

‘Policies for Industrial Progress’, not ‘Industry Policy’: Lessons from Southeast Asia

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(1) Introduction

Industry policy, defined as non-neutral inter-industry (and sometimes inter-firm) incentives is a contested field.

There is general agreement in the literature on factors that underpin rapid economic development.

The contestation centres on whether these general, economy-wide factors are sufficient, or whether in addition there is a role for sector-specific interventions.

Earlier literature on IS v/s EO, etc; largely settled.

Main debate now on whether there is a case for 'smart' industry policy in broadly open economies.

The arguments – dynamic externalities; learning by doing; infant industry; extra-market linkages, etc.

Drawing on the earlier Japanese and ROK experiences, and literature.

Amsden, Chang, etc. See also Lin's attempted synthesis.

Szirmai et al the most comprehensive recent study.

Theory provides little guidance: starting point is that, with undistorted prices, \$1 of value added provides the same social welfare across sectors, and between import-competing and exporting sectors.

Our approach is deductive and inferential, choosing cases of sectoral 'success', and the role – if any – of government policies.

We choose successes since it is more elusive than failure; there are endless ways of getting things wrong!

We also highlight cases *within* countries of both success and failure, suggesting that an institutionally nuanced approach is necessary.

There are obvious sample selection biases – small sample, successes, and authors' predilections.

Though there is considerable diversity among the 5 countries in terms of per capita income, size, political systems, institutional capacities, etc.

Our samples are also drawn from across the major sectors.

The Thai auto industry receives particular attention since it is arguably the most widely discussed case of successful industry policy in ASEAN.

2. Industry Policy: An Analytical Framework

Two main priors:

a) The most important determinants of sectoral growth rates are economy-wide factors. Advocates of industry policy commonly neglect this point, or at least (mistakenly) take it for granted.

b) We remain agnostic about the case for sector-specific intervention, and prefer to 'let the data speak'. Sectoral growth alone is obviously an inadequate indicator.

We do however recognize that there are market failure arguments for governments to invest in R&D. Private agents are unable to appropriate the returns from R&D investments, especially where property rights are weak and time horizons are short.

Also important to recognize that much industry policy is ‘unintended’, eg exchange rate policy, infrastructure projects, education policy.

For follower countries, at least 5 sets of factors shape industry and innovation policy and outcomes:

Openness: Most developing countries import their cutting edge technology, so openness to trade, FDI and labour is crucial.

It’s also doubtful that the earlier Japanese & ROK approaches to FDI would now be feasible, both commercially and given the international institutional architecture.

Human capital: This is central to absorbing and assimilating imported R&D. Different kinds of education matter at different stages of development.

Infrastructure and institutions: These underpin efficient, internationally-oriented businesses, including logistics, telecoms, property rights, a business-friendly environment, financial institutions, macroeconomic stability.

Commercial environment: Competition, low barriers to entry, level playing fields for all firms in an industry are all important. (LKY: 'we picked all winners!') It's not clear whether broader industrial organization structures matter.

R&D institutions: This is the formal part of government interventions. Issues include scale, funding, incentives, interaction with the private sector, sectoral composition.

All five factors generally important, and they are complementary, eg, R&D institutions operate more effectively in open economies with effective bureaucratic capabilities and strong education bases. R&D investments without these supporting factors are generally wasteful.

We largely eschew political economy factors, but they are obviously central.

Often industry policy is little more than 'protection for sale'.

Basri: 'Governments may not be good at picking winners, but losers are good at picking governments.'

3. The Thai Automotive Industry

Early History

Thailand has become the auto hub for ASEAN, with rapid growth, rising export orientation and industrial deepening.

A conventional beginning with import substitution: CBU imports banned, high and cascading tariffs on CKD's, LCRM's imposed.

See details.

Liberalization and Export Orientation

Major changes in the global industry underway during the 1980s; major growth in emerging economies, many of which were entering into RTA's.

This meant that MNE auto firms would select regional bases, and this required economies that are open and efficient, with stable policy settings.

The Thai government response was pragmatic. It began to liberalize and it did not pursue a national car project. In effect, it was the only feasible location for a SE Asian regional hub in the late 1980s. Also, it invested heavily in the Eastern Seaboard, with excellent infrastructure and flourishing industrial zones. It also had a sizeable domestic market as a springboard, particularly in commercial vehicles (and with rail transport relatively unimportant).

The One-Ton Diesel Engine

This was an early major initiative. Also pragmatic, market-conforming. Introduced in late 1970s, abandoned when not economically viable. Reintroduced in 1987 when carmakers selected Thailand as the regional base for pickup trucks, with necessary economies of scale.

The program involved progressively rising LCR's, combined with export targets. Was implemented flexibly, allowing for market downturns; also cooperation among the (Japanese) producers.

The Eco-car Project

Introduced in 2007, an attempt at industrial diversification and deepening; implementation also pragmatic and flexible. Participating companies (5 initially) enjoyed lower excise tax in exchange for meeting environmental and production targets.

Reviewing the Three Programs

See Table 1. Four general observations:

i) A consistently (relatively) liberal, stable trade and commercial environment. No national car project!

Table 1: Summary of three cases of government intervention

	LCRMs	One-ton diesel-engine projects	Eco-car project
Formulating the target	<ul style="list-style-type: none"> Existing local auto parts manufacturing 	<ul style="list-style-type: none"> The success of SNF, Siam Cement Affiliate in diesel engine used for agriculture purpose. Announce of MNE carmakers to use Thailand as an export platform 	<ul style="list-style-type: none"> The introduction of the first Asian car, Toyota Soluna.
Policy making	<ul style="list-style-type: none"> A close consultation with both carmakers and parts suppliers in designing LCRM formula. 	<ul style="list-style-type: none"> Invite potential candidates to discuss the project possibility and set up all requirements. Implement it with flexibility 	<ul style="list-style-type: none"> Close consultation with carmakers All requirements were formulated in line with the proposal by a given car maker
Economic soundness	Largest domestic demand for vehicles partly due to the relatively low cross-border protection	<ul style="list-style-type: none"> Largest domestic demand for vehicles Clear export potential 	<ul style="list-style-type: none"> Take into account the economic fundamentals (e.g. oil prices, environmental concerns) and social development (e.g. urbanization)

Source: Authors' compilation

ii) Policy approach has been pragmatic, market-conforming, consultative. Also contestable market, picking projects, sectors, not individual firms. And always more than one firm involved.

iii) All decisions based on sound economic fundamentals. Avoided great technological leaps; economies of scale could be achieved.

iv) Consistently good timing in policy decision – design or good luck?

Future Challenges

Human capital/skill constraints: Becoming more serious as the government pushes firms into more sophisticated engineering and design tasks. Several programs to increase the supply of university-trained engineers (Table 2), but severe labour shortages for semi-skilled tasks. Complicated further by prescribed minimum salaries for university graduates.

Some promising private sector initiatives, but restricted to larger firms.

Table 2

Lists of Initiatives to overcome skill gaps and labor market mismatches

The early 1990s	Chulalongkorn University established a bachelor-degree program in its automotive engineering department with support from Toyota Toyota Automotive Technological College was established
2005	Thammasat University established a curriculum in automotive and design engineering
2008-9	The Sirindhorn International Thai-German Graduate School of Engineering of King Mongkut University of Technology in North Bangkok created an automotive engineering degree with the help of GM and Ford. This is a joint program with RWTH Aachen University in Germany.
2003-5 2006-11	A skill certification system for the automotive industry was initiated Automotive Human Resources Development Program (AHRDP) was introduced to expand the supply of trainers and trained personnel in basic operations competencies based on particular areas of expertise of four Japanese firms (Toyota: Toyota Production System, Honda: Mold and Die production; Nissan: Skill certification e.g. metalworking, electronics, and hydraulics; and Denso: Mind management and manufacturing skill)
2007	Joint master degree program by National Science Technology Development Agency (NSTDA), Tokyo Institute of Technology (TIT) and King Mongkut's Institute of Technology Ladkrabang (KMITL)
2010	Thai Nichi Institute of Technology was established to supply more automotive engineers.
2012	Automotive Human Resources Institute Project (AHRDIP) was launched to enhance the number of trainers in R&D, testing and manufacturing.
In plan	Establish Automotive Human Resource Development Academy Set up testing centers for vehicles and auto parts Establish Automatic and robotic for manufacturing

Competitiveness of local suppliers: Few local suppliers are still able to connect to the MNE regional production networks. They struggle to meet demanding quality, design, technology standards.

Also, few local suppliers have been able to graduate from the earlier LCRM's, where standards were not as demanding and competitive pressures not as strong.

Some collective-action attempts to lift skills among these SME's. But these programs have had limited impacts, in part because of frequent changes in government policies.

Trade policy: Industry protection remains high, especially for CBU's, but also with cascading tariff structures and hence some very high EPR's. The co-existence of high protection and rapid export growth is explained by carmakers cross-subsidizing markets, to the detriment of Thai consumers (see Table 3), and well beyond any plausible infant industry grounds.

Table 3

Price Comparison of Vehicles in Selected Countries in 2014 (Unit: Thai Baht)

	Thailand		Retailed price		
	Retailed price	Estimate of fob price	Australia	Indonesia	Malaysia
	Toyota Camry	1,569,000	1,051,186	1,102,548	1,472,310
Toyota Yaris	599,000	401,313	459,071	627,750	-
Toyota Avanza	584,000	391,264	-	538,920	589,277
Honda Civic	780,000	522,578	626,443	1,031,400	984,704
Honda Jazz	555,000	371,834	423,731	548,100	624,391

Source: Authors collected from the website available in each country between January and February 2014. Estimate of fob price is the retailed price excluded excise tax and other local charges. Patvivattanasiri (2014) calculated the tax equivalent estimate of 44.26 per cent.

4. Malaysian Case Studies

A case of considerable success alongside one costly failure.
Hence the need for institutionally nuanced approaches.
Note also the interesting sub-national (Penang) story.

Two Major Early Successes

Malaysia the world's leading tropical cash crop producer, based on geography; open trade, FDI and commercial environment; excellent infrastructure; highly effective R&D institutes for rubber and palm oil; and rural development schemes (FELDA, etc).

Malaysia also successfully entered global electronics production networks early, following Singapore, and with a similar approach.

And a major, costly failure, in heavy industry, especially autos.

The Internationalization of Higher Education

Higher education is one of the world's fastest growing internationally traded services. Both providers (mainly OECD universities) and emerging markets have a stake in it.

ASEAN countries, Singapore and Malaysia historically, others now also, have been major sending countries. Only Singapore currently has the means to realistically aspire to the top university rankings globally.

But other countries can participate in the international 'off-shoring' of comprehensive higher education.

Malaysia has entered this market successfully. Historically a state-dominated system with ethnic quotas; very few foreign students c 1990, now about 100,000, mostly in private institutions. Now one of the most successful among developing countries. See Khong and Tham.

Explaining the success.

Pre-conditions: Earlier large investments in the public HE system; open economy and labour market; high standards of livability; a multi-cultural environment, including widespread use of English.

Major reform in 1996, deregulating entry, allowing private sector to establish full campuses, including several major foreign universities.

The government also established reasonably credible accreditation and quality control processes.

Internationally recognized standards and much lower costs resulted in very rapid increases in private students, both domestic and foreign. Though two-way traffic, Malaysian students still go abroad in large numbers.

Though no guarantee that this approach will lift the country's rankings internationally. Need a different sets of policies for this objective.

Note also additional positive spillovers: (a) enhanced 'soft power' from many international graduates; (b) an indirect boost to tourism, etc; and (c) ameliorated non-Bumiputera discontent to some extent.

5. The Philippine BPO's

The Philippines has a very mixed record with industry policy: stuck too long with import substitution; nationalist provisions in the Constitution have restricted foreign participation (Sicat); and the 1980's '11 Major Industrial Projects' were costly, and later aborted owing to the crisis.

But BPO's have been a significant success story and, owing to the global technological telecoms revolution, this is a fast-growing, rapidly diversifying sector.

The Philippines ranks #2 behind India. Employment now >700,000; negligible 20 years ago; 5% of GDP; annual exports about \$15B.

Creating 'quality' jobs, attractive pay and conditions.

In principle footloose, in practice mainly Metro Manila.

Initially, foreign firms dominated, now increasing numbers of local firms.

Seemingly 'recession proof', eg, in 2008-09 GFC, growth still strong.

Now diversifying into more skill-intensive services.

Explaining the success? Virtually ‘accidental industry policy’, not a key policy target. 3 main drivers:

- i) The global revolution in ICT created many new, internationally traded services through unpackaging.
- ii) A comprehensive telecoms liberalization in the Philippines in the 1990s, one of the fastest in ASEAN (Salazar), resulting in dramatically rising tele density and lower costs.
- iii) A pre-existing Philippine comparative advantage in semi-skilled services, based in widespread English proficiency, culturally assimilated to the needs of foreign markets, especially the US.

Government policy was also supportive, through the PEZA incentives package (which arguably as much about removing distortions anyway).

Why didn't BPO success spill over to other, related sectors?

EG #1: The GPN's in electronics, the Philippines initially a strong performer, during Ramos era reforms, but since then its market share has slipped (Athukorala).

Why does it succeed in an international service network (ie, BPO's), but not a manufacturing one?

Two explanations:

(a) The minimum wage regulations negatively affect the latter but not the former.

(b) Goods trade is adversely affected by the country's less efficient logistics and ports; not relevant for BPO's.

EG #2: Tourism, where the Philippines has many latent comparative advantages, but the industry lags (eg, Thailand) owing to weaker complementary inputs like infrastructure; perhaps also security.

6. Cambodia: Garments and Tourism

Cases of success in spite of extremely unfavourable initial conditions, in practically every respect.

Garments: Established as a factory activity only in the mid 1990s, with little industrial antecedents, as a result of preferential market access to the EU and US under the MFA.

Resulted in rapid growth; now a significant garment exporter, ranked #12, ahead of more established exporters like Sri Lanka, Thailand, etc.

Now the country's major merchandise export and manufacturing employer, with transformative labour market effects (employment of more than 400,000 in a non-agricultural workforce of about 3.5M)

Crucially, the growth was maintained after the abolition of the MFA in 2005.

Also, rising export market and product diversification. Moving beyond the early simple CMT model.

Also increased local employment in more skilled occupations.

And assisted in establishing a country 'export reputation', especially in footwear; now also increasingly in a range of other manufactures, some related to 'Thailand +1' risk diversification.

The key was building effectively on an initial market opportunity, through the adoption of a highly open, business-friendly environment; including establishing export zones compatible with MNE investor preferences, eg, along the Thai border.

Although some concern about the overuse of fiscal incentives.

See also the related case of rapid tourism growth. Here building on a fabled natural attraction, Angkor Wat. Also very rapid growth, 1995-2013, arrivals rising from 200,000 to 4.2M, and receipts from \$100M to \$2.5B.

Here the key government policies were the restoration of peace, investing in infrastructure, combined with openness, in FDI and civil aviation.

Also, unlike garments, relationships with neighbouring countries in tourism are complementary not competitive.

7. Indonesia's Industrial Policy Experience

A puzzle to explain:

- rapid economic growth 1967-97 (7.4% annual average);
- double-digit industrial growth most years;
- extensive industrial policy intervention.

But it's the exception that proves the rule – rapid industrial growth driven overwhelmingly by economy-wide policies.

(i) Consider industry-specific intervention: no evidence that the most protected sectors had superior performance, eg, lagged export, productivity, etc growth.

And labour-intensive sectors performed best after trade liberalization.

Consistent also with Basri's PhD on the inter-industry determinants of protection – 'cronyism' consistently the most significant variable.

(ii) State-owned enterprises: These have been a major and politically popular tool of industry policy. And generally in industries where might expect 'market failures' and 'dynamic externalities' to be present.

But practically every micro case study points to (a) inefficiency, (b) political interference, (c) little evidence that they behave as technological innovators (eg, like the chaebol).

(iii) Fiscal incentives: These employed extensively from 1967 to 1984, when mostly abolished.

But BKPM rarely invoked conditionality, lacked technical expertise; undermined by widespread KKN. Abolished as the successful export-oriented industrialization took off from the mid 1980s.

(iv) Subsidized finance: Also a popular tool during the oil boom period through to the early 1980s.

But dominated by command lending; don't feature as a significant variable in various firm-level surveys of success, ie, between recipients and non-recipients.

(v) The Habibie high-tech projects: Commenced in the early 1980s with several large high-tech projects, especially aircraft manufacture (IPTN Bandung).

These were cases of 'back-to-front' industrialization, building assembly operations with very limited supplier network foundations. Similar in some respects to Malaysian heavy industry, though even more ambitious. Collapsed during the AFC when the govt no longer able to bankroll them. Estimated investment of about \$3 billion; more if implicit subsidies are included.

At least sponsored a lot of advanced technical graduate training abroad. But the govt's non-politicized Institute of Sciences (LIPI) and the higher education sector starved of resources.

And Indonesia missed out on opportunities within the vast regional and global production networks.

8. Conclusions and Lessons

Important to take account of country characteristics and nuances. But several recurring themes, at least 6.

i) Importance of openness: All cases involved export-oriented goods and services, and FDI, technology, human capital flows.

Openness also imposed a discipline on firms, governments, rent-seeking.

ii) Government policies: These were important in various ways. Often, and probably most important, was deregulation, unshackling markets.

In some cases, governments did considerably more, eg, in Malaysia, providing a regulatory framework; also Thailand, pushing MNE's to adopt the country as a regional export base.

iii) Country strengths, often deeply rooted: These present in most cases, from Angkor Wat to Malaysia's cultural diversity and Philippine English-language proficiency.

iv) Good luck and timing: Most examples involved governments undertaking promotional/deregulation measures where timing was fortuitous. Or clever governments?

v) The effects of liberalization are difficult to predict: In very few cases did policy-makers (and academics) accurately predict outcomes, ex ante. This reflects the the dynamic benefits of openness, and also the presence in most of the countries of complementary, supportive policies. Crucially also, export success builds a constituency, so cases of backtracking are rare.

vi) Diverse outcomes within countries: There is surprising diversity of within-country outcomes, both over time, across sectors and sub-nationally. Articulating country 'stylized facts' therefore needs to take account of this diversity.