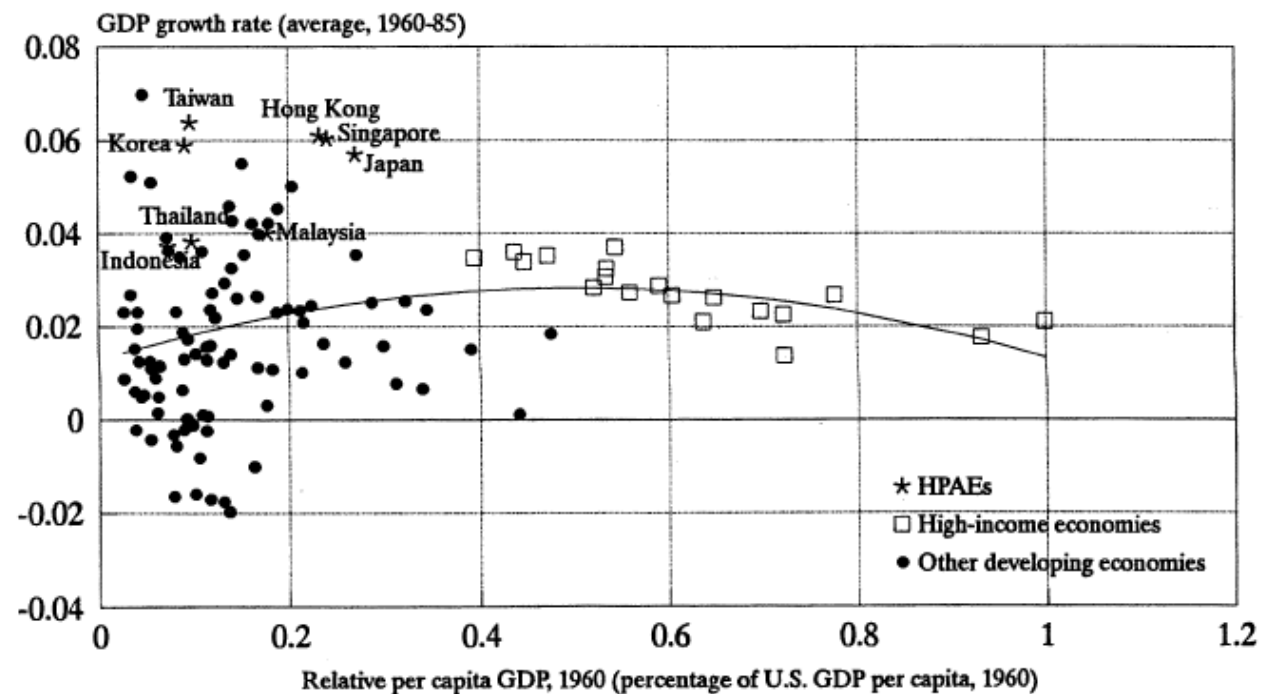


# East Asian Miracle

- What empirical phenomenon does the “East Asian Miracle” refer to?
- What were the drivers for the miracle under the framework of the growth model?
- Which policies contributed to the miracle?

- What empirical phenomenon does the “East Asian Miracle” refer to?
  - Sustained, rapid, shared growth

Figure 1 GDP GROWTH RATE, 1960–1985, AND GDP PER CAPITA, 1960



Note: This figure plots this regression equation:

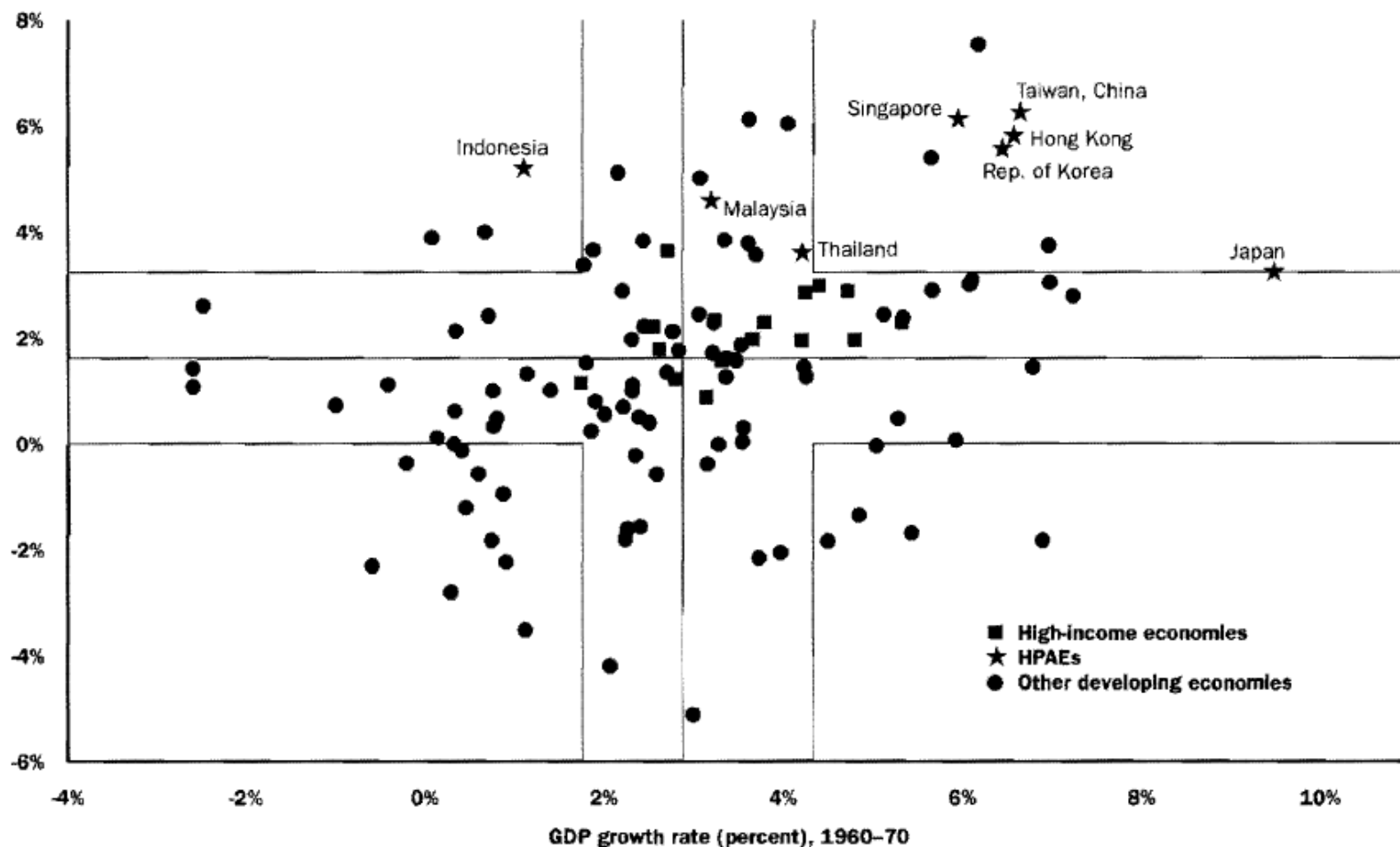
$$\text{GDPG} = 0.013 + 0.062\text{RGDP60} - 0.061\text{RGDP60}^2. \quad N = 119; \quad \bar{R}^2 = 0.036.$$

(0.004)                      (0.027)                      (0.033)

Source: Summers and Heston (1991); Barro (1989); World Bank data.

**Figure 3 Growth Rate Persistence**

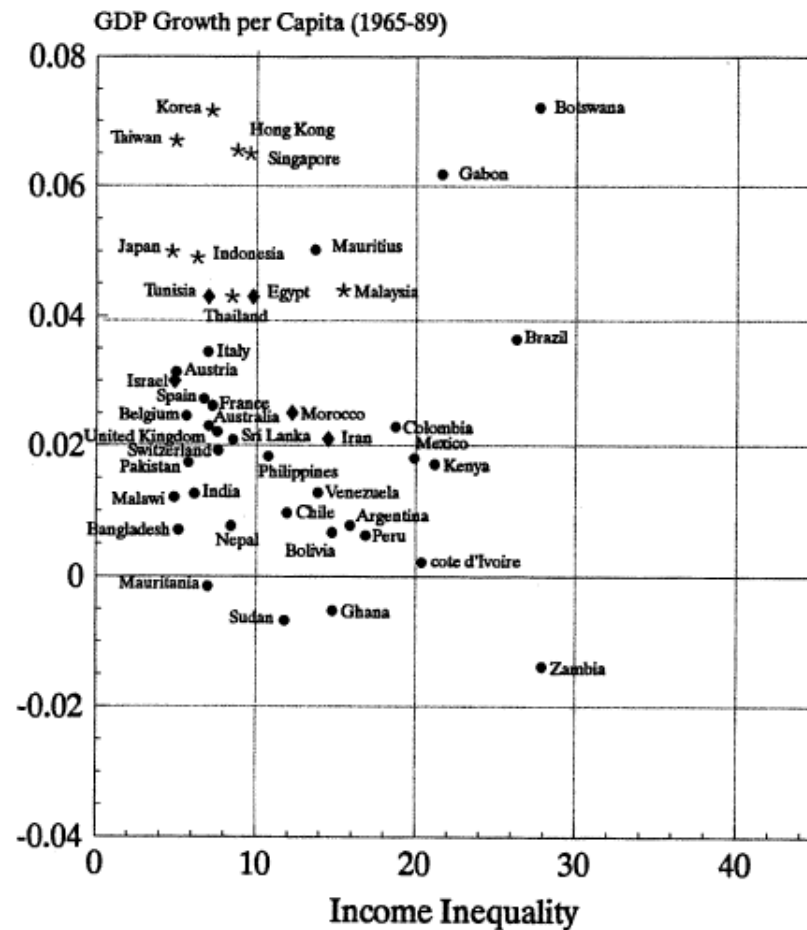
GDP growth rate (percent), 1970–85



*Note:* Boxes are seventy-fifth percentile of growth rates in each period.

Source: World Bank, 1993.

Figure 2 INCOME INEQUALITY AND GROWTH OF GDP, 1965–1989



Note: Income inequality is measured by the ratio of the income shares of the richest 20% and the poorest 20% of the population.

Source: World Bank data.

Source: Page, 1994.

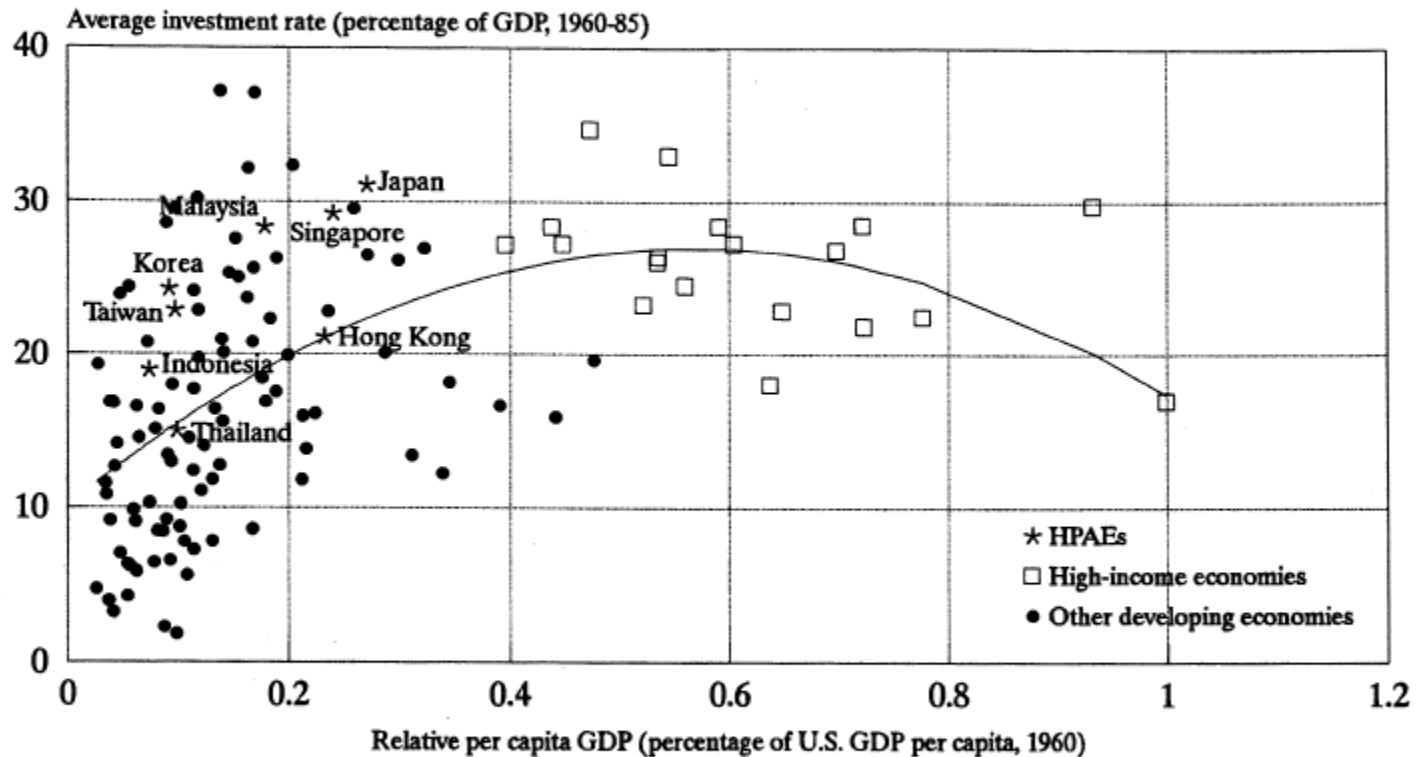
- What were the drivers for the miracle under the framework of the growth model?

Growth Accounting

$$Y/L = Af(K/L, H/L)$$

- Factor Accumulation
- TFP growth (catch-up)

Figure 3 AVERAGE INVESTMENT RATE AS A PERCENTAGE OF GDP,  
1960–1985, AND GDP PER CAPITAL LEVEL, 1960



Note: Regression equation:

$$16085 = 10.125 + 59.120\text{RGDP}60 - 51.881\text{RGDP}60^2, N = 119; \bar{R}^2 = 0.295.$$

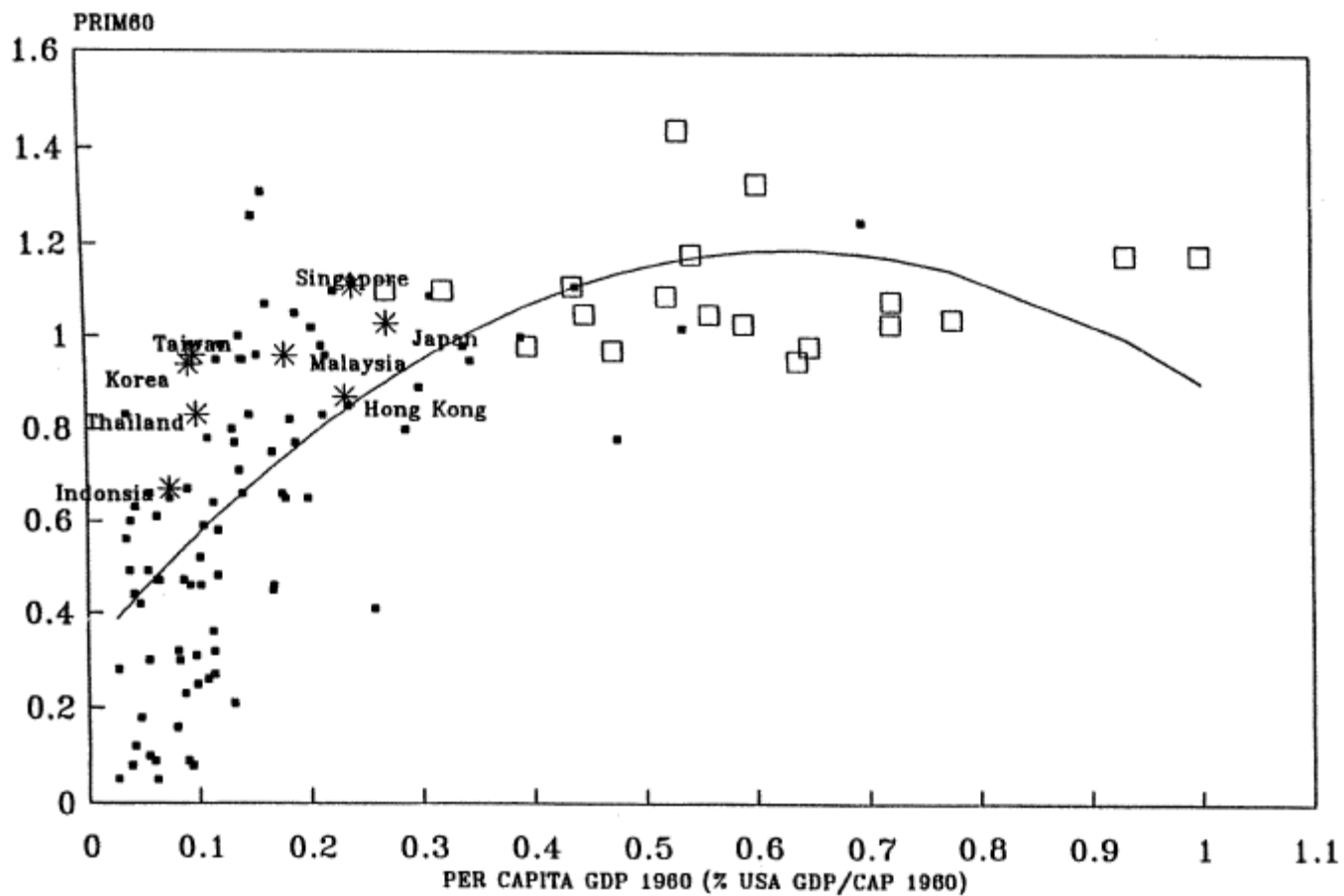
(1.383)                      (10.344)                      (12.593)

Sources: Summers and Heston (1991); Barro (1989); World Bank data.

Source: Page, 1994.

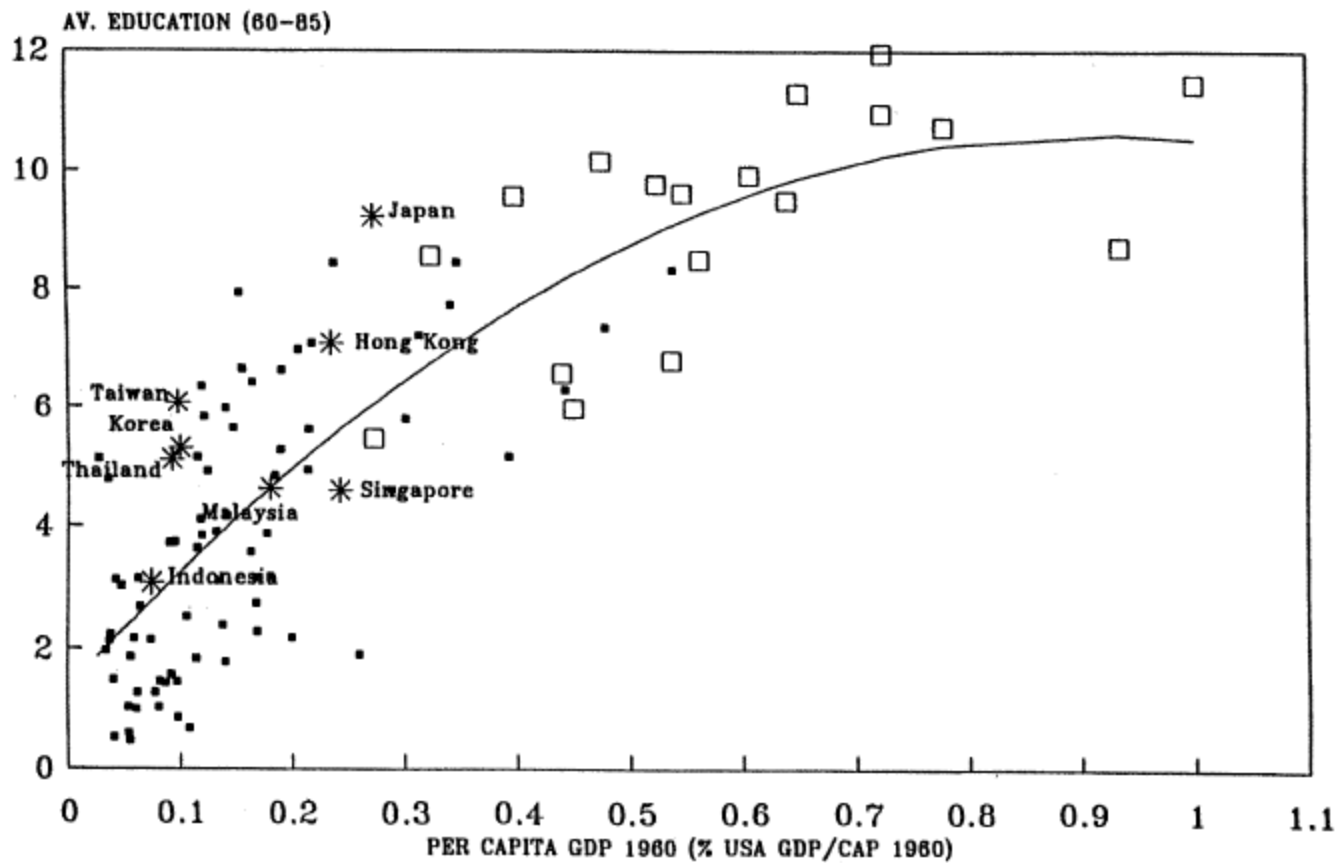


Figure 4a INITIAL INCOME LEVEL AND PRIMARY ENROLLMENT RATE



Source: Page, 1994.

Figure 4b INITIAL INCOME LEVEL AND AVERAGE EDUCATION STOCK



Source: Page, 1994.

Table 1 ELASTICITY OF OUTPUT WITH RESPECT TO CAPITAL (SK), LABOR (SL), AND HUMAN CAPITAL (SH): FULL SAMPLE AND HIGH-INCOME ECONOMIES

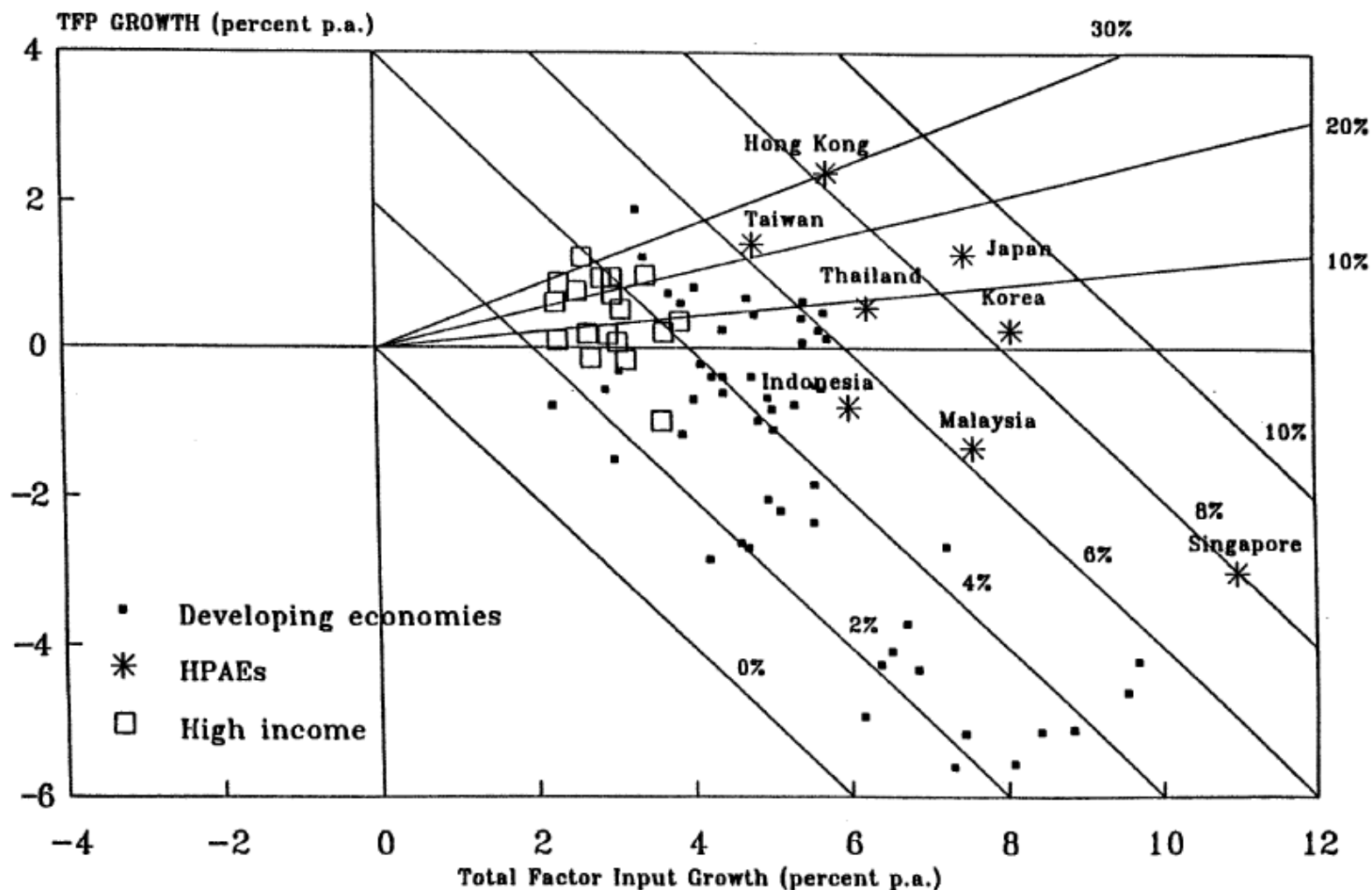
	<i>Observations</i>	<i>SK</i>	<i>(t-stat)</i>	<i>SL</i>	<i>(t-stat)</i>	<i>SH</i>	<i>(t-stat)</i>
Full sample	2,093	0.178	10.895	0.669	6.411	0.154	1.49
High-income economies	460	0.399	10.237	0.332	1.679	0.269	1.476

RESULTING TOTAL FACTOR PRODUCTIVITY GROWTH ESTIMATES FOR THE HPAES (1960–1989)

<i>Economy</i>	<i>TFP growth (full-sample parameter estimates)</i>	<i>TFP growth (high- income only, parameter estimates)</i>
Hong Kong	3.6470	2.4113
Indonesia	1.2543	−0.7953
Japan	3.4776	1.4274
Korea, Rep. of	3.1021	0.2355
Malaysia	1.0755	−1.3369
Singapore	1.1911	−3.0112
Taiwan	3.7604	1.2829
Thailand	2.4960	0.5466
Latin America	0.1274	−0.9819
Africa	−0.9978	−3.0140

Source: World Bank data.

Figure 6 TOTAL FACTOR PRODUCTIVITY GROWTH AND PART OF GROWTH DUE TO GROWTH OF FACTOR INPUTS, 1960–1989  
(HIGH-INCOME SAMPLE PARAMETERS)



Source: Page, 1994.

**Table 1.3 Sources of Growth in Europe and Japan, 1950–73, and in East Asia, 1960–94 (percent a year)**

Period and economy	Capital	Labor	Total factor productivity	Output
<i>1950–73</i>				
France	1.6	0.3	3.1	5.0
Italy	1.6	0.2	3.2	5.0
Japan	3.1	2.5	3.6	9.2
United Kingdom	1.6	0.2	1.2	3.0
West Germany	2.2	0.5	3.3	6.0
<i>1960–94</i>				
China	3.1	2.7	1.7	7.5
Hong Kong, China	2.8	2.1	2.4	7.3
Indonesia	2.9	1.9	0.8	5.6
Korea, Rep. of	4.3	2.5	1.5	8.3
Malaysia	3.4	2.5	0.9	6.8
Philippines	2.1	2.1	-0.4	3.8
Singapore	4.4	2.2	1.5	8.1
Taiwan, China	4.1	2.4	2.0	8.5
Thailand	3.7	2.0	1.8	7.5

Source: Crafts 1998.

Source: Yusuf, 2001.

**Table 1.4 Alternative Estimates of East Asian Total Factor Productivity Growth  
(percent a year)**

<b>Economy</b>	<b>Young (1994a and b, 1995), 1966–90</b>	<b>Collins and Bosworth (1996), 1960–94</b>	<b>Sarel (1997), 1978–96</b>	<b>Adjusted (Young), 1966–90<sup>a</sup></b>
China		4.6 <sup>c</sup>		
Hong Kong, China	2.3			2.4 <sup>d</sup>
Indonesia	1.2 <sup>b</sup>	0.8	1.2	
Korea, Rep. of	1.7	1.5		1.3
Malaysia	1.1 <sup>b</sup>	0.9	2.0	
Philippines		-0.4	-0.8	
Singapore	0.2	1.5	2.2	1.0
Taiwan, China	2.6	2.0		1.9
Thailand	1.5 <sup>b</sup>	1.8	2.0	

a. Adjusted (Young) uses revised factor share weights with capital assumed to have a weight of 0.35.

b. 1970–85

c. 1984–94.

d. 1966–91.

Source: Crafts 1998.

Source: Yusuf, 2001.

- Which policies contributed to the miracle?
  - Macroeconomic stability (neoclassical)
    - Budget deficit and inflation; Foreign debts; Exchange rate
    - Legal system; financial markets;
    - Minimize price distortions
  - Education
    - Primary and secondary education
  - Intervention policies (revisionist)
    - Export promotion
    - Industrial policy
  - Developmental state

**Table 3 CONSOLIDATED PUBLIC SECTOR DEFICITS, SELECTED EAST ASIAN AND OTHER ECONOMIES**

<i>Economy / Region</i>	<i>Average public deficit, percentage of GDP, 1980–1988</i>	<i>Rank among 40 developing countries (1 = highest deficit)</i>
<i>HPAEs</i>		
Korea, Rep. of	1.89	34
Malaysia	10.80	6
Thailand	5.80	23
Average, 40 developing economies	6.39	
Average, OECD economies	2.82	
<i>Other economies</i>		
Argentina	9.62	
Brazil	4.02	
Mexico	6.73	
Philippines	4.40	

*Source:* Easterly, Rodriguez, and Schmidt-Hebbel (forthcoming).

Source: Page, 1994.



Table 4 INFLATION RATES

<i>Economy / Region</i>	<i>Average CPI, 1961–1991</i>
HPAEs <sup>a</sup>	7.5
Hong Kong <sup>b</sup>	8.8
Indonesia <sup>c</sup>	12.4
Korea, Rep. of	12.2
Malaysia	3.4
Singapore	3.6
Taiwan	6.2
Thailand	5.6
All low- and middle-income economies	61.8
South Asia	8.0
Sub-Saharan Africa	20.0
Latin America and Caribbean	192.1

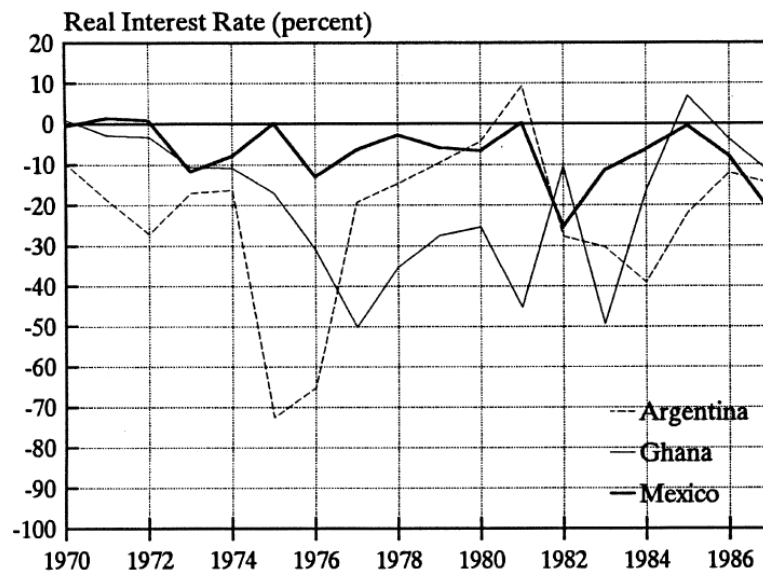
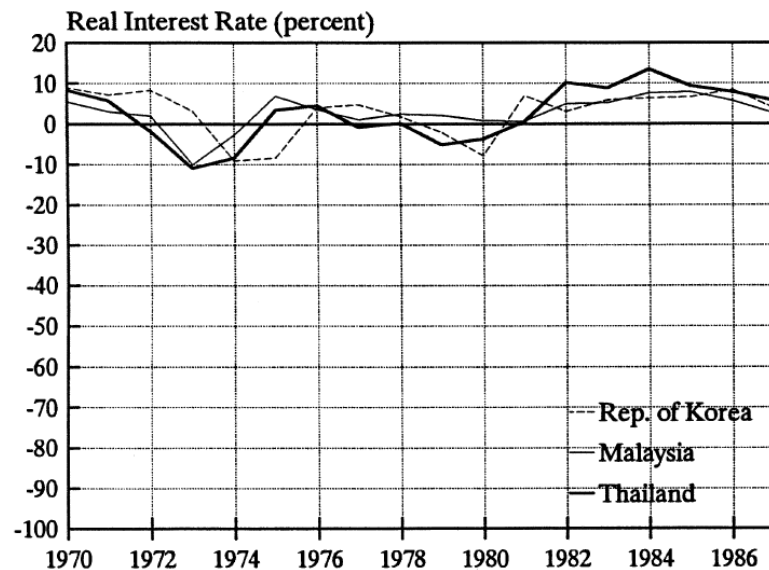
<sup>a</sup>Averages are unweighted

<sup>b</sup>1972–91 only.

<sup>c</sup>1969–91 only.

Sources: World Bank data; World Bank (1992); Taiwan (1992).

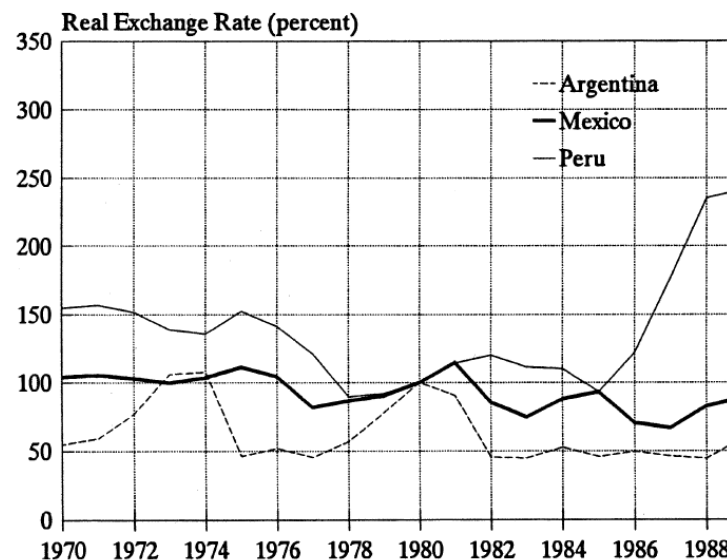
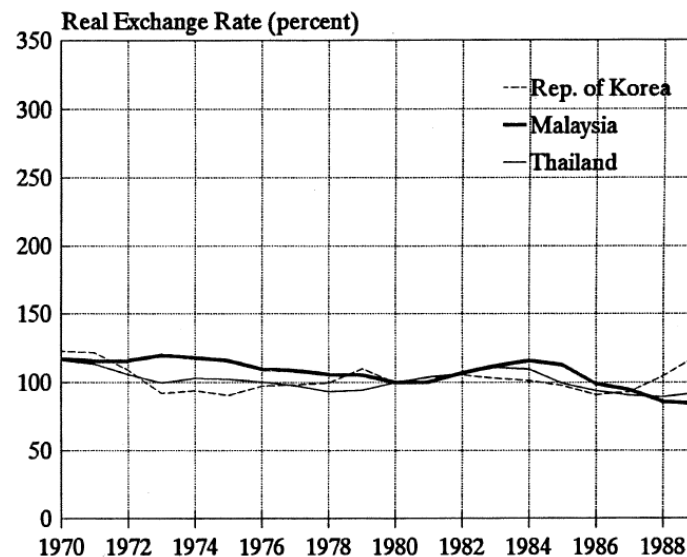
Figure 8 REAL INTEREST RATES: EXAMPLES FROM EAST ASIA AND OTHER SELECTED ECONOMIES



Note: Real interest rates are defined as the deposit rate deflated by the consumer price index.  
Source: World Bank data.

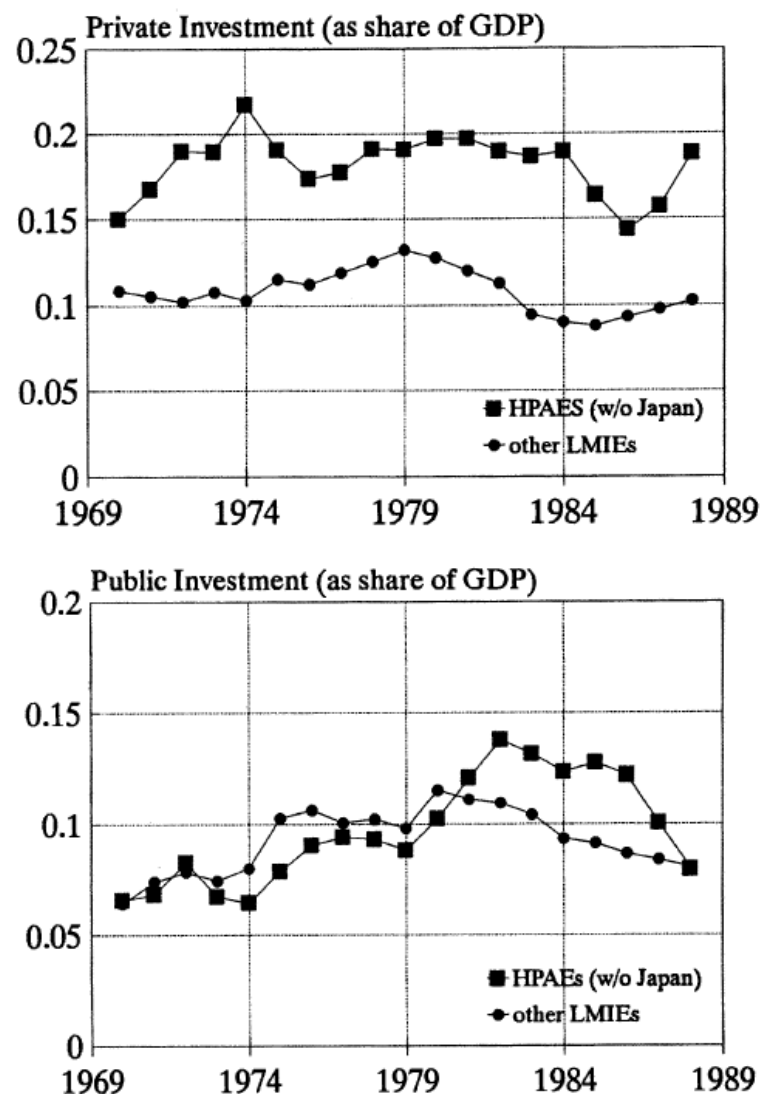
Source: Page, 1994.

Figure 9 EXAMPLES OF REAL EXCHANGE RATE VARIABILITY IN EAST ASIA AND OTHER SELECTED ECONOMIES



Note: Index of real exchange rate: 1980 = 100; real depreciation is down.  
Source: World Bank data.

Figure 10 PUBLIC AND PRIVATE INVESTMENT



Note: LMIEs = low- and middle-income economies.

Source: World Bank data.

Table 8 PUBLIC EXPENDITURE ON EDUCATION AS A PERCENTAGE OF GNP

Economy / Region	1960	1989
<i>HPAEs</i>		
Hong Kong	—	2.8
Korea, Rep. of	2.0	3.6
Singapore	2.8	3.4
Malaysia	2.9	5.6
Thailand	2.3	3.2
Indonesia <sup>a</sup>	2.5	0.9
Average <sup>b</sup>	2.5	3.7
<i>Other</i>		
Brazil	1.9	3.7
Pakistan	1.1	2.6
Less developed economies <sup>c</sup>	1.3	3.1
Sub-Saharan Africa	2.4	4.1

<sup>a</sup>Alternative sources of data indicate that expenditure on public education as a percentage of GDP was 3.0% in Indonesia in 1989.

<sup>b</sup>Average does not include Indonesia.

<sup>c</sup>Lower- and middle-income economies.

Source: United Nations Development Program (1991).

Table 9 EXPORT PENETRATION, SELECTED EAST ASIAN ECONOMIES, 1965–1990

<i>Economy</i>	<i>Share in world exports</i>			<i>Share in developing economy exports</i>		
	1965	1980	1990	1965	1980	1990
<i>Total exports</i>						
Japan	5.0	7.0	9.0	—	—	—
Four tigers <sup>a</sup>	1.5	3.8	6.7	6.0	13.3	33.9
Southeast Asian NIEs <sup>b</sup>	1.5	2.2	2.4	6.2	7.8	12.4
HPAE Subtotal	7.9	13.1	18.2	12.2	21.1	56.3
All developing economies	24.2	28.7	19.8	100.0	100.0	100.0
World	100	100	100	—	—	—
<i>Exports of manufactures</i>						
Japan	7.8	11.6	11.8	—	—	—
Four tigers <sup>a</sup>	1.5	5.3	7.9	13.2	44.9	61.5
Southeast Asian NIEs <sup>b</sup>	0.1	0.4	1.5	1.1	3.8	12.0
HPAE Sub-total	9.4	17.3	21.3	14.2	48.6	73.5
All developing economies	11.1	11.8	12.9	100	100	100
World	100	100	100	—	—	—

<sup>a</sup>Republic of Korea, Hong Kong, Singapore, and Taiwan.

<sup>b</sup>Indonesia, Malaysia, and Thailand.

Source: UN Trade Systems data.

Source: Page, 1994.

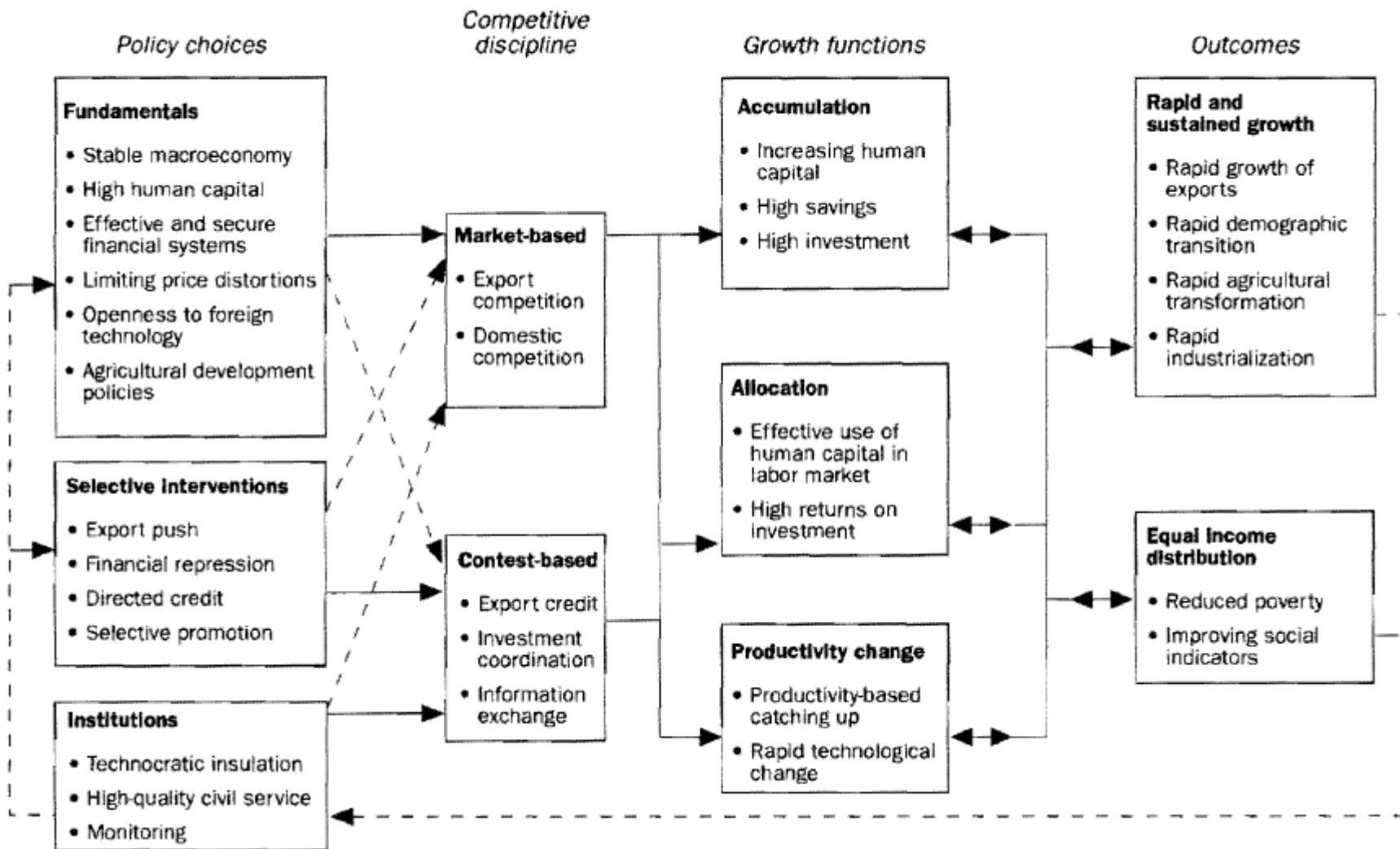
Table 10 RATIO OF TOTAL TRADE TO GDP

<i>Economy / region</i>	<i>1970</i>	<i>1980</i>	<i>1985</i>	<i>1988</i>
<i>HPAEs</i>				
Hong Kong	1.50	1.52	1.78	2.82
Indonesia	0.25	0.46	0.38	0.42
Korea, Rep. of	0.32	0.63	0.66	0.66
Japan	0.19	0.25	0.23	0.21
Malaysia	0.89	1.00	0.85	1.09
Singapore	2.12	3.70	2.77	3.47
Taiwan	0.53	0.95	0.82	0.90
Thailand	0.28	0.49	0.44	0.35
Sub-Saharan Africa	0.24	0.30	0.27	0.45
South Asia	0.11	0.17	0.16	0.19
Latin America and Caribbean	0.20	0.25	0.22	0.23

*Note:* Total trade = value of exports and value of imports/gross domestic product.

*Sources:* World Bank data; Taiwan, various issues; National Accounts Statistics: Analysis of Main Aggregates, 1988–1989 (United Nations).

**Figure 5 A Functional Approach to Growth**



Source: World Bank, 1993.

	<i>Japan</i>	<i>Korea</i>	<i>Taiwan</i>	<i>Hong Kong</i>	<i>Singapore</i>
Textile	1900–1930 Again 1950		1960s 1970s	Early 1950s (dominant)	Early 1960s Again 1970s
Clothing, apparel	1950s		1960s 1970s	1950s–1960s	
Toys, watches, footwares	1950s		1960s 1970s	1960s–1970s	
Refining		(promo) Early 1960s			
Steel	1950s–1960s	(promo) Late 1960s– Early 1970s			
Chemicals	1960s–1970s	Late 1960s Early 1970s	1970s		
Shipbuilding	1960s–1970s	1970s			
Electronics	1970s	Late 1970s 1980s	1980s		1970s
Automobile	1970s–1980s	1980s			
Computers, semiconductors	1980s	Late 1980s			
Banking and finance				Late 1970s 1980s	1980s

*Source:* Japan, Korea, Taiwan: author's judgment; Hong Kong, Singapore, Young (1992).

Source: Ito, 1994.

- Was it a miracle? Was it sustainable?
- What lessons do we learn? Can we replicate the experience in other regions of the world?