Online Appendix B to "Optimal Development Policies with Financial Frictions"

Oleg Itskhoki, Benjamin Moll and Dmitry Mukhin
Princeton University

B Historical Accounts of Development Policies

Table 1 in the main text provided a summary of historical accounts of development policies observed in seven fast-growing East Asian countries (Japan, Korea, Taiwan, Malaysia, Singapore, Thailand and China). This Appendix provides the underlying sources that were used as a basis for Table 1. Table B.1 below provides a summary of the these sources, and sections B.1 to B.4 provide the corresponding citations for each of the four main types of policies listed in Table 1.

Table B.1: Underlying sources with historical accounts of development policies

	Rough period	Suppressed wages	Subsidized credit	Subsidized intermediates	Subsidies to export sector
Japan	1950–1970		✓ Johnson (1982) Ito and Weinstein (1996)	✓ Johnson (1982)	✓ Ito and Weinstein (1996)
Taiwan	1950–1980	✓ Galenson (1992)	✓ Wade (1990)	✓ Wade (1990)	
Korea	1960–1980	✓ Galenson (1992) Kim and Topel (1995) Song (1997)	✓ Song (1997) Kim and Leipziger (1997)	✓ Song (1997) Kim and Leipziger (1997)	✓ Song (1997) Kim and Leipziger (1997)
Malaysia	1960–1990	✓ Kuruvilla (1996) Jomo (2013)	✓ Bautista (1983)	✓ Bautista (1983)	✓ Bautista (1983)
Singapore	1960–1990	✓ Kuruvilla (1996) Huff (1997)			✓ Akkemik (2009)
Thailand	1960–1990	✓ Galenson (1992)	✓ Bautista (1983) Dixon (2002)	✓ Bautista (1983) Dixon (2002)	✓ Dixon (2002)
China	1980–present		✓ Stiglitz and Yusuf (2001)		

Note: The checkmarks in the table indicate instances when we found explicit evidence of the policies used (with corresponding references provided below checkmarks), and hence it is not an exhaustive account of all policies that were in place in these countries.

B.1 Suppressed wages

Some form of wage suppression at some point in time was common across fast-growing East Asian countries that we consider. In our analysis of the historical evidence we looked for the following characteristics of the labor market:

— bargaining power, in particular in wage negotiation, shifted towards employers and away from organized (or unorganized) labor;

— ban or restrictions on unionization and other forms of organized labor;

— long and/or unregulated working hours and other work conditions;

— explicit upper bounds on nominal and/or real wage growth, making it lag behind inflation and/or labor productivity growth;

— low aggregate labor shares;

— a fast catch up of wages and labor share upon phasing-out of the policies,

as reflected in the quotes below. In many cases, the motivation behind labor policies was political or ideological, yet it went hand in hand with the economic rationale to support national producers in the global markets. Many governments tried to make domestic production more profitable, as well as to attract foreign firms with more advanced technologies. This is in sharp contrast with the pro-labor and import-competiting policies adopted over the same period by many Latin American countries.

1. **Japan 1950-1970:** no evidence

2. **Taiwan 1950-1980:**

   (a) Galenson (1992): "[Unions] were forbidden to call strikes, and their ability to bargain on wages was limited" (p.60). "Strikes became legal in 1988 for the first time... although the government retained the authority to declare them illegal under certain circumstances" (p.61). "In South Korea, Malaysia, and Taiwan, productivity gains tended to exceed those in wages" (p.81, see Table 4.4). "...the five-day, 40-hour week that is standard among developed countries is still a long way off in the five Asian countries" (p.93, see Table 4.13).

3. **Korea 1960-1980:**

   (a) Galenson (1992): "[The Federation of Korean Trade Unions] and its affiliates were brought under the control of the government and served to moderate rather than advance local union demands" (p.53). "During its years of rapid growth, South

Korea failed to develop an adequate system of collective bargaining and began paying the price when authoritarian government control was ended in 1987... Manufacturing wages rose by 20% in 1988 and by the same amount in 1989... far out of line with both labor productivity and consumer prices" (pp.65–66).

See also section B1.2.(a).

(b) Song (1997): "The urgent need to catch up with and out-perform the North, and to escape from poverty, necessitated... "growth at any cost" and became the basic cause for the "forced expansion" of exports and investment..." (p.92). "The government encouraged firms to borrow, and because the officially set real interest rates were kept close to zero or even negative, businessmen tended to borrow at preferential interest rates as much as they could from banks... Firms were exempted from indirect taxes on income earned from export sales, and there was also a 50 per cent exemption from corporate and personal income tax on export earnings during 1961 to 1972" (p.97). "User fees for electricity, water, transportation, communications, and other services for export manufacturers were also kept under government price control. So were the prices of other services. The government also helped control wages of workers at the exporting firms and also restricted labor union activities" (p.99).

   i. Table 5.7: of labor productivity and real wage dynamic
   ii. Table 5.8: labor's share increased from 31% in 1963 to 61% in 1993
   iii. First stage of industrialization (1961-1977) relied on cheap labor, while starting from 1977 there was labor shortage in the country (p.76)

(c) Stiglitz and Yusuf (2001): "Factor market distortions may have been important in both Korea and Singapore, where it is widely believed that wages were suppressed during most of the period..." (p.110).

4. **Malaysia 1960-1990:**

(a) Galenson (1992): "The Malaysian labor movement has faced some handicaps... racial divisions and strict government regulation...; has been able to organize only 10 percent of the nonagricultural labor force" (p.56–58). "Malaysian... standard work week is 44 hours" (p.93).

See also section B1.2.(a).

(b) Kim and Topel (1995): "Korean governments also attempted to limit wage growth in key sectors. Under the threat of withdrawing government subsidies and support, employers were directed to keep nominal wage growth below an upper limit established by the Economic Planning Board (EPB). Roughly speaking, the allowable limit on any firm's nominal wage growth was 80 percent of the sum of inflation and aggregate productivity growth. While there is little evidence that the limit was enforced, circumstantial evidence suggests that the policies were fairly successful in the early 1970s. Figure 7.1 above showed that aggregate wage growth lagged behind productivity growth at that time." (p.234)

(c) Kuruvilla (1996): "At the level of the workplace, the legislation was similar to that of Singapore, with restrictions on the subjects of bargaining (transfers, promotions, layoffs, retrenchments, and job assignments being deemed outside the scope of bargaining), and restrictions on the ability of unions to strike... The emphasis on cost containment could also be seen in the government's refusal to enact minimum wage legislation for the export industry, and its refusal to enact equal pay for equal work in the export-oriented electronics sector, where 78.6% of those employed were female... ensured that the electronics sector continued to be union-free... The low-cost EOI [export-oriented industrialization] strategy has paid rich dividends. By 1989, the manufacturing sector accounted for 30% of GDP (up from 15% in 1970) and 40% of export earnings, and the contribution of transnational corporations to exports increased from 28% of total exports in 1971 to 58% in 1988... [In 80s] the central elements of IR/HR policy thus have shifted away from cost containment and union control to training and skills development designed to provide a better-quality work force necessary to attract higher-technology investment" (pp.643–645).

5. **Singapore 1960-1990:**

   (a) Kuruvilla (1996): "...policy was to place restrictions on the subjects of bargaining; specifically, transfers, promotions, job assignments, redundancies, layoffs, and retrenchments were deemed to fall outside the scope of bargaining. To contain industrial disputes in the interest of economic development, the right to strike was prohibited in essential industries, and in nonessential industries the ability of unions to strike was circumvented through various administrative requirements. Further, to ensure cost control, the Industrial Arbitration Court was empowered to ratify all collective bargaining agreements and to reject agreements if they conflicted with Singapore's national interest" (p.640).

(b) Stiglitz and Yusuf (2001): see section B1.3.(c).

(c) Huff (1997): "In inter-war Singapore high wage costs made manufacturing internationally uncompetitive, and this factor was fundamental in explaining the lack of greater export-oriented industrialization. Through the mid-1960s... Singapore was "a high cost producer by Asian standards", with wage costs "20-30% too high for world markets" (p.322). "But it was government which stepped in decisively to effect adjustment and, moreover, then to enforce internationally competitive wages. Government control of the labour market was embodied in legislation: two measures, the Employment Act and the Industrial Relations (Amendment) Act of 1968, "depoliticised the labour movement, established defacto government control over unions [and] transferred bargaining power from workers to employers" (p.324). "Unemployment fell from 8-9% in 1966 to 4-5% in 1973 (table 10.3), the latter effectively constituting full employment" (p.326). "Full employment would almost certainly have set up strong inflationary wage pressure and internationally uncompetitive pay rises, driving MNEs elsewhere, had not the government in 1972 inaugurated the National Wages Council, a tripartite body which published guidelines for pay increases... The government controlled unions... Increases in real wages averaged just 1–7% from 1973 to 1978. Then, boosted initially by a three-year wage correction policy decreed by Singapore planners, real wages doubled by 1990" (pp.328–329). "Real wages in manufacturing, however, lagged behind other sectors of the economy" (p.330).

(d) Akkemik (2009): "Labor market has been an area where the envolvement of the government has been the most extensive... Until the second half of the 1970s the growth rate of the real wages generally fell below that of labor productivity" (p.53, see Figure 3.3). "Industrialization strategy was changed towards stimulation of high value-added activities... the government announced a "high-wage policy" in 1979 for a 3-year period... During the period 1979–1981, wage bills increased by 50 percent" (pp.46-47).

6. **Thailand 1960-1990:**

(a) Galenson (1992): "Thai unions have had a much harder time, faced as they were with a very large agricultural sector and the late inception of industrialization" (p.58). Several political regimes prohibited unions. "With only 3 percent of the industrial labor force organized, Thailand has the lowest level of unionization among our five Asian countries" (p.59).

7. **China 1980-present:** no evidence. See Section B5.(c).

B.2 Subsidized credit

Another common policy intervention across most East Asian countries involved some type of credit subsidies, either to industries or individual firms, often times conditional on their export status.

1. **Japan 1950-1970:**

    (a) Johnson (1982): "Large enterprises obtain their capital through loans from the city banks, which are in turn over loaned and therefore utterly dependent on the guarantees of the Bank of Japan, which is itself after a fierce struggle in the 1950's that the bank lost essentially an operating arm of the Ministry of Finance. The government therefore has a direct and intimate involvement in the fortunes of the strategic industries..." (p.10). "Within a year of its creation the JDB [Japan Development Bank] became one of MITI's [Ministry of Industries] most important instruments of industrial policy... authority to issue its own bonds and lifting the loan ceilings that SCAP [Supreme Commander for the Allied Powers] had imposed... In order to keep FILP [Fiscal Investment and Loan Program] healthy and to ensure that people kept depositing their savings in the post office, the Ministry of Finance made the interest on the first 3 million Yen (circa $15,000) that an individual deposited tax exempt and authorized highly competitive interest rates. The system became a rousing success... From 1953 to 1961 the direct supply of capital by the government to industry ranged from 38 percent to 19 percent (see Table 15)" (pp.209–210).

    (b) Ito and Weinstein (1996): "During the 1950s and 1960s, the government targeted certain industries as sunrise industries, providing them with various subsidies and protections against imports and domestic competition to stimulate their expansion and success. They were given policy loans (low-interest loans through government financial institu- tions, such as the Japan Development Bank and the Japan Export and Import Bank) and foreign exchange allocations" (p.225).

2. **Taiwan 1950-1980:**

   (a) Wade (1990): "Cheap credit was made available to existing firms for the purpose of expanding their equipment... The government also limited the entry of new firms or factories... Many firms went bankrupt, while others began to export. Textile exports, which had been less than one percent of total exports in 1952, grew at a compound rate of 38 percent to 1958... Between 1958 and 1959... textile exports increased by almost 200 percent. For the next several years they grew at over 40 percent a year" (p.79).

3. **Korea 1960-1980:**

   (a) Song (1997): see section B1.3.(b)

   (b) Kim and Leipziger (1997): "The most successful companies were rewarded with preferential access to credit" (p.X) "The elements of the support system for exports have been described by Rhee et. al. (1984) and others. They include the setting and monitoring of export targets, allocation of credit for export purposes, maintenance of an export-friendly tax and trade regime (see World Bank, 1987), effective policies for technology acquisition (see Westphal et. al., 1981), and strong international marketing efforts." (p.2) "[Firms] were expected to perform in exchange for the benefits provided in the form of infrastructure, credit and other policies described as the government's 'modestly pro-export bias' by Westphal (1978). The yardstick of performance was exports, not profitability. This helps to explain the high leveraging behavior of firms and the growth-at-all-costs strategy of firms." (p.3)

4. **Malaysia 1960-1990:**

   (a) Bautista (1983): "[Government] provided incentives to firms with pioneer status, exempting them from the 40 percent company income tax... and providing subsidies for infrastructure services such as electricity, water and transport in industrial estates... Malaysian manufacturing developed at a fast pace from 1959 to 1968 under a system of modest tariff protection and liberal investment incentives" (p.10). "In 1968... export-oriented industries were accorded specific benefits... Upon approval under the pioneer status, the project is exempted from company tax (40 percent on profits) for two to five years... Tax credit is given in the amount equivalent to 25 percent of the total capital cost... export firms benefit from accelerated depreciation allowance, relief from income tax including payroll tax and export allowances... Labor Utilization Relief... is similar to pioneer status except that the period of exemption from the company tax is based on the number of full-time paid employees, i.e., 2 years for firms employing from 51 to 100 workers, 3 years for employment size of 101-200, 4 years for 201-350 and 5 years for more than 351 workers. Other fiscal benefits include tax-free importation of machinery, equipment and industrial raw materials..." (pp.11-12).

5. **Singapore 1960-1990:** no evidence

6. **Thailand 1960-1990:**

   (a) Bautista (1983): "By the early 1970s, government policy began to place greater emphasis on export industries... a rebate of import duties and business taxes on imported inputs... *preferential interest rate for commercial banks to provide short-term financing to exporters*" (p.23).

   (b) Dixon (2002): "In addition, the Bank of Thailand began to give preferential credit to exporters and the Ministry of Finance to grant refunds of taxes and tariffs levied on imports" (p.131).

7. **China 1980-present:**

   (a) Stiglitz and Yusuf (2001): "As for the channels of finance, rural enterprises rely heavily on household savings and borrowing from the informal financial market, and credits in the form of formal bank loans are limited" (p.154). "...the amount of loans per unit of pretax profit of the SOEs is seven to ten times that of rural enterprises" (p.162).

B.3 Subsidies to intermediates

1. **Japan 1950-1970:**

   (a) Johnson (1982): "The problem was to keep the price down" (p.217). "First, [the Rationalization Promotion Law of 1952] provided direct governmental subsidies for the experimental installation and trial operation of new machines and equipment, plus rapid amortization and exemption from local taxes of all investments in research and development; second, it authorized certain industries (to be designated by the cabinet) to depreciate the costs of installing modern equipment by 50 percent during the first year; and third, it committed the central and local governments to building ports, highways, railroads, electric power grids, gas mains, and industrial parks at public expense and made them available to approved industries" (p.218).

2. **Taiwan 1950-1980:**

    (a) Wade (1990): "On the other hand, industrialists benefited from the overvalued exchange rate in the form of lower costs of imported inputs, and benefited from the trade controls through higher prices for products sold on the domestic market. Also, the domestic terms of trade were biased against agriculture by means of land taxes and, more importantly, by means of both compulsory procurement of rice at below-market prices and the rice-fertilizer barter scheme" (p.76).

3. **Korea 1960-1980:**

    (a) Song (1997): "User fees for electricity, water, transportation, communications, and other services for export manufacturers were also kept under government price control. So were the prices of other services. The government also helped control wages of workers at the exporting firms and also restricted labor union activities" (p.99).

    (b) Kim and Leipziger (1997): see section B2.3.(b).

4. **Malaysia 1960-1990:**

    (a) Bautista (1983): see B2.4.(a).

5. **Singapore 1960-1990:** no evidence

6. **Thailand 1960-1990:**

    (a) Dixon (2002): Under the Industrial Promotion Act there was provision for the exempting of exporters from taxes on imported machinery, raw materials and other intermediate products" (p.88).

7. **China 1980-present:** no evidence

B.4 Subsidies to exports

1. **Japan 1950-1970:**

   (a) Ito and Weinstein (1996): "Export promotion was certainly an important aspect of industrial policy in the 1950s and 1960s" (p.227).

2. **Taiwan 1950-1980:** no evidence

3. **Korea 1960-1980:**

   (a) Song (1997): see section B1.3.(b).

   (b) Kim and Leipziger (1997): see section B2.3.(b).

4. **Malaysia 1960-1990:**

   (a) Bautista (1983): see section B2.4.(a).

5. **Singapore 1960-1990:**

   (a) Akkemik (2009): "The government offered various incentive schemes for both domestic and foreign investors... such as tax holidays, tax exemption on profits, double tax deduction for exports, and exemption for various types of withholding taxes." (p.55, see Table 3.8).

6. **Thailand 1960-1990:**

   (a) Dixon (2002): See B3.6.(a) and "The devaluations gave a boost to the already extremely buoyant Thai export sector. Between 1972 and 1974 Thailand experienced an export boom led by the rice sector" (p.94). "[After oil price increase in 70s] the government was able to provide a substantial 'cushion' through the adjustment of the level of taxation on fuels, the imposition of controls over fuel prices and the introduction of the oil fund" (p.95). "The Third Plan emphasised the development of an export-orientated sector and in 1972 the industrial promotion scheme was revised to give support to exports." (p.89). "...unlike the First and Second Plans, emphasis was placed on the reduction of income disparities and general social measures..." (p.99). "The acceleration of growth was closely related to the expansion of manufactured exports—initially textiles and later electronic products" (p.122). "The devaluation of the baht during 1984, reinforced in 1985 as the baht declined with the US dollar, improved the competitiveness of Thai exports" (p.123). "In addition, the Bank of Thailand began to give preferential credit to exporters and the Ministry of Finance to grant refunds of taxes and tariffs levied on imports" (p.131).

   (b) Bautista (1983): see B2.6.(a).

7. **China 1980-present:** no evidence

B.5 Some other policy interventions

1. Wade (1990) (Taiwan): "...industrialists benefited from the overvalued exchange rate in the form of lower costs of imported inputs, and benefited from the trade controls through higher prices for products sold on the domestic market. Also, the domestic terms of trade were biased against agriculture by means of land taxes and, more importantly, by means of both compulsory procurement of rice at below-market prices and the rice-fertilizer barter scheme. Under the latter, the government exchanged fertilizer, over which it had a monopoly, for rice at rates of exchange unfavorable to rice... for 1957-61 about 25 percent of farm income went to taxes, against 19 percent of nonagricultural income... The several official exchange rates were on average substantially overvalued. The black market rate of exchange with the U.S. dollar was of the order of 15 to 70 percent higher than the official rates" (pp.76-77).

2. Stiglitz and Yusuf (2001): "... there is still an obsession with further industrial development, if only the right sectors can be identified. The difficulty with this view, apart from the great difficulties in identifying future leading industrial sectors, is the changing comparative advantage of the countries and the need to diversify to high-value-added service sectors..." (p.135).

3. Akkemik (2009) (Japan, Korea, Taiwan): "The industrial policies implemented from the late 1940s to the early 1970s in Japan and from the 1960s to the 1990s in Korea and Taiwan " (p.9). "In the case of Japan, for instance, competition was highly regulated and in many cases replaced by cooperation during the first two decades in the post-war era... The governments in Asian latecomers except that of Taiwan promoted an oligopolistic competition market structure where market entry and exit were controlled centrally... In Taiwan, on the other hand, the government relied mainly on private firms for industrial development and a large number of small- and medium-sized enterprises

(SMEs) gained importance from the 1960s and they were supported by the government with financial incentives" (pp.14-15).

4. Chow (1993) (China): "...index of real consumption... shows an increase from 100 in 1952 to 380.8 in 1980, or an average annual rate of increase of 0.049. This rate of increase slower than the 0.060 rate for real national income reflects the government policy of restricting consumption to achieve accumulation... Comparing consumption of peasants with income of the agricultural sector, one finds the ratio of the former to the latter to fall between 0.90 and 1.07 in all years from 1954 to 1984... Comparing consumption of nonagricultural residents with estimated wage income... one finds the ratio of the former to the latter to fall between 0.84 and 1.05 in the years 1952 to 1980, excluding 1956 and 1958-1963 [and actually lower in 80s than before, see Table 16]. By controlling the wage rate, the government can limit the consumption of nonagricultural residents." (p.839)

References

Akkemik, K. A. (2009): *Industrial development in East Asia: a comparative look at Japan, Korea, Taiwan, and Singapore*, vol. 3. World Scientific.

Bautista, R. M. (1983): "Industrial policy and development in the ASEAN countries," .

Chow, G. C. (1993): "Capital formation and economic growth in China," *The Quarterly Journal of Economics*, pp. 809–842.

Dixon, C. (2002): *Thai Economy*. Routledge.

Galenson, W. (1992): *Labor and economic growth in five Asian countries: South Korea, Malaysia, Taiwan, Thailand, and the Philippines*. Praeger Publishers.

Hausman, W. J., and J. L. Neufeld (2002): "The market for capital and the origins of state regulation of electric utilities in the United States," *The Journal of Economic History*, 62(04), 1050–1073.

Huff, W. G. (1997): *The economic growth of Singapore: Trade and development in the twentieth century*. Cambridge University Press.

Ito, T., and D. E. Weinstein (1996): "Japan and the Asian economies: A" miracle" in transition," *Brookings Papers on Economic Activity*, pp. 205–272.

Johnson, C. A. (1982): *MITI and the Japanese miracle: the growth of industrial policy: 1925-1975*. Stanford University Press.

Jomo, K. S. (2013): *Industrializing Malaysia: policy, performance, prospects*. Routledge.

Kim, D.-I., and R. H. Topel (1995): "Labor Markets and Economic Growth: Lessons from Korea's Industrialization, 1970-1990," in *Differences and Changes in Wage Structures*, NBER Chapters, pp. 227–264. National Bureau of Economic Research, Inc.

Kim, K., and D. M. Leipziger (1997): "Korea: A Case of Government-Led Development," in *Lessons from East Asia*, ed. by D. M. Leipziger, pp. 155–212. University of Michigan Press, Ann Arbor.

Kuruvilla, S. (1996): "Linkages between industrialization strategies and industrial relations/human resource policies: Singapore, Malaysia, the Philippines, and India," *Industrial & Labor Relations Review*, 49(4), 635–657.

Song, B.-N. (1997): *The rise of the Korean economy*. Oxford University Press.

Stiglitz, J. E., and S. Yusuf (2001): *Rethinking the East Asian Miracle*. World Bank Publications.

Wade, R. (1990): *Governing the market: Economic theory and the role of government in East Asian industrialization*. Princeton University Press.

Zhu, X. (2012): "Understanding China's Growth: Past, Present, and Future (Digest Summary)," *Journal of Economic Perspectives*, 26(4), 103–124.