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European Journal of Political Economy
Vol. 19 (2003) 453–477
European Journal of POLITICAL ECONOMY
www.elsevier.com/locate/econbase

Economic freedom and the success of the Asian tigers: an essay on controversy

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Received 4 March 2002; received in revised form 18 April 2002; accepted 8 January 2003

Abstract

The term "tigers" refers to a group of four to five East Asian countries that joined the rich Western countries after less than 50 years of "miraculous" growth. Controversies surround the attempt to explain how the successes were achieved. This paper surveys the discussion and uses the economic freedom index to address the main controversy, which is the role of the state in the rapid growth that took place. After a discussion of likely biases, the data are considered. Three of the five countries have a level of regulation much like other rich countries, while two have been as close to laissez faire as any country in the world. All are much more "market-friendly" than the LDCs that they left behind. The extent of laissez faire can, however, be only one aspect of the miracle.

JEL classification: O1; O53; P50; N45
Keywords: Tigers; NICs; Growth; Economic freedom

1. Introduction

Failure has no parents, but a queue of hopefuls claim "parentage" to the greatest successes in economic development, that of Japan and the *four Tigers* of the *Asian miracle*. There has been major controversy among the claimants. Japan was the first non-Western country to become rich. Four countries—Hong Kong, Singapore, South Korea and Taiwan—subsequently joined after three to four decades of very rapid economic growth. The national accounts for the first decade after the Second World War are highly

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0176-2680/03/$ - see front matter
doi:10.1016/S0176-2680(03)00012-0

Table 1
Some data for the five Tigers

	Main data			NGO indices	
	Population Mio 2000	Per square kilometre	gdp Index (PPP)	Economic freedom	Corruption (honesty)
Japan	126.400	335	115	7.91	6.4
South Korea	47.300	477	65	7.13	4.0
Taiwan	22.300	620	90	7.13	5.5
Hong Kong	7.000	6383	102	9.38	7.7
Singapore	3.600	5509	124	9.28	9.1

GDP per capita is termed *gdp*. In the table, gdp is in % of the EMU countries for 1998. Data from World Data (2000) and IDB (home page). The two NGO indices are the economic freedom index discussed below, and the (anti) corruption index from Transparency International. Both indices go from 0 (*worst*) to 10 (*best*). The values are for 1999 and 2000, respectively. The correlations among the three rightmost columns are all high: the most economically free Tigers are also the richest and most honest.

uncertain for all four countries, but it is clear that they were similar and at an African level as late as 1955. Table 1 describes the contemporary standard of living. Poverty could be eliminated in the world if the Tiger success story could be compressed into a clear *recipe* that identifies an *economic strategy* for all poor countries to follow. While such a recipe may not be possible, guidance can perhaps nonetheless be distilled from the Tiger story. The diversity in guidance offered by different distillers is amazingly extensive. I shall focus on the more moderate *liberal* versus *revisionist* stands in the dispute.[1]

We shall see that the *economic freedom index* from the *Fraser Institute* casts light on the issues under dispute. If the reader agrees that these data (within limits) are what they claim to be, the scope of disagreement in one of the greatest disputes in economic development is reduced.[2]

I shall use the following terms. South Korea, Taiwan, Hong Kong and Singapore are the *four Tigers*. Including Japan, there are *five Tigers*.[3] *Asia* designates the Far East including Malaysia and Indonesia. The Asian miracle refers to the high growth experience of Asian countries. Liberal is used in the European sense.

The undisputed facts are first set out in Section 2. The controversy between liberals and revisionists is addressed in Section 3. The economic freedom index is introduced in Section 4. Section 5 demonstrates that the index gives rather clear answers to the key question discussed. Section 6 summarizes the findings.

[1] Ideological terms are defined relative to the *market/dirigisme dimension*. Liberals are thus more pro-market, while revisionists are more pro-dirigisme. Pure pro-market stands are termed laissez-faire.

[2] Some—including one referee—believe that the index *cannot* be used for the purpose at hand, as it is a complex multidimensional issue. I think it is important, when dealing with big controversies, not to loose track of the main picture and to avoid being drowned in details, and that this is precisely what the index can help us to do.

[3] Japan started to grow much before the other four Tigers, but Japan also had high growth periods and served as a role model. Therefore, Japan is often included as a Tiger. Note from Figure 6 that Japan falls almost exactly in the middle of the five countries, so it is not important for our discussion whether Japan is included.

2. Some undisputed facts

The world has three groups of rich countries: One is the old group of the West that consists of about 25 countries.[4] The second is the new group of five Asian countries: Japan, South Korea, Taiwan, Hong Kong and Singapore. This group is rapidly increasing. The third group is the thinly populated—mainly Arab—oil countries.

2.1. The growth numbers

The West grew rich by about 100 years of moderate growth $1.03^{100} = 19$. The Tigers became rich in just three to four decades by growing at no less than 8–10% per year, i.e., $1.1^{30} = 1.08^{37} = 17$. As they reach the rich countries, growth seems to taper off, as predicted by the convergence hypothesis.

The Tigers are surrounded by *mini-Tigers* such as Thailand, Malaysia, Indonesia and so on, which are also doing rather well but still have some way to go. Also, some countries in Asia—Myanmar and North Korea—have done poorly. The contrasts between North and South Korea and between Thailand and Myanmar are often used as strong evidence of the effects of different economic strategies and political regimes.

Finally, China and Vietnam are often included in the discussion. These two countries pursued the very different economic strategies of first a *Stalinist/Maoist* model and then a liberal model. It is undisputed that the liberal model, which was first introduced in China after 1978, and then in Vietnam, has been successful. The economic record under the old system is still controversial[5] and difficult to assess because of changes over time and periods of monumental political events. Also, the rapid economic growth of China and Vietnam took place on the foundations laid under the old system. Even so, it has often been argued that the successful economic development of Hong Kong is being replicated in Shanghai, Guangzhou (Canton) and other Chinese growth centers.

2.2. Classifying the five countries

I shall now focus on the five Tigers. Table 1 gives some information about these countries. Their total population is almost as large as that of the six founding members of the European Union. All five countries have a high population density, and none is rich in mineral resources. The table suggests that tigers are of two kinds.

The two *city-states* of Singapore and Hong Kong have been (even) more successful than Taiwan and South Korea. The city-states, which had a long history as British colonies, viewed their only chance for successful development to be to become trade centers, and they achieved trade flows in excess of their GDP. For them, it was and still is of key importance that nothing hampers trade. Hence, they had good reason to follow very liberal policies, as they did.

[4] As usual the *West* consists of Western Europe, USA, Canada, Australia and New Zealand.

[5] Official growth of China and Vietnam before the reforms was not inferior to that after the system change, but GDP calculations in communist countries are often misleading, and it is difficult to imagine that the regimes of either country would have changed to a (much more) liberal system without good reasons.

The *Japanese-style Tigers* are Japan and its two former colonies Taiwan and Korea, the latter of which both successfully adopted many Japanese institutions.[6] They were liberated from Japan by the USA, and there was a major land reform after the flight of the Japanese landlords. They both were involved in the *Cold War* on the US side. In the Korean case, there was a large-scale real war.[7] Taiwan escaped war.

2.3. Three interesting facts: income distribution, public sector share and savings rate

Two of the five Tigers—South Korea and Taiwan—had a relatively equal income distribution from the start of their growth period. The Gini-coefficients reported were in the range of 0.30–0.34 (much like the USA and India), while many LDCs in Africa and Latin America had Gini-coefficients around 0.5. The Ginis deteriorated a little the first few years after the start of the high growth period in both countries but soon returned to their previous levels. Both countries have remained fairly equal with almost unchanged Ginis.

The reason for the low Ginis at the outset of the super-growth is the large land reforms. However, during the growth, the share of agriculture decreased as elsewhere, and it is interesting that the Ginis could remain so low. Normally, economic development in densely populated (labor surplus) economies would be associated with rising unemployment in the towns, as described by the Harris–Todaro mechanism.[8] This creates large earning gaps in the economy, and hence a less-equal income distribution. In the case at hand, this did not happen due to the rapid growth of employment in the modern sector. The low Ginis and rapid growth of the Tigers shows that high growth is not prevented by a (fairly) equal income distribution. These cases are used as the main observations in studies showing that an equal income distribution increases the growth rate.[9]

The Ginis of Hong Kong and Singapore at the start of high growth were closer to the average LDC, but as the countries grew rich, their distribution improved (as usual), and now they are close to the other Tigers.

Another important point is that all five rich Asian countries have relatively small public sectors compared to the West. While the shares are in the range of 40–50% in the West, they are below 30% in Asia. In the case of Hong Kong, the public sector is only around 9% of GDP. The main difference is that transfer payments are small in the Orient.

Finally, it is uncontroversial that the five countries have unusually high savings rates. It is arguable both that the savings rates are high because of the high growth rates, and that the growth rates are high because of the high savings rates. The savings rates are almost

[6] Neither country looks back on colonial days with much pleasure. So their use of Japanese institutions was not out of sympathy, but they learned that there was a set of efficient institutions to adopt.

[7] South Korea followed a normal ISI-policy (see Section 3.1) before the military took over and made a dramatic policy change in 1961/1962, precisely at the start of the high growth. Most observers therefore ascribe the start of the high growth to the policy change, though some argue that the foundation was laid by the previous policies, and by the US reconstruction aid after World War II.

[8] This describes a situation where an increase in the chance of obtaining a modern sector job in the towns makes hidden unemployment in the countryside turn up as open unemployment in the towns.

[9] The finding of a negative correlation—first by Persson and Tabellini (1992) and Alesina and Rodrik (1992)—between the Gini and the growth rate has been widely reported. This finding, with interesting policy implications, is largely due to the Tigers.

twice as high as in other rich countries, and the savings rates were probably high even early in the growth period, where data are very thin.

3. The discussion: from outcasts to stars and the controversy

The relative status of the Tigers improved significantly from the 1970s till 1990, while the "recipe fight" started about 1990. Let us first look at the history.

3.1. Before the controversy: from outcasts to Tigers

In 1955, most development experts considered the four future Tigers as basket cases. They were as poor as the African countries and hopelessly overpopulated. South Korea was ravaged by war. Hong Kong was (and still is) an overcrowded rock, and Singapore was not much better. Taiwan had just had its population increased by a defeated army. In addition, South Korea and Taiwan were constantly threatened by invasion from communist neighbours, which include the world's most populous country, China, which was armed by the Soviet Union. Finally, the future Tigers suffered from having an *anti-developmental culture* in the view of experts in culture and development.

The four basket cases were outcasts from the club of good LDCs. In the 1960s and 1970s, the leading group of LDCs was the *non-aligned nations*. They were strongly anti-imperialist and leaning toward socialism. Three Tigers were unacceptable in the club: South Korea and Taiwan were aligned with the United States against socialist enemies. Hong Kong was a British colony. Singapore was easy to describe as a Western trading post that (successfully) set out to become the Asian home for as many multinational corporations as possible.

The non-aligned nations (as a group) pursued a family of policies known as *ISI-policies* or *Third World Socialism*; that is, *African and Arab Socialism* or *Latin American Structuralism*. The policies considered state control and economic planning, public investment and protection from the volatility of the world market, as the key elements in economic development. Self-sufficiency was set as an important goal, and foreign trade was therefore an ideal tax object. A key idea was to find policies that *combined* the best from the Western (Capitalist) and the Eastern (Communist) economic systems, which in practice often led to policies that were a compromise between the two systems.

It is easy to explain how these policies emerged in the post-colonial world during the Cold War. The *ISI-socialist* policies dominated in the LDCs, and they did appear successful in the 1960s. However, these policies had poor dynamic properties and ran into trouble in the 1970s. The troubles were a main reason for the borrowing that caused the debt crisis of 1982, which generated a decade of low growth. The ISI-policies were gradually reduced during the 1980s and 1990s, as shown in Section 5.

When the initial endowments are considered and the political isolation is added, it is understandable that the four Tigers should try something other than the ISI-strategy. Nearly all observers agree that the policies that brought success were *different* from the

ISI-policy, even when in several cases the beginning was from normal ISI-policies and that the policies were *export led*. The main exception to the agreement is Rodrik (1995, 1997), who argues that the policies of the Tigers are within the range of policies chosen by other LDCs. What is different is the *skill* with which the policies were pursued—essentially, the *governments* of the Tigers were smarter.[10]

Rodrik's hypothesis will be further discussed in Section 3.3. Its most problematic feature is that the existing data on the "quality of governments" mainly cover the 1990s and not the formative years 1950–1965. The best-researched data on government quality are the corruption data (see Table 1). South Korea and Taiwan had relatively high levels of corruption, while Singapore is as honest as most other rich countries; the other Tigers are in-between.[11] Anecdotal evidence suggests that all four Tigers were rather corrupt in the 1950s. I have found no reference to the high quality of Tiger governments from before 1980.[12]

3.2. Success discovered

Considering the growth data in the clear light of hindsight, it should have been obvious that something noteworthy was happening in the Tiger countries as early as 1970. However, this was the heyday of the new left in the rich countries and the ISI-socialist policies in the poor countries.

The first Western economists to comment on the miracle were trade-oriented development researchers such as Bela Balassa, Anne O. Krueger and Jagdish N. Bhagwati. They suggested that the export-led growth strategy of the Tigers and a few other countries performed better than the ISI-strategy. This led to an NBER research project "Foreign Trade Regimes and Economic Development" that resulted in a dozen books that included detailed country comparisons. The study was directed by Krueger and Bhagwati and ran from the early till the late 1970s. The Korea volume is by Frank et al. (1975). See also Krueger (1978).

In the mid-1980s, the World Bank began to advocate more *market-friendly* policies based on the experience of the Tigers and other evidence in the NBER study. Also, Anne O. Krueger became Chief Economist of the Bank in the mid-1980s. The Bank and the International Monetary Fund developed *Structural Adjustment (SA) Programs* to move countries from the (failed) ISI-socialist over-regulated situation and closer to the market. This policy was not successful in all cases, but future economic historians will probably agree that it was an improvement in most cases.[13]

[10] The term "government" refers to "government and administration" and includes the bureaucracy.

[11] South Korea has more than 1 point (on the 10-point scale) more corruption than the average country at its income level, so it was probably been rather typical when its high growth started.

[12] It should be mentioned that few Koreans and Taiwanese received higher education during the Japanese occupation (which ended in 1945). Both countries initiated ambitious programs of education as soon as they could, but such programs have long lags. It was only in the late 1960s that the two countries started to stand out as particularly well-educated. Also, neither Hong Kong nor Singapore seems to have had unusually well-educated populations at the outset of their growth.

[13] I have surveyed the *structural adjustment* literature in Paldam (2000). Many programs were never implemented, as they were defeated by domestic coalitions of stakeholders.

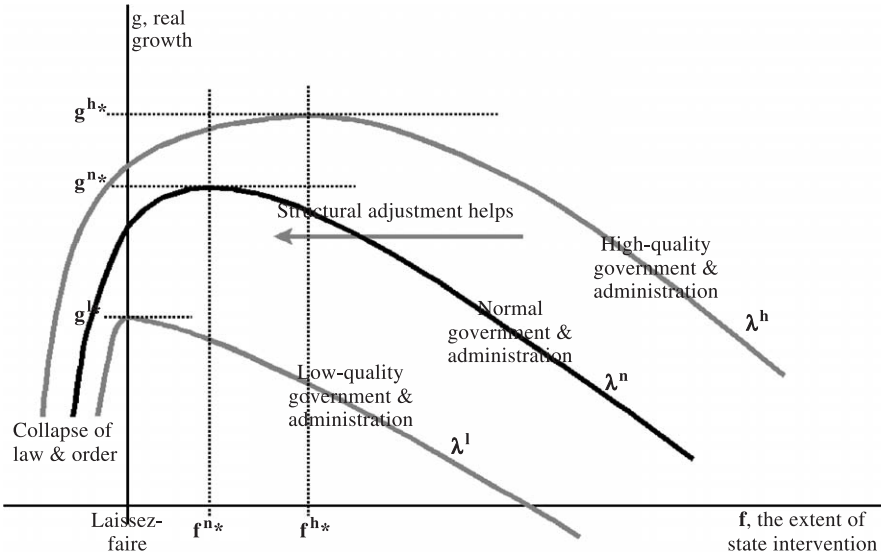


Fig. 1. The relation, λ, between intervention and economic growth in economic theory.

It is important to note that the SA-policies and the recommendations of looking at the Tigers for role models came both from mainstream development experts and from more radical liberals as well (e.g., Lal, 1994). They agreed upon the following points:

(L1) Many LDCs had moved too far away from the market.
(L2) Tigers were closer to the market than most LDCs and this was one reason for their success.

These points can be developed into much more radical advice. Some did make such advice, but most only recommended a step toward more liberal policies.

3.3. Growth as a function of the amount of public intervention: some economic theory

Growth, g, is likely to be a function, λ, of the amount of economic intervention, f, and the quality of the government as shown on Fig. 1. Laissez faire, $f = 0$, is the situation where the state provides law and order and nothing else. For $f < 0$, even law and order is not provided.

There are *market failures* and *government failures*. By definition, high-quality governments are good at reducing market failure without creating government failure. Low-quality governments have the reverse characteristics. For a given government quality, there is thus an optimal level of economic intervention.[14] Economic theory predicts that the curve

[14] I thus assume that there is an expansion path for regulation where the government first "corrects" the biggest market faults, and then turns to gradually less and less important faults, while creating more government faults. The ability (quality) of the government determines this expansion path as drawn.

connecting economic growth to the extent of intervention is hump shaped as drawn in Fig. 1. To the left of the hump, there is too little intervention and to the right there is too much.

The higher the quality of the government, the more successful the interventions, so the larger is the f^*-point of optimal interventions.[15] Also, the growth gain is larger. The quality of government also applies to the ability to provide law and order. We have included a government that has such a low quality that it is unable to improve upon laissez faire. The figure illustrates the Rodrik hypothesis, where the outcome depends upon government quality.

Hopefully, the form of the curves is uncontroversial. The curves can easily be made more complex by adding more variables and dynamics, but Fig. 1 is a useful static first approximation. Unfortunately, the curves are difficult to estimate. Many have hunches about them and these feelings have a strong ideological factor. People on the *left* believe that the hump is high and that f^* is large even for fairly low-quality governments. People on the *right* believe the opposite. The f^*-point of optimal intervention is a maximum, so the λ-curve is flat around f^*. It does not matter whether a government finds the exact location of f^*, as long as it is in the vicinity. Only if f is far from f^*—or if law and order collapses—does the level of regulation becomes a serious issue.

The economic freedom index (to be discussed) is a tool for estimating the λ-relation, by providing a series, $\varphi \approx -f$, for the extent of regulation. The claim of Lawson et al. (1996) is that the λ-curve has a negative slope for most of the observable range (see Section 4.4). Other writers (e.g., De Haan and Sturm, 2000) have shown that the relation lacks robustness. This is probably due to the fact that they treat the λ-relation as linear. New estimates taking account of the curvature as shown in Fig. 1 are presented in Paldam and Würtz (2003).

3.4. The revisionists and the controversy dealing with three of the five Tigers

In the late 1980s, a group of scholars known broadly as the revisionists started to tell Tiger stories that differed from those of the liberals: Chalmers Johnson (1982, 1995) on Japan, Alice Amsten (1989) on South Korea, Robert Wade (1990) on Taiwan—see also Stephen Haggard (1990). Around 1992, the controversy was in full bloom.[16] The key points of the revisionists were:

(R1) Three Tigers—Japan, Taiwan and (especially) South Korea—were far from laissez faire.
(R2) Even if these had small states, governments intervened considerably in the economy.

This is sometimes expressed as the ideal of a *small but active state*, as endorsed by the World Bank (1997). The revisionist points (R1) and (R2) can be true at the same time as

[15] *Optimality* is defined relative to the famous although mythological benevolent and omniscient dictator.

[16] The revisionists are a motley group, as are the liberals. Singh (1997) provides a nice summary of the discussion seen from the revisionist point of view, while Krueger (1995) is one of the best surveys from the liberal side. In the two groups, the average "liberal" is to the "right" of the average "revisionist," so there is some traditional right-side/left-side politics involved as well. However, the groups seem to overlap politically, and I have tried to disregard the extremes.

Table 2
Controversial points in the Tiger debates

Name	Content	Liberals	Revisionists
Selectivity	Of what type were most state interventions in Tigers?	Broad	Selective
Role of public investment and industrial policy	Was state support essential for starting the more successful industries in the Tiger countries? PS: State investment banks. The HCI-drive[a] in Korea	Unimportant, less than other LDCs	Important, states picked winners
Role of trade restrictions	How regulated were imports?	Less than in most LDCs	Much and important
Role of central planning	How important was the State Planning Boards: MITI and similar organs in South Korea and Taiwan?	Only for sound macro policies	Crucial and strong steering

[a] HCI means heavy and chemical industry. The HCI-drive was the policy pursued to acquire these industries.

both liberal points (L1) and (L2)—though most of the debate rejects such a tame possibility. What is used for comparison is crucial, and there is a large gap between a laissez-faire policy and the policy of, say, India or Tanzania. There is substantial scope for a set of Tiger-policies in that gap. It is hard to imagine that the best policies are outside the gap.

The controversy becomes more heated when the revisionists go further and claim that the success of the Tigers is due to the interventionist policies of the governments, and then turn to the LDCs and say: "You can learn to intervene more, and more selectively from the Tigers."[17] Also, the controversies have branched out. Table 2 lists some of the most debated issues. These issues are well suited for prolonged controversy as data are hard to find, so the debaters have to apply judgement.

The selectivity debate hinges on the definition of selectivity: A key example is the strong early push to generate exports in Korea in the 1960s. A main instrument was a restriction forbidding banks to lend to firms that did not export. This led some firms to obtain loans and others not to, and so some call it selective. Others argue that this was a broad intervention, as the rule was general.

The fraction of public relative to private investment was low in the Tiger economies compared with other LDCs, but there were (still are) state investment banks in two of the Tiger economies and also other state-owned enterprises (SOEs).[18]

[17] Also, of course, it gives spice to the discussion when Wade (1994) claims that what the story of the Tigers really shows is that the Mercantilists were right, and that Adam Smith gave economics a wrong turn. Similarly controversial is Amsden's claim that the Korean planners systematically set "prices wrong" to steer the economy—critics such as Page (1994) term this "mysticism."

[18] See World Bank (1995). The tables cover 40 countries from 1978 to 1991, including South Korea and Hong Kong. The SOEs account for 7–10% of production in the two countries. This is 50% less than in low-income countries, but typical for middle-income countries. However, the SOEs have only 2–3% of total employment. In the average LDC, the SOEs share of employment is greater than the share of production.

A proper test would be to study whether an unrepresentatively large fraction of the successful firms were started by the public sector in any of the three countries. This has proved hard to establish.

The story of the HCI-drive is that Korea made a large effort to build a military–industrial complex after the defeat of its main ally, the USA, in Vietnam. The costs were difficult to absorb and led to a debt crisis—when countries are threatened they do desperate things. The Korean debt crisis was solved after a few years, and most of the HCI-industries are still running.

The trade restriction story is once again complex, and measurement is hard to come by, even when the Japanese discussion has been going on for almost 50 years. However, it is clear that the countries have exported a lot and imported much as well—though only South Korea developed a major debt burden. They do have higher trade shares than most LDCs have even early in their development.

The story of MITI and its sister planning institutions is the most difficult of all to resolve.[19] The three countries have planning of the French *indicative* type, where business and government meet and discuss—and no doubt some arms are twisted. After the meetings, all participants report that substantive agreements have been reached. It has proved difficult to determine who controlled whom, if it matters. It is hard to see how writers such as Ho (1987) and Wade (1990) can describe planning in the same country (Taiwan) at the same time in such different ways.

After the controversies were well under way, the Japanese government gave the World Bank a donation to make a special study. The result was the "Miracle Book" (World Bank, 1993). This was a typical compromise study, but it did conclude that a main reason why the Tigers and other growth economies in East Asia succeeded was that they followed market-friendly policies. Later, the revisionists replied (e.g., Fishlow et al., 1994), as did the leader of the Bank team responded (Page, 1994). The discussion then continued (e.g., Part III in Emmerij, 1997; Adelman, 2001).

It seems that nobody has disputed that Hong Kong has followed policies that are as close to laissez faire as any country in the world, and that Singapore is close (e.g., Findlay and Wellisz, 1993; Lui, 1997). The revisionists thus start by throwing away two of the four to five data points. The two disregarded Tigers are not only the most successful, but also the two most at odds with the revisionist story.

3.5. Turning the discussion into resolvable issues: the underlying Big Question

At the bottom of the Tiger controversies is the Big Question: How large should the role of the state be in economic development? The corresponding question for the Tiger countries is: How important has the state been in these countries in furthering

[19] MITI is the Ministry of Foreign Trade and Industry. The State Planning Board in Korea is similarly organized, while the Taiwanese organ is the Industrial Development Bureau under the prime minister. The organization of planning in the three countries has changed over the years. Johnson (1982) provides a detailed history of MITI. It employs some of the most brilliant young graduates from the best Japanese universities, and they retire early to good jobs in the private sector. It is interesting to contemplate how this should be interpreted. For elaboration on the system, see Katayama (2000).

Table 3
Three questions to pose to a measure, f, of the extent of state intervention

Q1	Were the f's of the Tigers small relative to other LDCs, at the take off (around 1960) and later?
Q2	How do the f's of the Tigers look relative to the Western countries?
Q2	Can the success of the Tigers be explained by unusual values of f's?

their great success? The question has strong ideological overtones and is not an easy one to address.[20]

The Tiger discussions are mainly qualitative and historical. If the policies of a group of countries are researched over half a century, anyone can find policies to like, and then one can say that these policies are the key. The controversies therefore demonstrate that *selective storytelling* seasoned with *judgement* is a "method" that can propagate controversies for decades—cementing ideologically based beliefs.

Resolving the controversy requires applying the same aggregate macro *standard* and inclusion of all relevant cases in time and space. It is crucial to find *non-selective measures that allow comparisons* with other countries. We would ideally want a measure of the extent of state intervention, f, to answer the three questions listed in Table 3.

Even if we had the true f and answers to the three questions, this would not solve all the Tiger controversies, but the scope of controversy would be reduced. The rest of the paper argues that we actually have data, $-\varphi \approx f$, for enough countries and for most of the period we want. With a minimum amount of manipulation these data provide amazingly clear answers to the questions.[21]

4. The economic freedom index

The economic freedom index is a major data collection project housed by the Fraser Institute. The first major publication of the project is Lawson et al. (1996). It lists the academic group, describes the compilation method and presents data and empirical results. Gwartney and Lawson (2003) discuss the logic of the construction.

The concept of *economic freedom* used is the one the economic profession associates with the Chicago School. One may see the effort as one where a particular "church" sends out a group of its most devoted members on a worldwide search for virtue and sin. It is preferable that the searchers for sin are zealots, as they are then likely to search particularly hard. However, zealots may confuse ends and means as will be discussed in Section 4.3.

[20] Another attempt to answer the "big question" considers the sign to the share of the public sector in cross-country growth regressions. Barro (1997) shows that the sign is negative, though it is positive for certain public expenditures, notably education and health. This resulted in extensive discussion when it appeared that the negativity of the coefficient lacks robustness, even when it is negative in most specifications of the model.

[21] As stated in the acknowledgments, I have done my utmost to manipulate the data as little as possible. The reader will have no trouble reproducing everything.

4.1. Robustness of measurement

Formally, we can write the index as: $\varphi = \varphi(i,E)$, where i is the country and E is the effort made. We would like the index to be robust in the following sense. Imagine that N groups set out independently to measure economic freedom and reached the measures: $\varphi_j(i,E_j)$, where $j = 1, \ldots, N$. Economic freedom is a robust concept if the indices $\varphi_1, \ldots, \varphi_j, \ldots, \varphi_N$ are highly correlated.

The measurement error $\varepsilon(i,E)$ is the expected standard deviation of $\varphi_j(i,E)$. This can be estimated if a sample of φ's is considered. In addition, it can be assessed subjectively by those actually participating in the compilation process, i.e., those who have tried to fill in the data forms used. I have talked to people who have collected the data for a country, and it seems that the data they were asked to collect could be assessed fairly objectively.

Only a few competing freedom indexes have been compiled. They are highly correlated. Also, most (but not all) components of the φ-index are strongly correlated. If a country is free-market-oriented in one field, it also tends to be in other fields. Thus, the measure is fairly robust to moderate changes in weights of the components.

Logically, $\partial\varepsilon/\partial E < 0$, and $\partial\varepsilon/\partial E \to 0$ if E increases. The larger the effort, the smaller the measurement error, and the marginal improvement of the index decreases with effort. It is clear that the effort one can put into data collection on a world scale is small relative to the job at hand. So, there is a considerable measurement error. If I were made to guess, I would say that $0.25 < \varepsilon < 0.5$. Hence, if two countries differ by less than 1/2 point, the difference should be disregarded, but differences of more than 1 point are probably significant.[22]

4.2. Bias 1: the missing micro problem

The φ-index is basically an aggregation of available macro evidence. It is possible that the pattern found might be different if micro evidence could be added.

Imagine a measure $\Phi(i,E)$ giving the number of *constraining regulations encountered per day by the average citizen of the country*. It would reflect the size of the body of laws, the enforcement effort made and the quality of the bureaucracies. To collect a credible Φ-index for a country would be a major effort at the micro level, and it is surely out of the question to do so for 100 countries. A simple proxy is the body of law in force in each country, as measured in kilometres of lines of law script.

Free market advocates often claim that Φ is (far) too high and steadily growing in the West. In addition, it is surely much higher in most DCs than in most LDCs—especially in the African countries. Hence, I venture a guess: The φ-index and the Φ-index are likely to be negatively correlated. Also, if a measure of Φ had been available, it should have had a considerable weight in the true φ-index. This could be taken to indicate that $\varphi(i,E)$ is

[22] Another type of privately collected socio-institutional data consists of the *corruption perception* indices. Here, a total of 17 attempts of independent measurement are made. Corruption is differently defined in the indices, and so are the methods of measurement. Nevertheless, the average measures are remarkably robust. When they are scaled like φ, the standard error is less than 0.5. See Transparency International (Section 7).

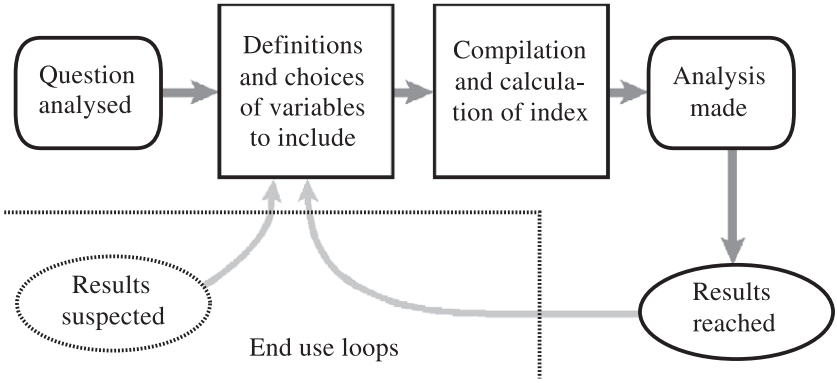


Fig. 2. Illustrating the end use loop.

sensitive to E, even to the extent that the *main structure in the index may change if E could be greatly increased*.

Two *counter arguments* can be given: (i) The index does give a weight to the size of the public share. Hence, to the extent that Φ is proportional to the share of the public sector the micro problem is accounted for. (ii) The φ-index rewards *law and order* and punishes *arbitrary regulation*. Regulation that supports normal business activities and defines and protects property rights increases φ.

We can compare Somalia and Denmark. In the φ-index, Denmark scores much higher than Somalia. A Φ-index would show the reverse order, as the legal system Somalia had (and still has) largely ceased.[23] The country has very low values in the φ-index because normal lawful business is largely impossible. The welfare states of northwest Europe do obtain low scores for the component of the index measuring the size of the public sector but high scores on property rights and other aspects of law and order. They also have free trade and low inflation. So, on balance, they reach fairly high φ-scores. Is the *non-government* country of Somalia or the *big-government* country of Denmark closest to the Chicago Ideal? In the data Denmark is four times closer. Is this reasonable or perhaps excessive?

4.3. Bias 2: end use loops

Economic aggregates are constructed with a use in mind. Sometimes, an aggregate is constructed for several purposes, and additional uses often come up once the aggregate has been compiled. When measures constructed for a purpose are used for that purpose, they may have the *end use loop* problem illustrated by Fig. 2.

We want the index constructed to be useful to analyze the question at hand, but we do not want it to be constructed to give the result desired by the constructors. The zealots, who have compiled the φ-index, want their index to be a useful instrument for answering

[23] In the terms of Mancur Olson, business in Somalia suffers from a surplus of roving bandits who have depleted the common pool of business in the country. In Fig. 1, Somalia is at the extreme left where law and order have collapsed. Somalia was the country with least economic freedom in 1995.

the question: Is laissez faire a superior policy? However, they also want their index to answer this question in the affirmative.

This raises a moral hazard question: Is it possible that one or both of the end use loops shown in Fig. 2 have been worked into the construction of the index? That is, did the very knowledgeable group of academics who constructed the index have the eventual result in mind? Also, is it possible that the results reached have influenced the development of the methods over the years?

I have no inside knowledge of the way the design of the index was reached, and we are dealing with a group of imminent scholars who know the problems described. They would not risk having their project accused of manipulation, but they are zealots, and moral hazard is a problem even for the most honest. However, once the method has been released, it is out of their control, and 100 data points times 7 spread over 30 years are hard to manipulate. My assessment is thus that the data may have small biases due to end use loops, but are likely to be well within the measurement error.

4.4. The structure of the economic freedom data

Two points should be made before we turn to empirics: (i) All φ-data used from now are from the 2001 posting—at the netsite cited and in Lawson et al. (2001, downloadable from the netsite; see Section 7)—of the full data set. (ii) Each country is taken as an independent data generator. Therefore, all averages are unweighted.

Table 4 gives a quick overview of the structure of the economic freedom data. Later follow graphs of their distribution, trends over the sample period and so on. It is hopefully clear from the table that most country-groups have smaller standard deviations within the groups than between the groups, so the countries fall into reasonably well-defined groups—often with clear trends.

Table 4
The main structure in the economic freedom index in 1970 and 1999

	1970			1999			Trend
	Number	Average	S.D.	Number	Average	S.D.	
Western	22	7.21	1.01	22	8.13	0.42	Average
Communist/Post	0	1.5	–	14	5.77	1.17	Unclear
Arab	3	4.71	0.69	10	6.22	1.61	Unclear
Latin America	10	5.77	1.58	20	6.79	0.89	Clear
Oriental including Tigers	9	6.78	1.39	11	6.92	2	Unclear
Indian subcontinent	2	3.83	0.4	5	5.26	0.38	Clear
Sub-Sahara Africa	7	4.9	1.37	28	5.09	1.1	Clear
Residual	4	5.02	1.5	13	6.12	0.88	Problematic
All included	57	6.23	1.6	123	6.39	1.51	Unclear
For the 57				57	7.08	1.4	Average

S.D. is standard deviation. Communist/Post (Communist) countries are in Europe. A few numbers given for 1975 show that a traditional Communist country had $\varphi = 1.5$. The residual group are non-Arab countries in the Middle East, non-Latin countries within Latin America and so on. They are problematic to aggregate. Trends are termed *clear* if the average of countries covered for all years do not deviate more than 0.5 from the average of all countries included in the group. Unclear or problematic groups are shaded.

Table 5
The correlations between the freedom index for the years covered

	1970	1975	1980	1985	1990	1995	1999
1975	0.87	–					
1980	0.84	0.82	–				
1985	0.79	0.72	0.91	–			
1990	0.77	0.71	0.88	0.90	–		
1995	0.63	0.60	0.72	0.73	0.86	–	
1999	0.67	0.60	0.68	0.66	0.78	0.90	–
Number	57	83	108	112	116	122	123

Each autocorrelation is calculated for the maximum number of countries possible. The line "number" is the number of countries covered by the index in the year mentioned.

The most regulated countries—the traditional Communist ones—had a φ-score of about 1.5. Western countries are in the range from 7 to 8. The poor countries of Africa and the Indian Subcontinent are in the range from 4 to 5. At the bottom line, it appears that φ has increased with 0.85 points for the 57 countries with data in both ends of the range.

An important feature of the index is that most countries have a reasonably stable relative position in the pattern. If a country had a relatively low level at the start, it tends to be relatively low at the end, too. Table 5 shows strong autocorrelation in the φ-scores.

Lawson et al. (1996) and all later publications on the index demonstrate that the φ-index proves three points:[24]

(p1) Economic freedom gives higher growth.
(p2) Economic freedom gives a higher GDP.
(p3) Many other nice things happen once you have economic freedom.

With such strong autocorrelation as shown in Table 5, (p1) causes (p2), and then (p2) causes (p3). Rich countries have low infant mortality, low corruption, a more equal income distribution and more democracy.[25] They even have more happiness.[26]

5. The positions of the Tigers in the pattern

5.1. The distribution of the economic freedom scores

Figs. 3 and 4 show the distribution of the φ-score in 1975 and 1999. The distributions look alike, but more countries have been added in 1999—as seen in Table 5. The added countries are LDCs, while the rich Western countries included are the same.

[24] The proofs supplied are painted with a broad brush and have been disputed as mentioned in Section 2.3.
[25] In Paldam (2002), I show a strong connection between the φ-index and the corruption index. The more economic freedom, the less is corruption, but the significance disappears when the relation is controlled for income.
[26] See Kuznets (1966), Chenery and Syrquin (1975), Paldam (2002) and Frey and Stutzer (2002).

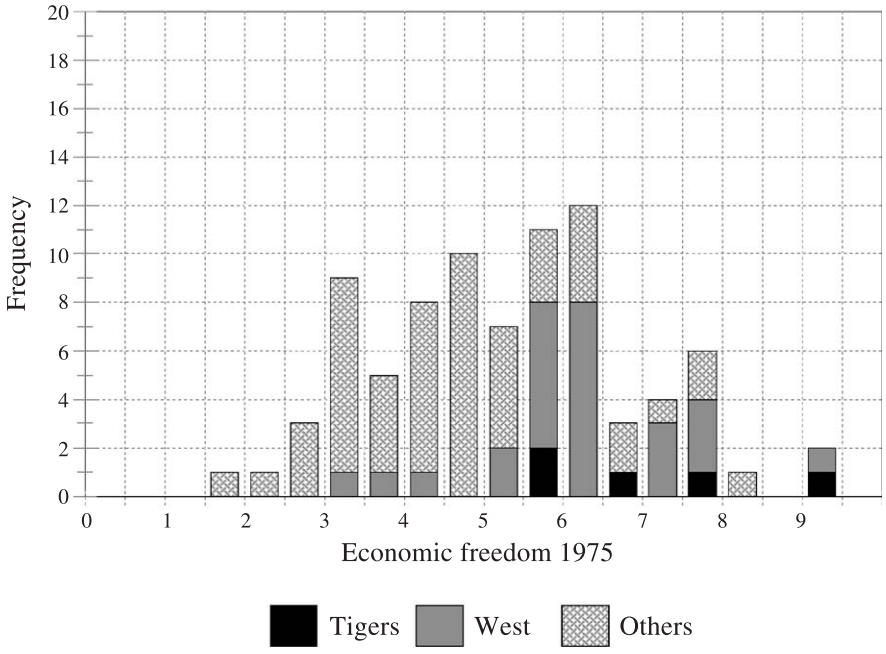


Fig. 3. The distribution of the 83 scores of the economic freedom index 1975.

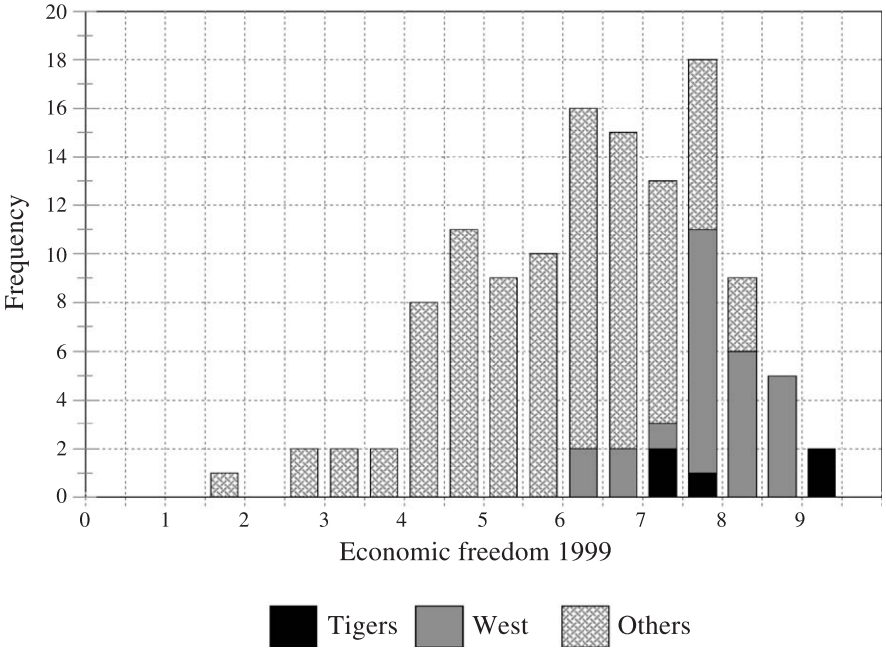


Fig. 4. The distribution of the 123 scores of the economic freedom index 1999.

The Tigers are to the right in both figures. The city-states are extreme in the distributions. Korea, Taiwan and Japan are not extreme points, but if the rich countries of the West are disregarded, the difference becomes larger.

Fig. 5 compares the four Tigers with the three groups of LDCs, where the trends are clear (see Table 4). The groups are sub-Sahara Africa without South Africa, the Indian subcontinent and Latin America. The comparison was done mechanically by a two-step procedure: (1) All missing observations were filled out by using the trend in the countries of the group with no missing observations to project the closest available observation for each country. (2) The histogram was then calculated and expanded proportionally to the number of countries in each group (see legend to figure). Note that because we only look at the groups where the trend is clear, this gives precisely the same result (qualitatively) as we would obtain if we had considered only the countries where data are available for all years.

There is only a small overlap between the poor countries of Africa and the Indian subcontinent and the Tigers, and their averages differ by 3–3.5 points on the φ-scale. However, the Latin American middle-income countries have some overlapping ranges with the Tigers. In addition, there is a puzzling question: Why have the four Tigers done (almost) equally well when they differ so much on the φ-scale?

5.2. Comparing Tigers with the main groups of countries

Fig. 6 shows the development over time of the φ-score of all five Tigers. They are always in the same order with Hong Kong at the top and South Korea at the bottom. Note

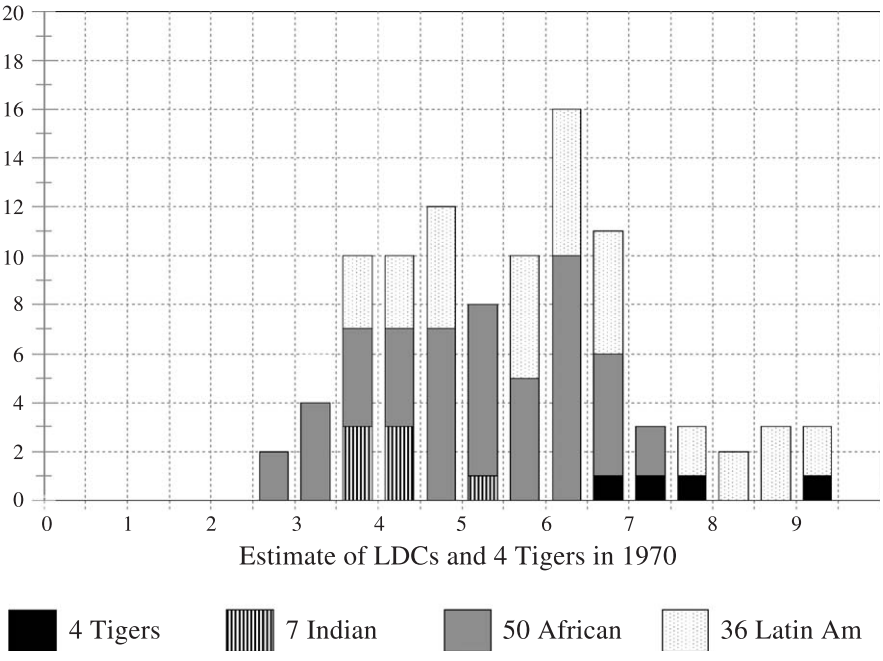


Fig. 5. Comparison with estimated distribution of 93 LCDs and the four Tigers in 1970.

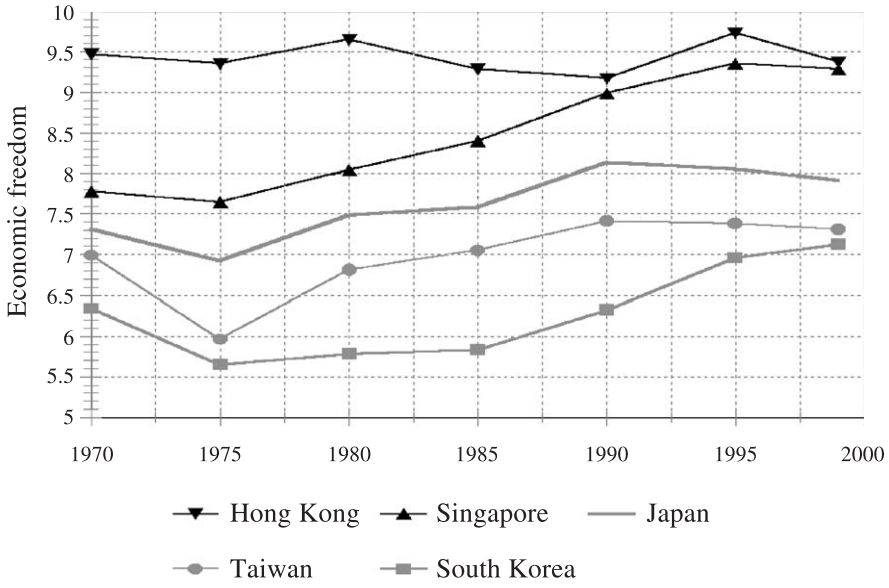


Fig. 6. Path of economic freedom (φ) for the five Tigers.

that Japan is always the middle country. Between the two extreme Tigers is a *gap* of no less than 3.1 points on average. Section 5.5 considers the countries in the Tiger gap.

From Fig. 6, we note that Hong Kong is so close to laissez faire that the curve is flat, and that the other Tigers catch up. While Singapore is almost as liberal as Hong Kong at the end, it starts in the middle of the gap. Fig. 7 shows that the average of the five Tigers is at the top of the figure. As a whole, the group of Tigers is the most liberal group of countries.

Fig. 7 shows the development over time of the φ-index from its start. An important point to note is that most of the curves are rather parallel as also shown in Table 5. Only the curves for *Other Orient* and *Communist/Post* have weighting problems in the sense that they would have looked different if we had considered only the countries where data are available for all years (see Table 4). Nothing in the figure warns us against taking the pattern found on Fig. 5 back to 1960.

The Tigers are well above the LDCs—in fact, the difference between the Tigers and Africa and the Indian subcontinent is 3–4 points on the scale. Even if there is an overlap between Tigers and the Latin American countries, the averages of the groups still differ by 2–3 points. The West and the Tigers have strikingly similar curves, with the Tigers slightly above the West.

The φ-index decreased from 1970 to 1975. The same probably occurred all the way from 1960, when many of the new countries after the big wave of decolonization moved into ISI-socialism. In the West, this was the period of large tax increases when welfare states were being rapidly built. Since 1975, economic freedom has turned upward. The turn was already evident in the Tigers and the West in 1975, but everywhere else, it occurred later. By 1985, a wave of liberalization is strongly shown in the data. In Latin America, for instance, the rise of the index in the average country is more than 2 points.

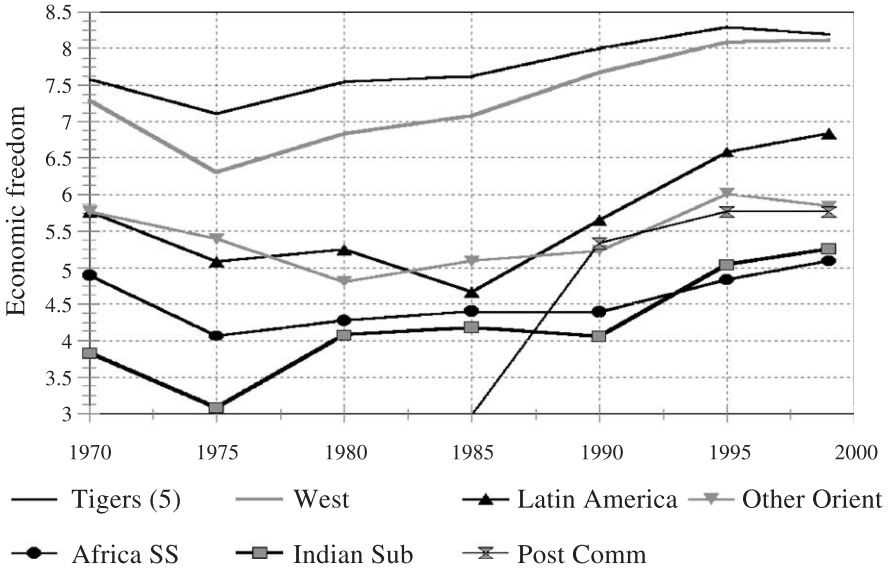


Fig. 7. Path of the average φ-index for the major country groups.

Traditional communist countries had a score of 1.5, but the post-communist countries turn up in the picture in 1985 when they were still communist. It is also interesting that, while φ increases everywhere else, it decreases in Asia including the Tigers in the last 4 years. This is probably due to the sharp *Asian Crisis* that lasted five to six quarters from late 1997 to early 1999.

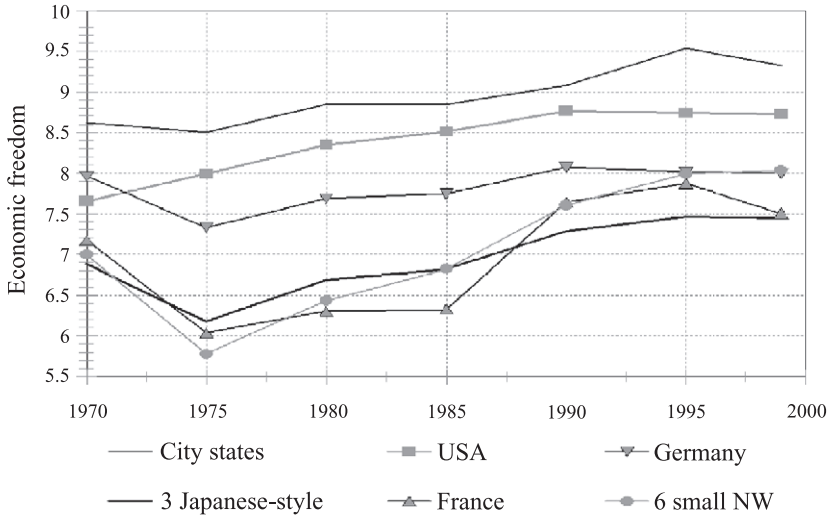
As mentioned in Section 3.1, it was—for long—the expressed goal of the dominating group of non-aligned nations to find policies between the West and the communist countries. The pattern in Table 4 and Fig. 6 shows that the main groups of LDCs succeeded in doing precisely that. The Tigers, in contrast, made another choice as claimed by the liberals.

5.3. Comparing Tigers and Western countries

(Figs. 3, 4 and 6) show that the Tigers are more liberal than the West. Fig. 8 shows this is due to the two city-states, which are closer to laissez faire than everybody else. Then follow the USA and Germany. The three Japanese-style economies are more in the middle or low end of the distribution (of the Western countries).[27] They are much like France and the small welfare states in northwest Europe: the Scandinavian countries and the Netherlands.

It is reassuring that the West European nations are a little—but not much—more regulated than the USA. Once again, this is in accordance with expressed policies.

[27] If the 22 Western countries and the 4 Tigers and Japan are sorted by the sum of the φ's for all seven observations, South Korea is no. 4, Taiwan is no. 10, Japan is no. 17, Singapore no. 25 and Hong Kong no. 27 of the 27 countries. Countries no. 23, 24 and 26 are Switzerland, USA and Luxembourg, respectively.



Note: The 6 *small NW* countries are: Denmark, Finland, Iceland, The Netherlands, Norway and Sweden.

Fig. 8. Path of the φ-index for the five Tigers and selected Western countries compared.

The fact that the Japanese-style Tigers have a level of the φ-index much like the West European countries and not like the LDCs is a strong comment to the Tiger controversies. So is the finding that the two city-states have more economic freedom than the USA.

5.4. Comparing the three Japanese-style Tigers with France and small NW European countries

The three lines for the Japanese-style Tigers, France and the six small NW European welfare states in Fig. 7 are all so close together and frequently intersecting that it is clear that they are within the measurement error of each other. However, we suspect that the pattern of regulation is different—especially between the Asian and Western countries.

Table 6 shows the detailed comparisons. It appears that the West has the largest public sectors, while the Tigers score highly here. However, there are some restrictions on property rights and in financial markets in the Tiger countries. The table thus confirms the story already told: The Western countries obtain low scores for the size of the public sector, but slightly higher scores in most other fields, so that the countries end up with the same average score as the three Japanese-style Tigers.

Comparing the rows by calculating their correlation matrix gives a clear pattern. The Western countries have almost the same pattern of regulation (cor $\approx$ 0.9), and the Japanese-style Tigers are reasonably alike too (cor $\approx$ 0.7). The patterns of regulation were rather different between the two groups in 1970 (cor $\approx$ 0.1), but converged in 1999 (cor $\approx$ 0.5). Even if the Tigers had the same level of regulation as the West when they took off, the regulations were applied with a different pattern. As they became rich also, the pattern adjusted to that of the West.

Table 6
Detailed comparison of five countries

	Japanese-style Tigers						West			
	Japan		South Korea		Taiwan		France		Six small NW	
	1970	1999	1970	1999	1970	1999	1970	1999	1970	1999
Size of government	7.8	7.6	8.7	8.1	7.1	7.5	4.4	2.6	4.9	3.4
Structure and use of market	5.6	5.4	4.2	3.5	2.1	4.4	4.2	4.7	3.6	6
Money and price stability	8	9.2	5.9	8.9	7.2	9.6	8.2	9.4	8.7	9.4
Use of alternative currencies	7.5	10	4.8	7.5	9.9	10	5	10	6.1	10
Legal struct. and property rights	7	9.4	5.2	6.8	9.3	7.2	5.2	8.6	8.8	9.7
International exchange	7.6	6.9	7.7	7.7	8	7.4	7.9	8.2	7.3	7.8
Exchange in Financial Markets	5.6	7.3	3.9	8	4.2	6.1	7.2	8.1	6	8.9
Summary ranking	6.9	7.9	5.7	7.1	6	7.3	6	7.5	7	8

Cells more than 0.6, 1.3 and 2.0 points from column average are lightly, moderately and heavily shaded, respectively.

It is debatable how to interpret the different pattern of regulation in 1970 (and no doubt before), as the pattern in poor rural and rich industrial societies has to differ. The key observation is thus that the level was similar and that the pattern has converged.

5.5. Which countries are in the Tiger gap?

Finally, we turn to the discussion of question (3) from Table 3. Is it possible to explain the success of the Tigers by deviations of their φ's from the general pattern?

A simple way to see how much the economic freedom of the Tigers can explain is to see how many poor countries we find in the gap between South Korea and Hong Kong. The other three Tigers should be excluded as they are in the gap by definition, so there are only 118 countries that can be inside or outside the gap—some of these are uninteresting as they are as rich as the Tigers.

The counting follows a three-step procedure: (S1) First, the excess of freedom points over South Korea has been calculated.[28] Countries are deleted if either (S2) the sum for all available observations is below -0.5 or (S3) the score is below -0.5 for any of the (at most 7) individual observations for each country. The results are given in Table 7.

Most other rich countries are in the gap. This applies to 18 of the 26 Western countries and to three of the five Arab oil countries included. The remaining five Arab countries are far below the gap. So (118 – 26 – 5=) 87 LDCs are covered by the index. Of these 87 countries, six are in the gap. Two are mini-Tigers, who started a little later than the Tigers but are doing well. The Latin American countries in the gap have four missing observations. Had all observations been available, one or two would probably not have passed the limit.[29]

[28] Hong Kong has the highest score of the 123 countries covered, so the binding limit of the gap is to be above South Korea. Six Western countries included have an average score within 0.5 from South Korea.

[29] Also, I believe that the high score for Uruguay is a mistake.

Table 7
Countries in the Tiger gap: 1970–1999 (see definition of gap in the text)

Group	Covered	In gap	Countries (missing observations)
Western	26	18	Not listed
Arab oil country	5	3	United Arab Emirates (3), Oman (2), Bahrain (2)
Arab non-oil	5	0	
Oriental	6	2	Thailand, Malaysia
Residual	9	0	
Post-communist	14	0	Note
Latin American	20	4	Paraguay (2), Uruguay (1), Costa Rica, Panama (1)
Indian subcontinent	5	0	
African	28	0	
Sum from the last subgroup	87	6	

One post-communist country (Estonia) has crossed into the gap and another (Hungary) is close.

About 75 countries are not covered, all of which are LDCs, mostly in the low-income end, where no countries are in the gap anyway. So, out of the 160 poor to middle-income countries, probably no more than half a dozen would have been in the Tiger gap if all data had been available. These six countries would have been in the higher end of the range. Six out of 160 countries are below a 5% level of uncertainty, but it still shows that the recipe of *market friendliness* is not certain to work. In the latest posting, no less than 12 Latin American countries and a couple of other middle-income countries have moved into the gap. So, perhaps a better data set will be available in another decade to determine the power of economic freedom.

If we return to Fig. 1, it is perhaps understandable that the Tigers can have as different φ-scores as observed if (i) the $g = \lambda(\varphi)$ relation is flat around the optimum f^* and if (ii) the optimum is somewhere in the Tiger-gap. But then we have to say that the curve falls rapidly, for φ-scores just a little higher than the one of South Korea. This seems unreasonable, but more variables are surely involved (such as the quality of governments). In short, the deviating φ-score of the Tigers can only be one explanation of the success of these countries.

The excess growth of Tigers compared with other LDCs was about 5%. Estimates in Paldam and Würtz (2003) suggest that almost half of the excess growth can be explained by the higher economic freedom of the Tigers.

6. Conclusion: a clear picture

I have applied the Fraser Institute economic freedom index to consider one of the largest controversies in economic development: the importance of the state for the rapid economic growth of the Asian Tigers. The index starts in 1970, but it shows a clear picture that is so stable over the next three decades that it must have been rather similar at least a decade before. The data are likely to have various biases, but they have to be unreasonably large before a substantially different picture emerges. The picture is as follows.

The two city-states of Hong Kong and Singapore are, by necessity, trading nations. Consequently, they have demonstratively protected property rights and the freedom of trade. Therefore, they are unusually close to laissez faire. The other two Tigers, South Korea and Taiwan, have followed a less extreme Japanese-style model.

Compared with the countries of the West, the two city-states are extremely liberal (in the European sense), while the Japanese-style Tigers are rather similar to Western Europe as regards the *level* of economic freedom. However, Tigers have smaller public sectors and slightly higher levels of public interventions in other fields. If the reader agrees that the Netherlands and France are relatively liberal on a world scale, so are Taiwan and South Korea. The poor LDCs are much less liberal. We conclude that the four Tigers *did* deviate substantially when their phenomenal growth started. The data discussed therefore make it easy to argue that the *market friendliness* of the four Tigers and Japan has contributed to their unusually fine economic performance.

Consequently, the data provides little support for the claim that the Tiger countries can thank their industrial policy activism for their success. They have been less activist than many other countries. Also, two of the countries have not been activist at all and have done as well as the more active ones.

However, the market friendliness of the Tigers cannot be the only explanation of the success story. First, the level of economic freedom of the two groups of Tigers differs. Second, if data for all 200 countries of the world had been available, a handful of LDCs would probably have had economic freedom in the gap between Hong Kong and South Korea throughout the period covered, without the spectacular Tiger-growth.

7. Netsources

Author ⟨http://martin.paldam.dk⟩
Fraser Institute ⟨http://www.fraserinstitute.ca⟩
Transparency International ⟨http://www.transparency.de⟩

Acknowledgements

I am grateful to the participants of the SOM conference—especially Jakob de Haan—for comments. Also, the paper was presented at the European Public Choice Meeting in Belgirate. I also want to thank Jørn Rattsø for comments. As the subject is controversial, I have made every effort to make everything as transparent and easy to check for the reader as possible. I further want to thank the two referees, who belonged to both sides in the controversy. It has been impossible for me to follow the recommendations of both. However, I have tried to indicate where the largest disagreement occurred.

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