separation, the common market could not be realized, rendering import substitution unviable. The urgent need to create jobs in the economy was heightened with the impending closure of the British military base on the island, which would affect up to 70,000 jobs and bring a fifth of economic activity to a halt.

Industrialization could succeed only if Singapore tapped external markets that it had no privileged access to. Export orientation thus became the logical choice of growth paradigm, because firms could manufacture goods and create jobs for a market far larger than what domestic consumption alone could sustain. To this end, the government abolished tariffs, reduced import quotas, and passed a host of supporting policies, such as the 1967 Economic Expansion Incentives Act, which sharply reduced corporate tax

³ Based on GDP levels in pound sterling (Lee 1974).

Figure 4.7. Second Phase—From Import Substitution to Export-Oriented Growth (1966–73)



rates on exporting manufacturers. Singapore’s efforts to bring in foreign investments were holistic in that they recognized the importance of ensuring harmonious industrial relations. The tripartite wage negotiation system was established to provide stability in the wage bargaining process and to deter labor militancy.

The institutional base for a fully sovereign state had already been laid, and the government continued to build up the capabilities of its bureaucracy. To implement its external-oriented growth policies, new statutory boards, such as the Economic Development Board (EDB), were created. Singapore’s founding leaders eschewed potentially divergent politics that threatened to divide people along racial and ideological lines and dealt fairly with rising communal tensions. They also built up the country’s defense capabilities to boost security and, in turn, Singaporeans’ confidence in the country’s future. Under the leadership’s guidance, the population was galvanized into a resilient and hard-working people, determined to fight for their survival. They rallied to the leadership’s reminder that “The world does not owe us a living. We cannot live by the begging bowl” (Lee 2000). Over time, the people thus developed a commitment to Singapore as an independent country in which they had a stake.⁴ Policies such as the government housing programs helped to further entrench this commitment.⁵

Export orientation took off in this phase, and the economy was able to generate sustained growth. The EDB successfully attracted several multinational corporations (MNCs) to invest in the country, including National Semiconductor, Fairchild, Texas Instruments, and Hewlett-Packard. These firms helped to lay the foundations for the development

4 Chua (2006) details the process of nation building and the government policies that helped entrench Singaporeans’ sense of belonging.

5 Home ownership became a major tenet in Singapore’s nation-building program. In 1968 Singaporeans were allowed to use their savings with the Central Provident Fund (CPF) to purchase public housing. The CPF was a compulsory savings program first established in 1955.

of Singapore’s electronics cluster. Policies were recalibrated and fine-tuned along the way.

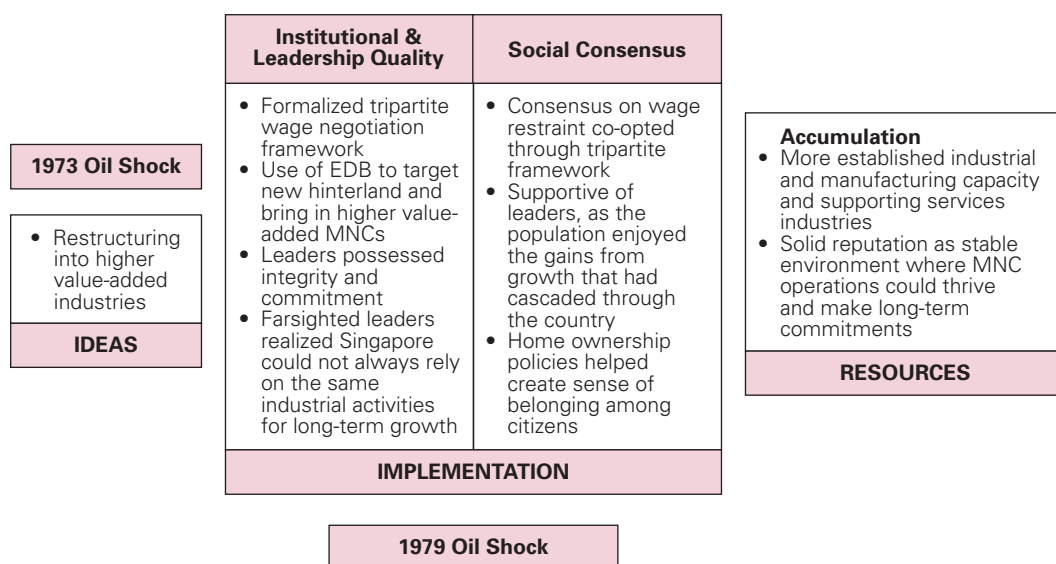
Third Phase: Industrial Restructuring (1973–84)
(Figure 4.8)

By the 1970s and early 1980s, Singapore had established a substantial manufacturing base and capacity in terms of both infrastructure and skilled labor. It had a solid reputation as a stable environment where MNC operations could thrive. However, the economy also faced the impact from the oil shocks of 1973 and 1979, which drove up business costs and dampened economic activity. Excess demand in the domestic labor market began to put upward pressure on real wages, resulting in a loss of competitiveness in relation to other exporters. Incipient wage-price pressures had begun to emerge that, if not dealt with, would severely threaten Singapore’s competitiveness.

Dealing with the issue of cost competitiveness required a two-pronged approach. First, it was necessary to stem the domestic cost and price pressures. The tripartite wage negotiation arrangements, which brought employers, employees, and the government to the bargaining table, were formalized in 1972 with the setting up of the National Wages Council (NWC). The NWC was also supported by a robust legal and legislative framework. This helped to ensure wage stability at a time when pressures to increase wages were substantial.

Second, Singapore’s industrial sector had to shift to the manufacture of higher value-added products. As early as 1971, the government reviewed its industrialization program. Restructuring the industrial base toward more capital- and skill-intensive industries meant that the EDB became

Figure 4.8. Third Phase—Industrial Restructuring (1973–84)



more selective in whom it wooed to Singapore. Firms requiring extensive protection (and that were likely to be low skilled or uncompetitive in the global market) were passed over or allowed to leave the country. The EDB also partnered with top European and Japanese MNCs to create training centers in Singapore, which helped to enhance the skills of their local workers and, later, to train a broader swath of Singaporeans. The government also introduced a levy on foreign workers to deter the hiring of low-skilled labor from abroad.

In this phase, the institutional capabilities and leadership of the EDB proved critical in the challenging task of fine-tuning Singapore's investment promotion strategies. For example, the Board decided to seek investments from U.S. MNCs over those from Taiwan, China, and Hong Kong, China, because the latter group at that time tended to produce lower value-added, labor-intensive products such as textiles. Singapore's leaders also appreciated the importance of maintaining investor confidence in the volatile environment. They were ready to uphold the country's business-friendly reputation, which was becoming a very important intangible asset.

The country's workers were supportive of the tripartite wage negotiation system. The implicit social compact between the government and the people—the promise that by exercising wage restraint to generate growth, the people would share in the benefits of growth—was upheld. The benefits of Singapore's sustained economic progress were shared with the people, in the form of government housing upgrades and a public medical savings/insurance program known as Medisave. Tripartism was successful, with no serious labor unrest over this period.

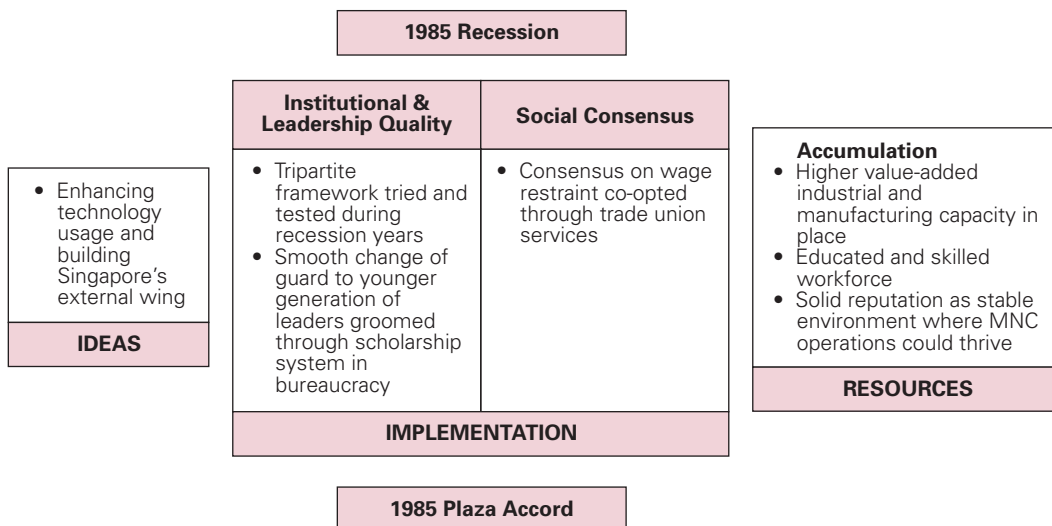
Consequently, Singapore enjoyed strong productivity growth and maintained its competitive edge. Unemployment remained steady at 4.5 percent even as economic growth slowed temporarily to 4 percent in 1975 from 13 percent in 1972, and inflation spiraled to 22 percent in 1974. Growth rebounded soon thereafter and remained robust from 1976–83, averaging 8.5 percent each year. Inflation was brought down to 3.9 percent over the same period. Singapore's industrial sector successfully moved up the value chain. For example, high-technology investment in capital-intensive industries such as component and precision engineering soon displaced investment in labor-intensive industries such as textiles and semiconductor assembly.

Fourth Phase: Industrial Diversification and Consolidation (1985–97)

(Figure 4.9)

Having staved off the challenges of the 1970s, Singapore faced rising unit labor costs in the latter half of the 1980s, straining competitiveness and dampening demand for its traditional exports. New engines of growth were needed. The year 1985 marked the beginning of a new growth opportunity: post-Plaza Accord, a flood of investments rushed to Southeast Asia, as low- and mid-skilled manufacturing was outsourced from Japan.

Figure 4.9. Fourth Phase—Industrial Diversification and Consolidation (1985–97)



Singapore, however, could not compete with its immediate neighbors for low-end manufacturing outsourced from Japan. Industrial restructuring, in this context, involved the following steps:

1. *Developing the economy's external wing.* The island's labor-intensive industries were allowed to "hollow out" to lower-cost countries in the region, freeing the country to focus its limited resources on high value-added activities. This involved, in some instances, encouraging the creation of special economic zones. This policy also allowed Singapore to seek higher returns on domestic savings by tapping into the growth potential of the emerging economies in Asia.
2. *Attracting mid-end investments from Japan and the developed world.* Moving up the value chain in manufacturing and associated services required technology deepening. Within electronics, for example, Singapore shifted emphasis toward growing the computer peripherals segment, which was a higher-end activity than component testing. The government initiated the Local Industry Upgrading Program, which encouraged MNCs to "adopt" local subcontractors with the aim of developing specialized clusters of firms serving the MNCs' needs. Singapore also began promoting other industries that required skilled labor inputs, such as biotechnology, banking, and financial services.
3. *Maintaining some measure of cost competitiveness.* The government reduced employers' Central Provident Fund (CPF) contributions and made wages more flexible by introducing variable wage components. Under the auspices of the NWC, trade unions agreed to practice wage restraint and accepted CPF cuts during the recession years of 1985–86. Workers consented to wage restraints, as trade unions managed to deliver a range of social services to union members and the larger public, which helped to offset the pains of restructuring. These services included workers'

education, a cooperative movement, and social and cultural programs. Singapore’s tripartite setup had passed a critical test.

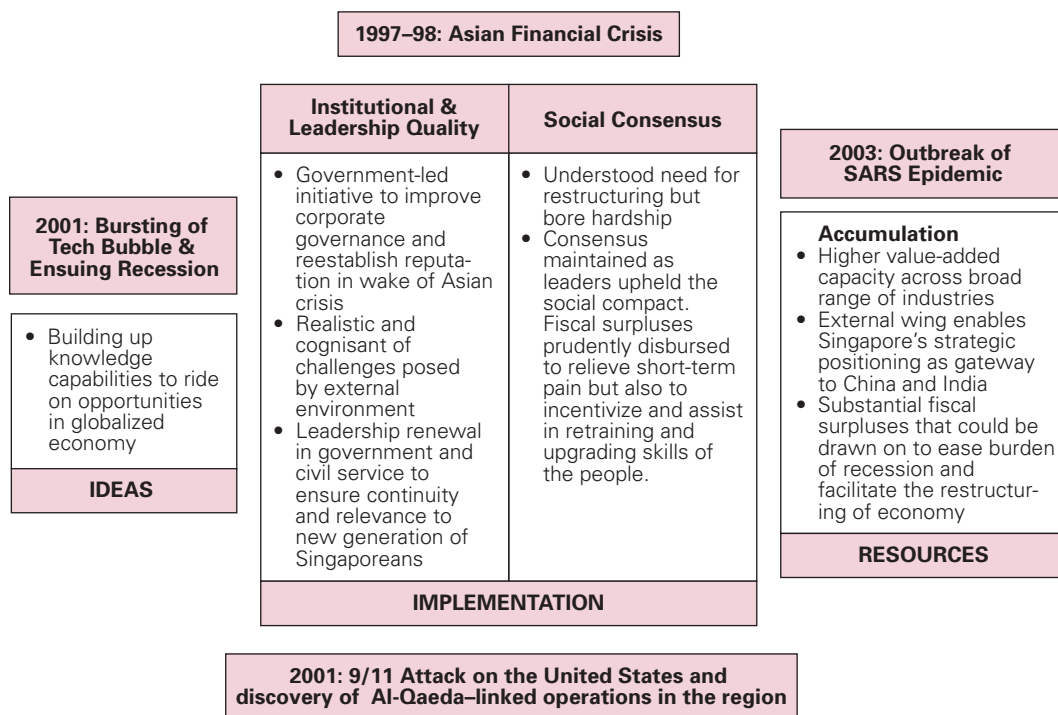
Concurrently, the political landscape within Singapore was also changing. With the smooth change of the guard, policy making passed to a younger generation of Singaporean leaders who had been groomed through the scholarship system in the civil service, and who had now come of age. This helped to ensure the consistency and continuity that investors valued.

Together, the decisive measures helped the economy recover strongly after growth faltered in 1985–86. Growth averaged 9 percent from 1987 to 1997, even exceeding 10 percent in some years. Singapore’s industrial sector successfully moved up the value chain and attracted middle-technology Japanese investments alongside the economies of Taiwan, China, the Republic of Korea, and Hong Kong, China. After the initial adaptation phase, the country was also able to grow its external wing. It made use of its experience in administration to develop economic zones in China and India. The relative success of this strategy demonstrated the transferability of good institutions and implementation practices.

Fifth Phase: Toward a Knowledge-Based Economy (1998 to present)
(Figure 4.10)

Developing Asia’s golden years came to an abrupt end with the Asian financial crisis in 1997. Singapore found itself in a far more challenging external environment in this phase. The region was struggling to recover

Figure 4.10. Fifth Phase—Toward a Knowledge-Based Economy (1998 to present)



from the debilitating effects of the crisis, and the rise of China posed a huge competitive challenge. The sense of external uncertainty was compounded by the attack on New York City's World Trade Center on September 11, 2001, and the discovery of terrorist groups in Asia linked to Al-Qaeda.

However, Singapore had a firm foundation on which it could build the capacity to face these challenges. The country had developed higher value-added activities across a broad range of industries. The relatively successful economic zones afforded the country the strategic opportunity to position itself as a gateway to Asia and to market itself as a hub for other regions in the world to establish inroads into the fast-growing economies of China and India.

Restructuring the economy to face the challenges in this phase meant equipping people and firms to operate in a globalized world, where production was more readily diffusible and where knowledge was a premium. Singaporeans and the country's firms had to be innovative, creative, and entrepreneurial to generate the technologies and efficiencies on which future productivity gains would come.

The government's role was thus to deregulate and liberalize economic activities to reduce business costs and preserve jobs during the crisis and its aftermath. Two packages, amounting to \$12.5 billion, were introduced in 1998. These included policies to lower total wage bills by 15 percent; to reduce costs arising from industrial and commercial land rental, foreign worker levies, and other government charges for electricity, telecommunications, port, and airport services; as well as to provide rebates on property, income, and corporate tax. Yet another substantial package was introduced in 2001 amid a global recession. The government also liberalized Singapore's "software"—that is, policies relating to social, cultural, and human capital—to help make the city an attractive and vibrant place for globally footloose talents.

Economic restructuring was a bitter but necessary medicine, as Singapore's economic planners were realistic and cognizant of the need to respond quickly to a changing environment. A key aspect was renewal in the political leadership and the civil service. There was a need for new ideas and fresh perspectives and to engage the younger generation of Singaporeans. As the burden of economic restructuring would be borne by those suffering from structural unemployment, the government had to provide "social support to those adversely affected by the changes, to ensure that no one [was] left behind." The social consensus for remaking Singapore was maintained through the visible, prudent, and targeted use of fiscal surpluses, to ease adjustment pains in the short term. Yet it was critical that this support was implemented "without undermining the incentive to work" (Lee 2003). The people were thus incentivized to undertake retraining, and programs were carefully designed to avoid a "welfare culture."

Summary

Singapore's economic development story is not necessarily about its successful adoption of unique policies. Instead, it is about how the country managed to

implement appropriate policies successfully. This has come about through robust institutions guided by visionary leaders, who have won the support of the general populace. The people have experienced the tangible benefits of growth and have thus backed the government’s institutions and leaders. The successful implementation of growth policies has helped the country to earn credibility and develop a solid reputation, which has proven invaluable in Singapore’s bid to attract foreign investment. The conceptual political-economy framework developed in the previous section has shown its usefulness in providing a broad interpretive filter through which the economic developmental experience can be better understood.

Natural Endowments, Institutions, Leadership, and People

This section will apply the conceptual political-economy framework to the growth performances of countries in table 4.4, to establish its broader applicability. In particular, an attempt is made to assess divergences in countries’ growth by analyzing empirical measures identified as possible explanatory factors. Because many of the underpinnings of growth are not readily quantifiable, use has been made of existing surveys and research, and, in certain instances, appropriate proxies to indicators relevant to the conceptual framework on growth have been created. The framework covers four broad categories of indicators: resources, institutions, leadership, and people or social consensus (see appendix 2 for data sources and interpretations).⁶ Together, these four criteria cover the pillars of growth as summarized in figure 4.5.

The most tangible resources available to a country are its natural endowments. A priori, having a rich natural endowment should benefit a country, because superior geography, abundant natural wealth, or a large population affords economies more choices. The advantages of superior geography, proxied by coastal access as a measure of the extent to which a country is landlocked, are telling. Of the 10 growth laggards listed in table 4.2, Niger, the Central African Republic, and Chad are completely landlocked, and another four have minimal sea access, in that their coastal boundaries account for less than a tenth of the country’s total bounds.

6 The data used in the analysis cover the group of countries listed in table 4.4.

Table 4.5. Natural Endowments

	Advancers	Average Performers	Underperformers	Sample Average
Coastal access/ landlocked ^a	59.0	53.3	47.9	53.8
Resource richness ^b	41.8	57.0	46.7	49.7

Sources: Mineral Resources Data System 2005; PennWell Corporation 2006; CIA 2007; authors’ estimates.
a. Score refers to the proportion of a country’s coastal boundaries to its total boundaries (land + sea). A zero score refers to a landlocked country, and a full 100 score refers to countries with only coastal boundaries.
b. Higher score indicates greater wealth in natural resources.

Conversely, growth advancers enjoyed superior sea access as compared to average and underperforming economies, as seen in table 4.4.

Being rich in natural resources is no guarantee of prosperity. All other things being equal, growth advancers were resource poor compared to average growth economies or underperformers, although the former had the benefit of superior geographic location and sea access. By most counts, Africa and Central and South America are resource-rich continents; yet the natural wealth of ancient nations located in these continents, such as the Ashanti, Aztec, and Incan Empires, did not guarantee their peoples' prosperity in the subsequent centuries. Such reversals of fortune do occur, as Acemoglu, Johnson, and Robinson (2002) show.

Whether natural wealth enriches or impoverishes a country is heavily influenced by its institutional base. Strong institutions tend to implement policies that channel natural resources to the generation of sustained growth and the accumulation of national wealth; weaker ones could conversely lead to the implementation of exploitative policies that benefit select groups in the short term but that are detrimental to the economy and the broader populace over the longer term. Institutional structures and operations are path-dependent "carriers of history." Once created, they may persist for some time, unless impacted through the accumulation process or via shocks. The quality of institutions is also determined by the people staffing them.

The importance of the quality of institutions and leadership is clearly seen in tables 4.6 and 4.7. Unequivocally, the advancers ranked better on all measures of legislation, policy execution, and enforcement. They also had better scores on most measures of leadership as compared to the other

Table 4.6. Institutional Quality

	Advancers	Average Performers	Underperformers	Sample Average
Judicial independence	56.6	36.0	45.2	46.7
Prudence in government spending	50.4	38.9	42.9	44.3
Effectiveness of law-making bodies	52.1	40.1	37.3	43.9
Regulatory quality	56.6	36.1	48.5	45.6

Sources: Lopez-Claros, Porter, and Schwab 2005; Kaufmann, Kraay, and Mastruzzi 2006; authors' estimates.

Note: The higher the score, the more positive the average rating on the variable for each group.

Table 4.7. Leadership Quality

	Advancers	Average Performers	Underperformers	Sample Average
Corruptions perception index	39.1	26.3	35.6	32.5
Voice and accountability	52.6	39.1	51.2	46.3
Political stability	50.3	33.0	36.0	41.7
Government effectiveness	57.5	35.5	44.6	44.7

Sources: Kaufmann, Kraay, and Mastruzzi 2006; Transparency International 2006; authors' estimates.

Note: The higher the score, the better the average rating on the variable for each group. A high score on the corruptions perception index reflects lower corruption.

categories. The institutions were more efficient and effective, and the leaders were less corrupt and more accountable, which laid the ground for more stable political environments in the advancers.

Institutions and the values under which leaders and bureaucrats operate are important in helping us to understand why some countries persistently choose suboptimal policy mixes. This cannot be, over time, because of sheer ignorance of growth paradigms or poor knowledge of local constraints. Instead, it may be because institutions and leaders are hindered by local systems, structures, and values.

Notably, having quality institutions does not preempt a specific political system. As with economics, so the first principles in political science apply: checks and balances within a system are necessary, but they need not emanate from democratic systems alone. Table 4.8 shows that advancers are, on average, more democratic than underperformers, but high-performing economies can be identified that are more authoritarian than even the least democratic underperformer. Examples also exist of average or underperforming economies in which democracy is attained to a higher degree than in the highest-ranked advancer democracy. On broad averages across the different groups, however, our observations seem to confirm the Lipset hypothesis (Lipset 1959) that democracy requires higher levels of income to sustain it. At lower income levels, growth and democracy appear to be mutually inhibiting, and poorer countries with democratic systems tend to lapse into more authoritarian ones as incomes rise, only reverting to democratic systems at higher income levels. The findings above seem to support this hypothesis, because the advancers and underperformers display higher levels of democracy, whereas the average growth economies' score could represent the breakdown of fledgling democracy until higher income levels are generated and sustained. The measure of political rights is inconclusive as well. Indeed, countries classified as growth advancers afford both the highest and lowest levels of political rights across the sample and, on average, score more poorly in this measure relative to the other groups.

Institutions and leadership aside, the third major player in policy and reform is the people. Leaders share their vision with the people; institutions implement and enforce policies that affect society. If policies are tailored

Table 4.8. Democracy and Political Rights

	Advancers	Average Performers	Underperformers	Sample Average
Democracy ^a	-0.5	-2.6	-1.4	-1.5
Score range	-7.5 to 8.6	-12.8 to 10.0	-7.3 to 9.8	
Political rights ^b	3.3	4.4	3.5	3.9
Score range	1.2 to 6.7	2.1 to 6.5	1.8 to 5.1	

Sources: University of Maryland 2005; Freedom House 2006.

a. A higher score indicates greater democracy, averaged over 1960–2003. Score range: -10 = authoritarian, +10 = democracy. Scores < -10 indicate foreign occupation, collapse of government, or transitional or provisional government over most of the period. These readings are excluded from the computation of each group's average and the sample average.

b. A higher score indicates greater political rights, averaged over 1972–2005. Score range: 1 = least free, 7 = most free.

Table 4.9. Social Consensus

	Advancers	Average Performers	Underperformers	Sample Average
Consensus between society and state				
Brain drain ^a	53.0	38.1	40.7	44.5
Public trust of politicians ^a	39.6	27.5	30.0	33.0
Consensus across society				
Gini index ^b	39.9	46.1	49.4	45.0
Ethno-linguistic and religious fractionalization index ^c	0.52	0.49	0.57	0.52
Civil war (1960–2002) ^d	12.8	14.8	18.9	15.2

Sources: Annett 2001; Gleditsch 2004; Lopez-Claros, Porter, and Schwab 2005; World Bank Development Data Group 2006; CIA 2007; authors' estimates.

a. The higher the score, the less brain drain, and the higher the trust of politicians.

b. The higher the score, the more unequal is income distribution.

c. Score represents the probability that any two individuals picked at random will be from a different ethno-linguistic and/or religious backgrounds.

d. The higher the score, the more frequent were civil wars.

for growth, their final impact in terms of gains and distribution will matter to the population. Creating the right incentives for people to support and participate in the growth policies and reforms—creating social consensus—becomes relevant, especially if short-term pain is required for long-term gain. Table 4.9 summarizes the set of social consensus indicators.

The brain-drain variable can be interpreted as a measure of the trust that a (talented) person vests in the existing institutions and leadership to create sufficient opportunities and freedoms for the exercise of their talents. Unsurprisingly, a higher incidence of brain drain is found in average performers and underperformers as compared to advancers. The public's trust in its political leaders to make the right policies, improve standards of living, and enhance security is also considerably lower in average or underperforming economies than in advancers.

Social consensus can also be understood as the building of convergent interests across the different groups in society. Empirically, the Kuznets curve displays an inverted-“U” shape, meaning that economies with low levels of income, alongside economies with high levels of income, are likely to see lower income inequality and, thus, lower Gini coefficients. It is therefore unsurprising that growth advancers have lower relative income disparities as compared to average performers.

Ethnic fractionalization is a direct measure of intrasocietal divisions. Empirical studies on sub-Saharan Africa show that underperforming African economies that are more fractionalized along ethno-linguistic and/or religious lines are also more prone to conflict, institutional capture, partial policy making, and divergent politics.

In 1960, 14 of the 15 most ethnically heterogeneous societies in the world were in Africa, and nearly all of these economies have remained in the bottom third of the global income spectrum. This is “Africa's growth tragedy” (Easterly and Levine 1997). More reasonably, the confluence of

ethnic fractionalization with higher income inequality magnifies fault lines and weakens intrasocietal consensus. Biased policy making, obstructionist attitudes of the general public against pro-growth reforms, or even physical conflict between the different groups (civil war) could thus impede growth.

Fractionalization, however, thus tells only part of the growth story. After all, 11 of the 14 growth advancers also had above-average levels of fractionalization, and yet their success contrasts starkly with that of Africa, or even with that of average and underperforming economies. Growth advancers seem to have engaged in convergent politics and policy making and were able to create institutions to manage societal fault lines instead of diverting benefits to one group to the exclusion and/or at the expense of another. In average or underperforming economies, leaders and institutions were unable to build consensus across different factions. Notably, civil war occurred more frequently in growth underperformers, as institutions and leaders failed to forge unity and instead exploited differences for their own gain, possibly fighting for resource wealth.

Resources, institutions, leaders, and people all interact with each other, with institutional setups often the nexus of policy-making activity and consensus building between leaders and people. Countries may start with different natural endowments, but institution and leadership quality will determine their growth trajectory over the longer term. The people may be divided along several lines, but consensus can be built through robust institutions and competent, incorrupt, and trustworthy leaders. Advancers, by and large, are those that may not have had the fortune of geography but have enjoyed the fortunes of history. They have continued to build up institutions to meld existing fault lines in society, instead of allowing these divisions to wreck institutional and government operations.

Country data on each indicator are detailed in appendix 3. Country scores have been rescaled from 0 to 100, with a higher number indicating a more favorable score. This allows the derivation of a composite score for natural endowments, institutions, leadership, and social consensus. Natural endowments aside, growth advancers outscore average growth economies and underperformers on the composite measures in table 4.10. The divergence is especially stark when focusing on institutions and leadership.

Notably, Singapore scores better on overall indexes measuring institutional and leadership quality and social consensus, bettering the sample average and the growth advancers on aggregate (table 4.11).

Policy Lessons and Conclusion

By the late 1980s, growth practitioners and academics had come to a broad agreement on some of the macro- and micro-fundamentals that were deemed critical to sustained growth. Further case studies of other countries' growth experiences might shed light on how successful economies have been in mapping these fundamental economics first principles onto policy

Table 4.10. Composite Scores

Composite Score	Growth Advancers	Average Performers	Underperformers	Sample Average
Natural endowments	50.4	55.2	47.3	51.7
Institutional quality	56.2	36.3	43.7	44.4
Leadership quality	51.1	34.1	44.8	42.1
Social consensus	59.6	59.2	51.9	57.5

Source: Authors' estimates.

Note: Scores are derived from the individual components within each composite grouping. Scores on individual components are rebased from 0–100, with a higher score indicating a better outcome on that component.

Table 4.11. Composite Scores for Singapore on Framework Indicators

Composite Score	Singapore	Growth Advancers	Sample Average
Natural endowments	50.0	50.4	51.7
Institutional quality	84.0	56.2	44.4
Leadership quality	75.6	51.1	42.1
Social consensus	76.2	59.6	57.5

Source: Authors' estimates.

Note: Scores are derived from the individual components within each composite grouping. Scores on individual components are rebased from 0 to 100, with a higher score indicating a better outcome on that component.

outcomes. Summarized below are some of the broad perspectives gleaned from this study into the global growth experience:

Policy Formulation

1. Count the costs—know that sustained growth requires reforms that take place over a continuum of cost-benefit trade-offs. Growth, and the policies that jump-start and sustain it, incurs costs. For example, income inequality is typically low at low levels of income but may rise as growth takes place into the middle-income strata and decline as the country gets richer. The relevant lesson for developing economies at the lower end of the income scale is that there may be short-term pain to raise standards of living. For example, countries may have to live with less democracy or greater inequality in the short term to achieve sustainable growth in the long term.
2. Foundational economics first principles do not map onto well-defined, universal policy sets. Basic macroeconomic stability—a first principle—is essential if growth is to be sustained and permanent progress to be made in the war on poverty. Ideas as to how an economy can attain macroeconomic stability are fluid and varied, and there is thus no single yellow brick road to prosperity. A paradigm that is fashionable and relevant in one decade could fall out of favor and be irrelevant in the next, and may yet be resurrected in a third.
3. Policy formulation must have a localized context. Experience has shown that a wholesale application of ideas to an economy is no recipe for growth. The idea needs to be applied to its local context. A pragmatic assessment

of the resources, constraints, and other structural peculiarities associated with the domestic economy is necessary for any growth practitioner seeking to understand how certain growth paradigms may work out in an economy.

4. Leadership quality is important, because policy formulation is prone to capture. Although practitioners and academics alike have come to a consensus that there is no single policy that is universally applicable to all economies, it has been less acceptable to enunciate the view that there are economies that persistently choose poor policies. Good policy making requires high-caliber, impartial, selfless leaders in institutions that enhance, not undermine, each other. Singapore, for example, has a practice of ensuring that leaders in policy-making positions are well remunerated, thereby reducing the incentives for leaders to undertake corruption or rent-seeking activities. The government scholarship system has also allowed the civil service to harness talent for its use. Checks on and balances against individuals and institutions with vested interests are also required. Good leaders also contribute to successful policy implementation by their ability to convey their vision of the road ahead, mobilize people, and build consensus for their policies through a politics of convergence, not divergence.

Policy Implementation and Review

1. Robust institutions are key to policy implementation. Failure at the implementation stage drives a wedge between policy in theory and policy in effect. To reduce that wedge, institutions such as an effective administration and civil service, independent judiciary, a vibrant private sector, and a responsible press are needed. History has demonstrated the debilitating effects that institutions captured by vested interests have on growth; commitment to good governance ensures that a country's institutions remain effective and impartial and are devoted to the implementation of well-formulated growth policies.
2. People consensus matters as growth policy ultimately impacts the population directly. Two kinds of consensus are found at the social level—one, between society and the government, and two, within different social groups. Sustained growth often requires trading short-term pain for long-term gain, and even the best of policies can be undermined at the implementation stage if people do not believe in the capabilities of the leaders and government to plan or carry through policy well. This would also reduce public willingness to incur short-term pain given the uncertainty of future gains from growth. The people's confidence and trust in their leaders—the first kind of people consensus—is thus relevant for sustained growth. Furthermore, the end point of growth and development—the well-being of a nation's people—will thus be meaningful only to a people united on the purpose and destiny of their country and who have an entrenched stake in the country. In the absence of a unifying vision, social conflict becomes common, and directly undermines efforts to jump-start growth as well.

3. Start small and leverage on “demonstrable effects.” Many gradual steps in the right direction may yield more benefits than wholesale “big bang” reforms. Small-scale reform can yield substantial gains (or “demonstrable effects”) on the margin without necessarily incurring significant costs. This also buys policy makers critical time for building up consensus and participation. On a geographical basis, large countries that face substantial logistic and institutional difficulties in implementing growth policies on a broad base can instead adopt a targeted approach by jump-starting growth in a smaller region (for example, SEZs in China). Indeed, the promise of a big solution to a very big problem is an outlier in the practice of economics, where economists usually study how marginal changes to existing systems and policies can bring about general marginal improvements.
4. Avoid ideological lock-ins. A policy is only as successful as its impact. Policy makers must avoid pursuing a policy for its own sake and should instead assess whether a policy is still working and/or remains relevant. Also, policies can be captured by vested interest groups. Policy makers must thus constantly review, fine-tune, and calibrate policies. This allows them to assess whether (1) the ideas behind the policies have worked in the local context, (2) whether and how implementation could be improved, or more fundamentally, (3) whether one should rethink the original growth paradigms in light of possible changes in the operating environment. After all, policy makers rarely hit on the right policy mix from the beginning. Starting small and proceeding in a sequenced stepwise fashion will allow time for building up popular consensus and will prevent policy inflexibility that tends to come with the high sunk costs associated with “big bang” reform packages.

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Annex 1: Method for Sampling PWT6.2

The Penn World Table provides internationally comparable data on production, income, and prices on as many as 188 countries. In updating PWT6.1 to 6.2, several countries' data have been added or removed, as a result of political changes or improvements to the national accounts. This chapter was originally prepared using data from PWT6.1, but notable revisions were made with the release of PWT6.2 in September 2006. These revisions have the potential to skew the data dramatically, with the addition of data on, for example, oil-rich Middle Eastern countries in 1970 or poorer, former Soviet Union states after 1990.

Acknowledging that PWT6.2 has more updated information (extending to 2004 for a number of countries, and 2003 for most), the data are used for the rest of the analysis that follows in this chapter. Yet it is necessary to derive a consistent set of countries whose inclusion does not dramatically skew the analysis nor create artificial “structural breaks” in the database. As such, the following methodology was applied to derive a final count of 118 countries in the sample:

1. Choose countries that appear in *both* PWT6.1 and 6.2. This reduces the database to 145 countries from 188 in the full PWT6.2.
2. Data from the RGDPC variable, or PPP-adjusted GDP per capita (chain-weighted) for these 145 countries, are divided into five-year periods. The latest observation, 2003, is also included. Of the nine blocks of five-year periods (1960–2000) and the final set of observations from 2003, any countries with fewer than six observations in PWT6.1 are removed. These countries are similarly removed from PWT6.2.
3. PWT6.2 also lacks data on a number of countries where previously there were data under PWT6.1; these are similarly removed.

Annex 2: Data Sources and Interpretation

Variable	Year	Source	Interpretation of Score
Income and growth			
Real GDP per capita	1960–2003	Heston, Summers, and Aten (2006)	RGDPC variable, which refers to the chain-weighted, PPP-adjusted per capital GDP denominated in international dollars. Each international dollar has the PPP equivalent of \$1 in a given year.

Table 5: Natural Endowments

Coastal access/landlocked	...	CIA (2007)	Score refers to a country's coastal boundaries as a share of its total land and sea boundaries. 0 = landlocked country, 100 = full sea access.
Natural resources	...	<p><i>Arable Land</i> Food and Agricultural Organisation of the United Nations</p> <p><i>Oil Reserves and Gas Reserves</i> PennWell Corporation (2006). Sourced from the Energy Information Administration.</p> <p><i>Precious Metals and Gemstone Mines</i> Mineral Resources Data System (2005)</p>	<p>0 = poor in natural resources, 100 = rich in natural resources. This is a composite index derived from the highest score across four indexes:</p> <ol style="list-style-type: none"> 1. Arable land as percentage of total land area 2. Oil reserves (billions of barrels) 3. Natural gas reserves (trillions of cubic feet) 4. Number of mines with precious metals (gold, silver, platinum, and palladium) and gemstones <p>Recognizing that some natural resources are mutually exclusive (for instance, a farm cannot be planted on top of an oil well), the highest score across the four categories, and not the average, is taken as indicative of a country's wealth in any natural resource.</p> <p>Authors' calculations</p>

Table 6: Institutional Quality

Judicial independence	2005–06	Lopez-Claros, Porter, and Schwab (2005)	1 = no, heavily influenced, 7 = yes, entirely independent. Final score rescaled such that maximum score = 100.
Prudence in government spending	2005–06	Lopez-Claros, Porter, and Schwab (2005)	<p>Corresponds to "Wastefulness of government spending" variable. 1 = is wasteful, 7 = provides necessary goods and services not provided by the market.</p> <p>Final score rescaled such that maximum score = 100.</p>
Effectiveness of law-making bodies	2005–06	Lopez-Claros, Porter, and Schwab (2005)	<p>1 = very ineffective, 7 = very effective.</p> <p>Final score rescaled such that maximum score = 100.</p>
Regulatory quality	2005	Kaufmann, Kraay, and Mastruzzi (2006)	<p>–2.5 = poor governance outcomes, 2.5 = excellent governance outcomes.</p> <p>Final score rescaled such that maximum score = 100.</p>

Table 7: Leadership Quality

Corruptions perception index	2006	Transparency International (2006)	<p>0 = highly corrupt, 10 = highly clean.</p> <p>Final score rescaled such that maximum score = 100</p>
Voice and accountability	2005	Kaufmann, Kraay, and Mastruzzi (2006)	<p>–2.5 = poor governance outcomes, 2.5 = excellent governance outcomes.</p> <p>Final score rescaled such that maximum score = 100.</p>

Variable	Year	Source	Interpretation of Score
Political stability	2005	Kaufmann, Kraay, and Mastruzzi (2006)	–2.5 = poor governance outcomes, 2.5 = excellent governance outcomes. Final score rescaled such that maximum score = 100.
Government effectiveness	2005	Kaufmann, Kraay, and Mastruzzi (2006)	–2.5 = poor governance outcomes, 2.5 = excellent governance outcomes. Final score rescaled such that maximum score = 100.

Table 8: Democracy and Political Rights

Democracy/ authoritarianism	1960–2003	University of Maryland (2005)	Country scores calculated as average over 1960–2003. Index units, –10 = strongly authoritarian, +10 = strongly democratic. Special cases: collapse of central authority (–77) and transition/provisional governments (–88). These special cases are dropped when calculating the average score for the group. Excluding the special cases, the final score has been rescaled such that maximum score = 100. Countries that average a score < –10 over the time period are scored 0.
Political rights	2005	Freedom House (2006)	Index units, 1 = most free, 7 = least free. Final score rescaled such that maximum score = 100.

Table 9: Social Consensus

Brain drain	2004–05	Lopez-Claros, Porter, and Schwab (2005)	1 = talented people leave country, 7 = talented people stay. Final score rescaled such that maximum score = 100.
Public trust of politicians	2004–05	Lopez-Claros, Porter, and Schwab (2005)	1 = very low, 7 = very high. Final score rescaled such that maximum score = 100.
Gini index	Various years	World Bank Development Data Group (2006)	Data adjusted such that a higher score is positively correlated with higher social consensus, that is, 0 = perfect income inequality, 100 = perfect income equality.
Ethnic fractionalization	1960s–1980s	Annett (2001) Cameroon and Taiwan, China: authors' calculations based on population breakdown by ethno-linguistic group provided in <i>CIA World Factbook</i> (2007)	0 = homogeneous society, 100 = fractured society. Score refers to the percent probability that any two individuals selected at random in the country will be from different ethnic and/or linguistic backgrounds. Data adjusted such that a higher score is positively correlated with higher social consensus, that is, 0 = fractured society, 100 = homogeneous society.
Civil war	1960–2002	Extension of Correlates of War database (intrastate wars). Gleditsch (2004)	Binary, Yes = 1, No = 0 for any observation of civil war occurring in a country for any length of time in a given five-year period (for example, 1960–64). Score refers to proportion of five-year country observations with civil war. Data adjusted such that a higher score is positively correlated with higher social consensus, that is, 0 = civil war in every period, 100 = no civil war.

Annex 3a: Indicator Scores for Growth Outperformers

	Botswana	China	Dominican Republic	India	Korea, Rep. of	Malaysia	Pakistan	Romania	Sri Lanka	St. Lucia	St. Vincent	Taiwan, China	Thailand
Institutional quality	69.57	50.05	32.21	56.15	57.76	71.45	41.27	41.23	41.88	72.72	72.72	63.23	60.48
Judicial independence	85.86	48.57	34.29	75.71	60.00	77.14	37.14	37.14	42.86	...	...	61.43	62.86
Prudence in government spending	62.86	48.57	24.29	44.29	54.29	72.86	48.57	37.14	35.71	...	...	64.29	61.43
Effectiveness of law-making institutions	64.29	58.57	25.71	61.43	51.43	75.71	41.43	37.14	41.43	...	...	55.71	60.00
Regulatory quality	65.29	44.47	44.54	43.17	65.34	60.09	37.95	53.49	47.52	72.72	72.72	71.50	57.63
Leadership quality	63.57	35.99	43.70	42.70	61.13	55.45	25.80	47.02	35.62	71.71	71.65	64.45	46.09
Corruption perceptions index	56.00	33.00	28.00	33.00	51.00	50.00	22.00	31.00	31.00	...	...	59.00	36.00
Voice and accountability	63.65	16.83	54.02	57.06	64.78	41.89	25.34	57.13	44.71	70.70	70.70	65.88	51.39
Political stability	68.85	46.36	50.99	32.99	58.66	59.75	16.47	50.64	25.06	71.97	72.83	60.65	39.02
Government effectiveness	65.78	47.76	41.80	47.75	70.07	70.15	39.37	49.33	41.73	72.45	71.42	72.29	57.97
Social consensus	60.94	59.86	50.52	42.90	74.54	63.87	45.36	57.21	44.21	67.80	73.50	74.21	59.35
Public trust of politicians	57.14	47.14	18.57	30.00	42.86	67.14	27.14	27.14	22.86	...	...	52.86	42.86
Gini index	37.00	69.00	48.30	67.50	68.40	50.80	69.40	69.00	66.80	57.40	...	...	58.00
Ethnic fractionalization	52.00	40.00	54.00	10.00	100	30.00	39.00	71.00	29.00	46.00	47.00	72.56	37.00
Civil war	100	88.89	88.89	55.56	100	100	55.56	88.89	66.67	100	100	100	88.89
Brain drain	58.57	54.29	42.86	51.43	61.43	71.43	35.71	30.00	35.71	...	...	71.43	70.00
Geography	22.86	69.80	50.32	45.16	79.80	70.18	21.26	23.86	57.14	53.23	58.97	67.14	35.63
Coastal access	0	39.60	78.16	33.17	91.02	63.66	13.38	8.23	100	100	100	100	39.83
Resource richness	45.71	100	22.49	57.14	68.57	76.70	29.15	39.49	14.29	6.45	17.95	34.29	31.43
Politics													
Political rights index	27.27	95.24	32.90	32.03	44.59	54.11	68.40	72.29	41.99	16.48	24.73	54.55	47.62
Democracy/autocracy	87.76	12.31	24.44	92.96	40.74	76.06	22.69	24.17	81.57	...	...	32.41	27.59

Annex 3b: Indicator Scores for Average Performers

	Bolivia	Cameroon	Cape Verde	Comoros	Côte d'Ivoire	Ecuador	Egypt, Arab Rep. of	Grenada
Institutional quality	32.71	34.44	45.76	17.31	31.06	24.78	48.26	57.19
Judicial independence	31.43	31.43	...	...	...	17.14	...	...
Prudence in government spending	35.71	34.29	...	...	...	28.57	52.86	...
Effectiveness of law-making institutions	24.29	37.14	...	...	...	20.00	51.43	...
Regulatory quality	39.40	34.90	45.76	17.31	31.06	33.40	40.51	57.19
Leadership quality	34.03	31.10	60.68	34.89	15.92	33.19	33.76	54.18
Corruption perceptions index	27.00	23.00	...	...	21.00	23.00	33.00	35.00
Voice and accountability	48.16	26.18	66.59	44.47	20.00	46.71	27.08	66.75
Political stability	26.92	43.13	67.66	42.86	0.19	33.35	32.02	59.74
Government effectiveness	34.05	32.10	47.80	17.35	22.50	29.70	42.95	55.22
Social consensus	44.35	46.44	76.00	85.89	56.13	50.06	63.52	73.00
Public trust of politicians	20.00	27.14	...	...	...	17.14	...	...
Gini index	39.90	55.40	...	...	55.40	56.30	65.60	...
Ethnic fractionalization	29.00	18.25	52.00	94.00	13.00	34.00	75.00	46.00
Civil war	100	100	100	77.78	100	100	77.78	100
Brain drain	32.86	31.43	...	...	...	42.86	35.71	...
Geography	48.57	16.88	55.71	67.94	31.39	73.48	56.81	52.94
Coastal access	0	8.05	100	100	14.21	52.67	47.90	100
Resource richness	97.14	25.71	11.41	35.87	48.57	94.29	65.71	5.88
Politics								
Political rights index	41.13	88.74	48.57	69.05	84.42	45.02	77.92	30.88
Democracy/ autocracy	22.96	17.61	...	30.00	0	68.33	19.07	...

Guinea	Haiti	Honduras	Indonesia	Morocco	Papua New Guinea	Philippines	Syrian Arab Rep.	Turkey	Zimbabwe
31.54	26.51	38.85	47.05	44.14	32.90	39.91	25.62	50.91	25.07
...	...	34.29	45.71	44.29	...	38.57	...	51.43	30.00
...	...	37.14	51.43	45.71	...	34.29	...	40.00	28.57
...	...	42.86	50.00	44.29	...	37.14	...	58.57	35.71
31.54	26.51	41.12	41.07	42.26	32.90	49.65	25.62	53.65	5.99
25.66	18.50	35.98	32.97	38.50	34.40	37.90	25.75	45.43	20.24
19.00	18.00	25.00	24.00	32.00	24.00	25.00	29.00	38.00	24.00
26.41	21.83	47.24	45.73	34.70	49.03	50.13	16.68	49.19	16.92
27.76	11.88	34.49	21.65	41.39	33.73	27.81	31.85	39.14	18.45
29.48	22.28	37.21	40.50	45.91	30.84	48.67	25.47	55.37	21.59
60.90	76.93	58.24	57.63	51.40	71.37	31.22	67.28	57.67	37.70
...	...	27.14	41.43	34.29	...	20.00	...	37.14	22.86
59.70	40.80	46.20	65.70	60.50	49.10	53.90	...	56.40	49.90
23.00	90.00	75.00	21.00	53.00	65.00	16.00	79.00	81.00	47.00
100	100	100	100	77.78	100	33.33	55.56	66.67	44.44
...	...	42.86	60.00	31.43	...	32.86	...	47.14	24.29
30.02	55.61	63.24	97.54	55.24	83.13	88.57	16.35	56.56	42.86
8.60	83.11	35.04	95.08	47.63	86.27	100	7.89	73.11	0
51.43	28.11	91.43	100	62.86	80.00	77.14	24.80	40.00	85.71
93.07	87.88	49.35	71.43	65.37	30.48	47.62	92.21	44.16	75.76
16.09	0	42.22	28.70	14.06	100.00	53.24	0.00	73.24	30.00

Annex 3c: Indicator Scores for Growth Underperformers

	El Salvador	Fiji	Guatemala	Jamaica	Jordan	Madagascar	Namibia	Nicaragua	Peru	Senegal
Institutional quality	45.24	42.99	34.75	50.85	57.95	43.65	54.14	29.50	34.05	43.92
Judicial independence	44.29	...	35.71	58.57	67.14	41.43	68.57	17.14	28.57	...
Prudence in government spending	52.86	...	32.86	38.57	57.14	48.57	45.71	34.29	32.86	...
Effectiveness of law-making institutions	31.43	...	25.71	51.43	54.29	40.00	50.00	22.86	22.86	...
Regulatory quality	52.41	42.99	44.72	54.82	53.24	44.60	52.29	43.71	51.91	43.92
Leadership quality	46.55	52.53	34.25	47.36	45.95	45.53	52.51	39.23	37.56	46.14
Corruption perceptions index	40.00	...	26.00	37.00	53.00	31.00	41.00	26.00	33.00	33.00
Voice and accountability	55.14	53.53	42.66	61.40	35.29	49.89	57.28	49.75	50.85	55.97
Political stability	47.14	55.82	32.23	43.40	43.84	53.59	60.06	46.77	28.32	48.55
Government effectiveness	43.94	48.23	36.09	47.65	51.66	47.62	51.71	34.38	38.08	47.04
Social consensus	54.49	72.00	42.83	58.56	57.33	45.96	46.40	43.63	38.42	59.23
Public trust of politicians	32.86	...	21.43	28.57	51.43	28.57	38.57	18.57	20.00	...
Gini index	47.60	...	44.90	62.10	61.20	52.50	25.70	56.90	45.40	58.70
Ethnic fractionalization	85.00	44.00	48.00	65.00	48.00	13.00	22.00	50.00	34.00	19.00
Civil war	55.56	100	55.56	100	88.89	100	100	55.56	55.56	100
Brain drain	51.43	...	44.29	37.14	37.14	35.71	45.71	37.14	37.14	...
Geography	48.02	55.47	51.83	57.92	5.07	77.14	32.84	62.68	62.22	19.80
Coastal access	36.03	100	29.37	100	1.57	100	28.54	42.50	24.45	16.75
Resource richness	60.00	10.95	74.29	15.83	8.57	54.29	37.14	82.86	100	22.86
Politics										
Political rights index	40.69	48.92	52.38	26.41	72.29	56.71	38.57	59.31	53.68	55.41
Democracy/autocracy	13.70	67.94	42.04	98.78	17.31	37.50	80.00	21.76	37.04	29.09