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Investment and Asia Rebalancing: The Role of Infrastructure and Financial Markets

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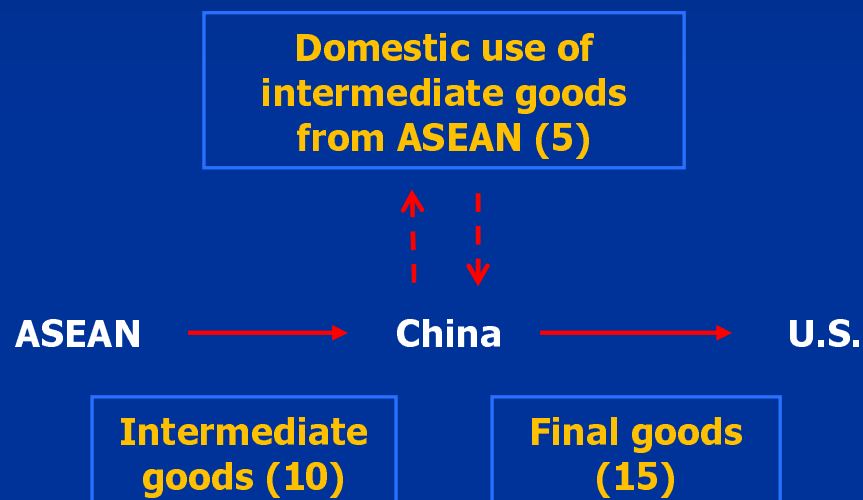
Key Questions and Outline

- **Why does Asia need rebalancing and what does it mean?**
 - Assessing Asia's export dependence
 - What does rebalancing mean?
- **What is holding back investment in parts of Asia?**
 - Recent trends
 - Aggregate and firm-level determinants
- **What are the policy implications?**
 - Role of infrastructure
 - Role of financial markets
- **Conclusions**

**Why does Asia need rebalancing and
what does it mean?**

Asia's exposure to external demand remains high.....

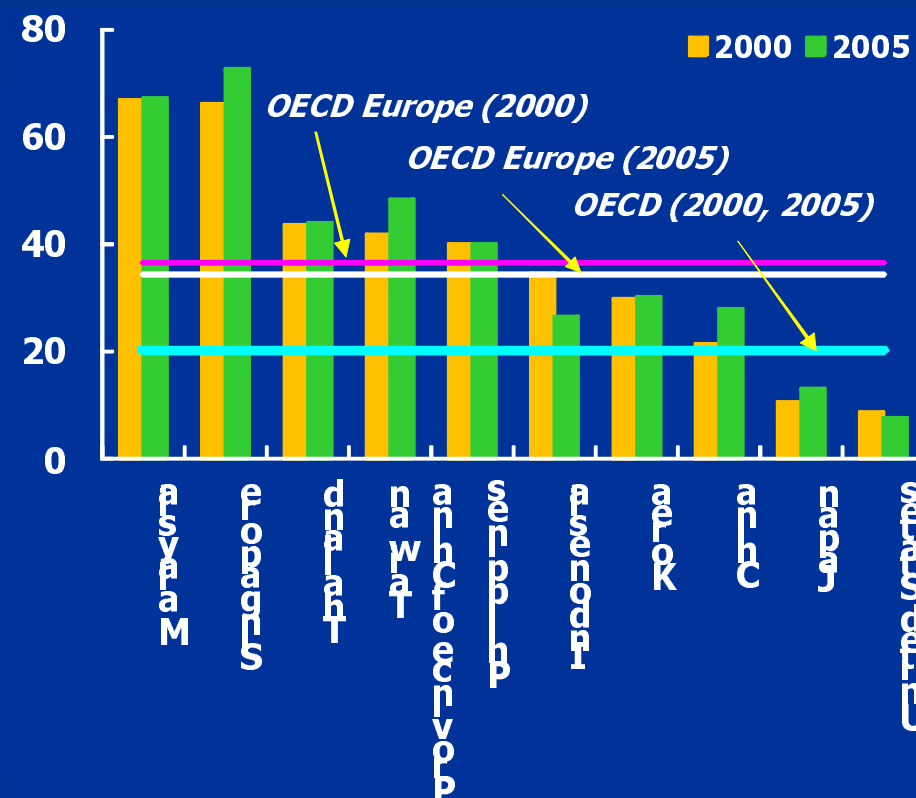
Effect of Vertical Integration on Trade



Actual exposure: ASEAN to China (5), ASEAN to U.S.(5), China to U.S. (10), Total 20.

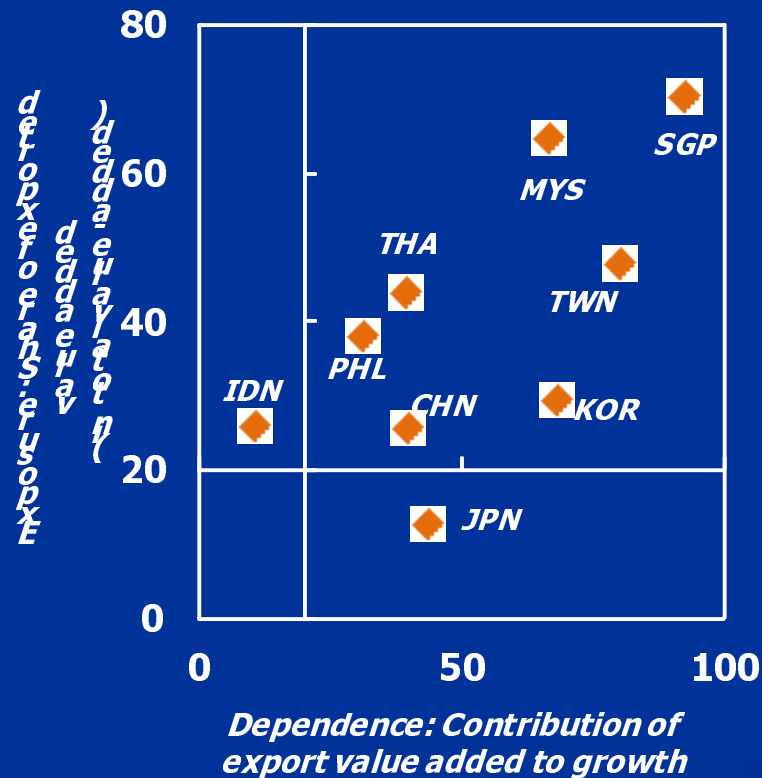
Gross trade data: ASEAN to China (10), ASEAN to U.S. (0), China to U.S. (15), Total 25.

Share of Export Value Added in GDP (percent)

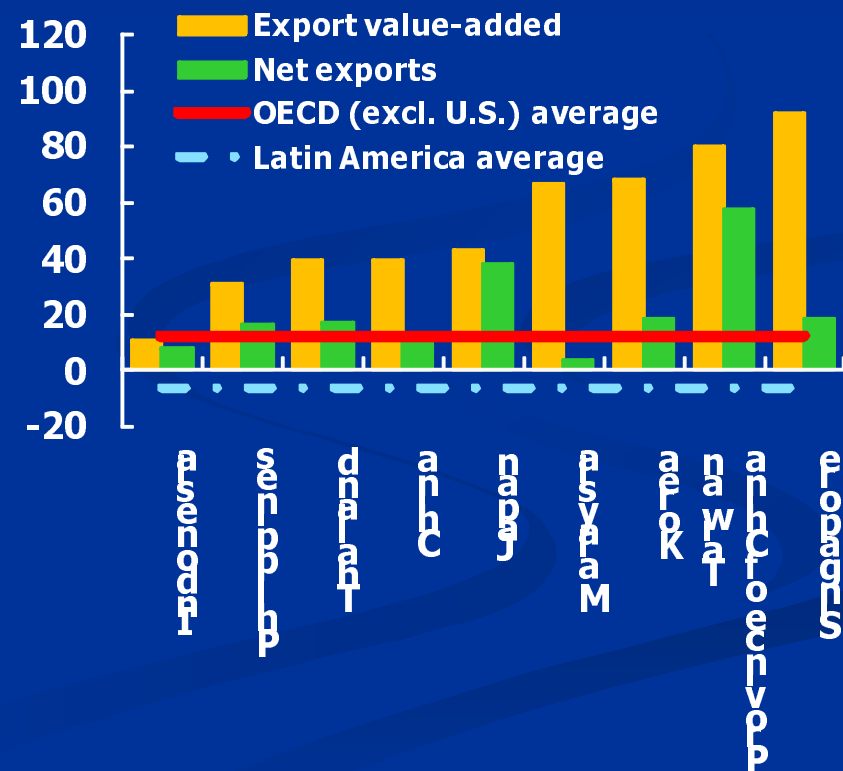


... and exports have been a primary engine of growth in the region

Selected Asia: Export Dependence and Exposure
(percent)



Selected Asia: Average Contribution to Real GDP Growth
(percent of real GDP growth)



Accounting for export-related investment, the contribution of exports to growth is even higher

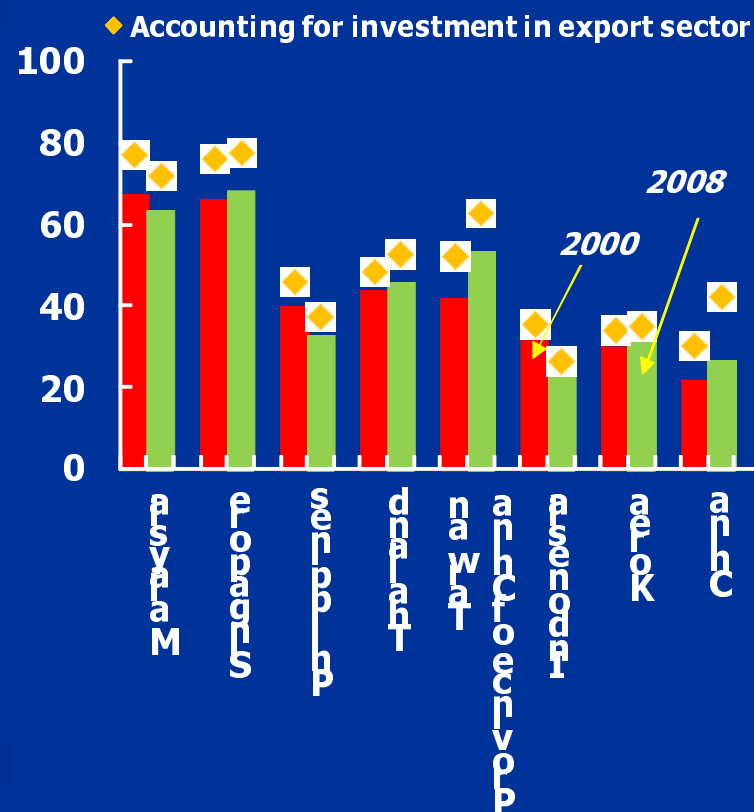
Selected Asia: Export Related Investment ¹ (percent)

Investment by Export Sector¹

	% of gross fixed capital		% of GDP	
	2000	2008	2000	2008
Indonesia	5.4	4.0	1.1	1.1
Malaysia	41.3	43.3	10.4	8.5
Philippines	29.4	31.1	6.2	4.7
Singapore	32.2	33.2	9.9	9.5
Thailand	21.1	25.7	4.6	7.0
China	26.4	32.8	9.0	15.5
Taiwan Province of China	43.4	46.1	10.4	9.5
Korea	14.2	11.1	4.3	3.2
Japan	7.8	9.6	2.0	2.2

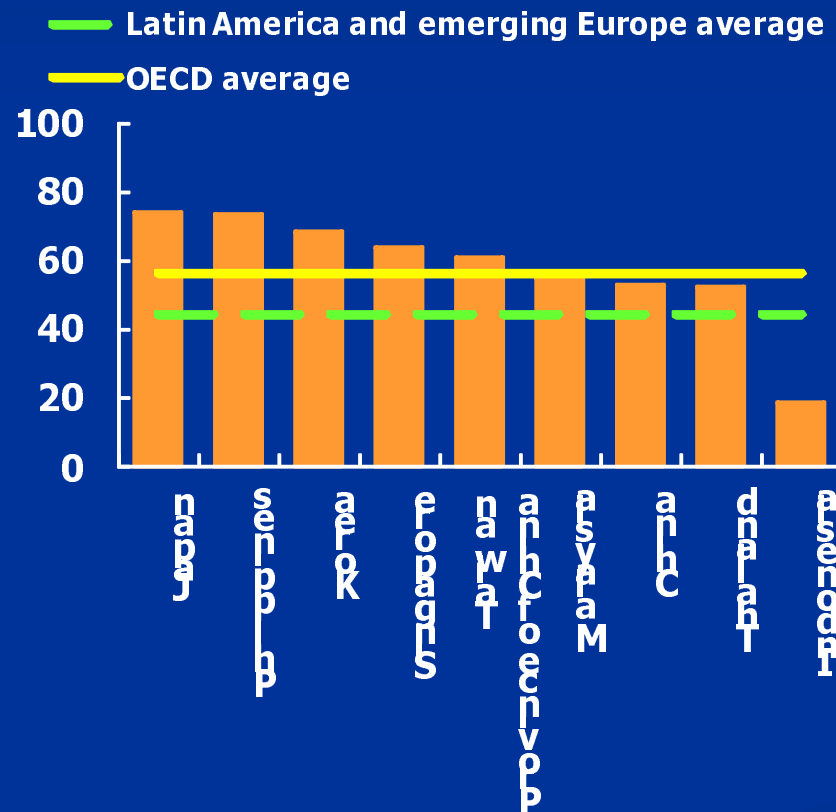
¹ Estimated as the product of (1) share of exports in manufacturing output and (2) share of plant and machinery investment in total GFCF.

Selected Asia: Share of Export Value Added in GDP (percent of GDP)

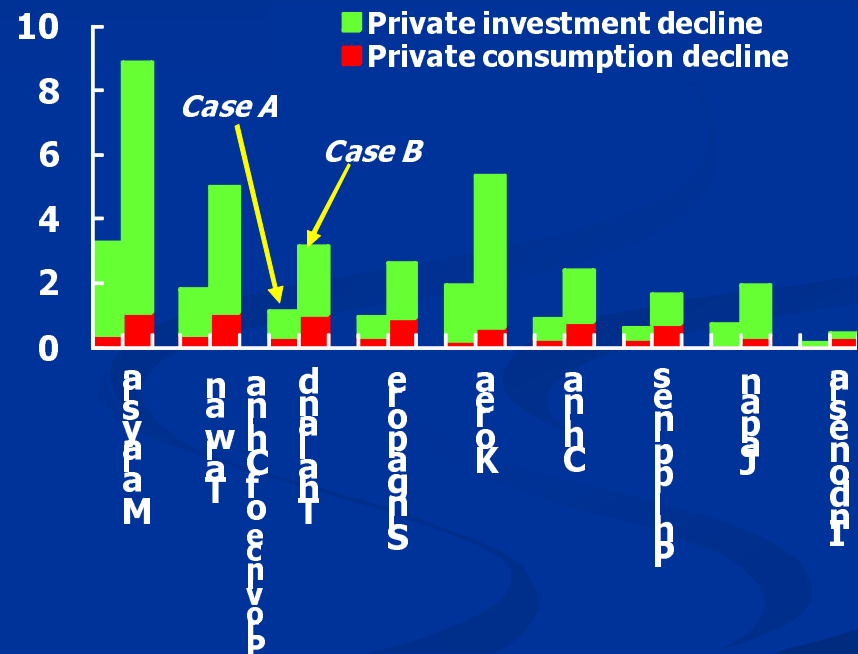


Concentration on higher tech exports made Asia more susceptible to the global financial crisis

Asia: Share of Medium and High-Tech Exports in Total Exports
(percent; average over 2000-08)



Impact on Value Added of Actual Decline in U.S. Private Durables Demand
(percent of GDP)



Case A: Decline in U.S. durable imports impacts U.S. imports from Asian countries in proportion to share of Asia in U.S. imports of consumer durables, and machinery and equipment .

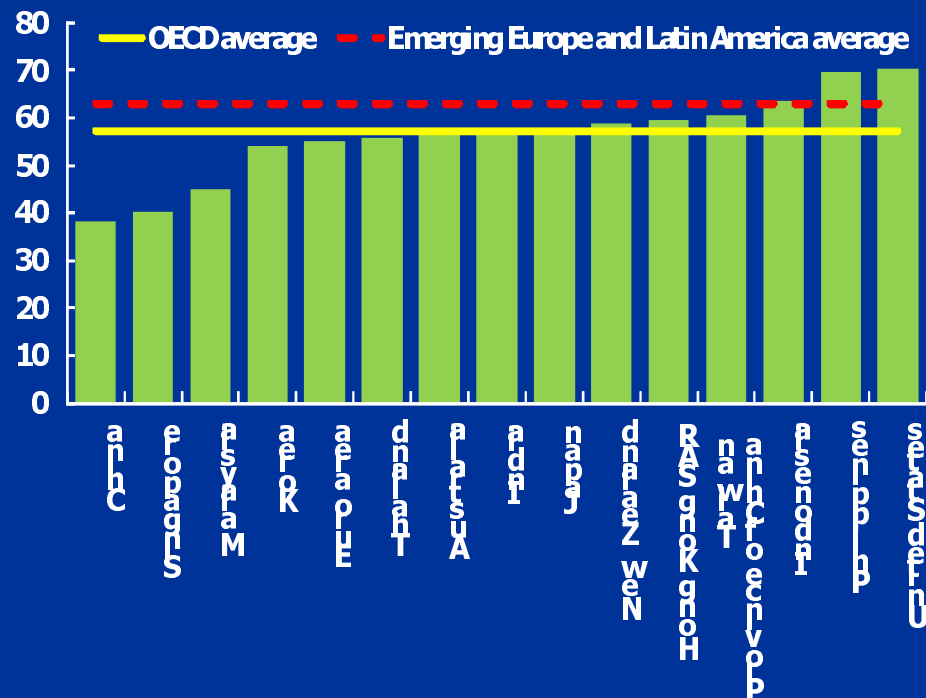
Case B: Decline in U.S. durable imports concentrated in imports from Asian countries.

What does rebalancing mean?

Debate has focused on: Low consumption and an overreliance on the manufacturing sector

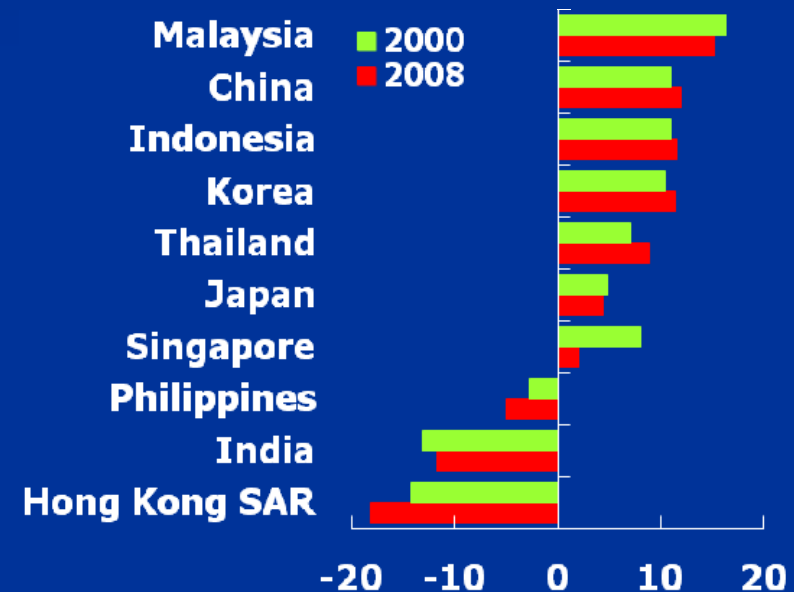
Private Consumption

(percent of GDP; 2004-08 average)



Excess Share of industry in GDP ¹

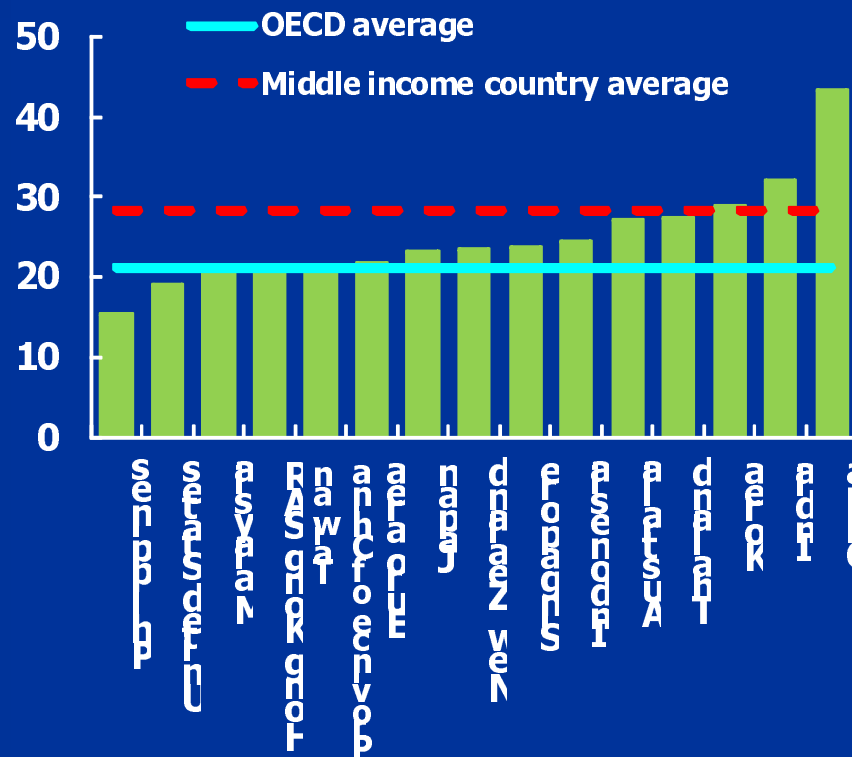
(percentage points; country industry share minus industry share of peer group)



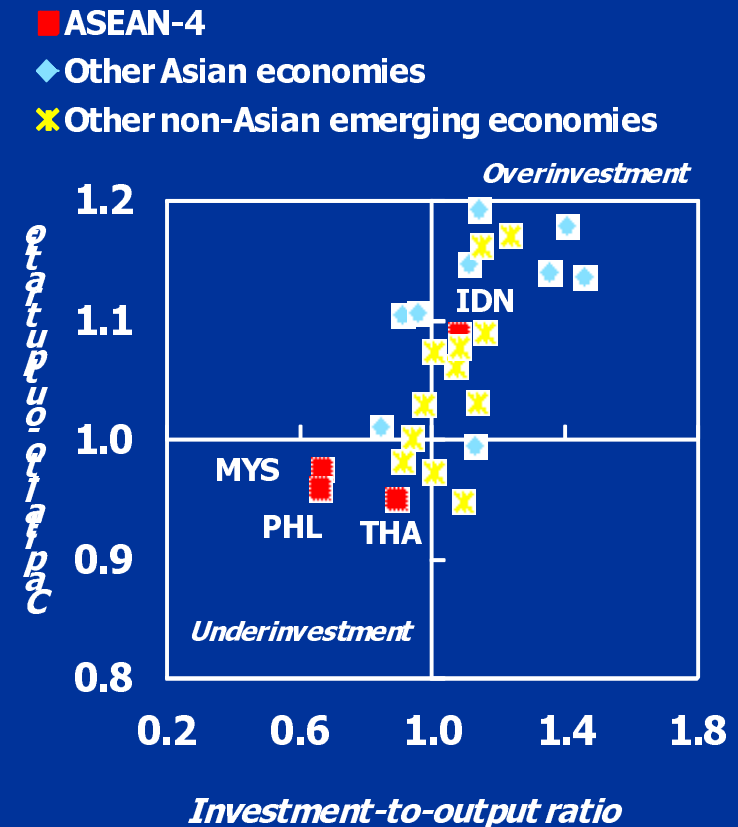
¹ Economies were assigned the following peer-groups: Hong Kong SAR, Japan, Korea, and Singapore (OECD); China, Indonesia, the Philippines, and Thailand (low-and-middle income countries); India (lower middle income countries); and Malaysia (upper middle income countries).

But the focus here is on investment

Asia: Investment
(percent of GDP; 2004-08 average)



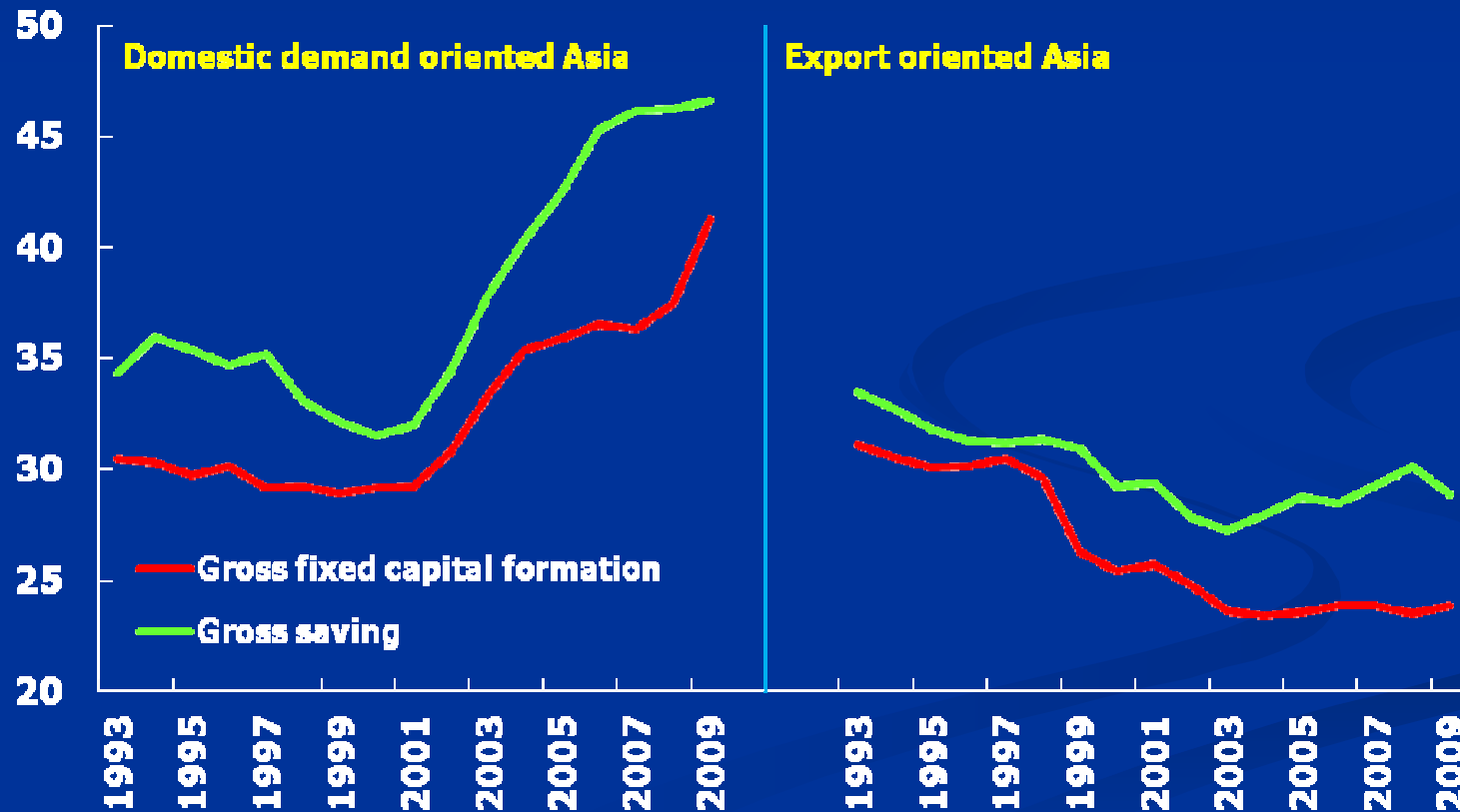
Capital-to-Output and Investment-to-Output Ratio
(relative to steady-state level in 2008)



**What is holding back investment in parts
of Asia?**

Investment has diverged between domestic- and export-oriented Asia

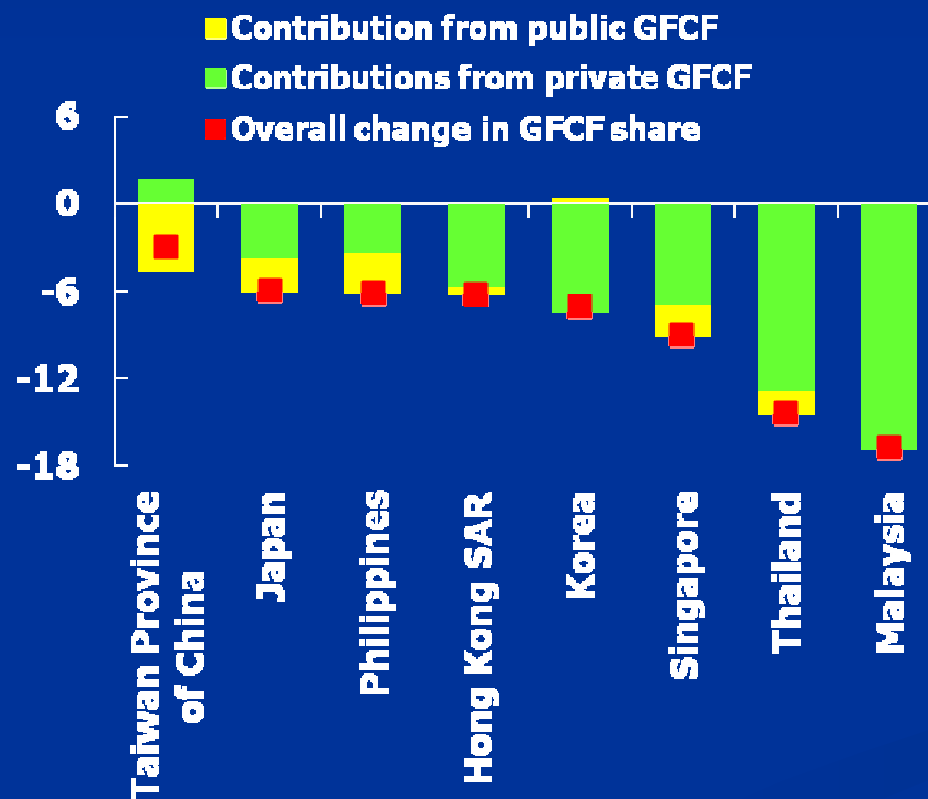
Asia: Gross Fixed Capital Formation and Gross Saving (In percent of GDP)



In export oriented Asia, the slump in private investment has been broad-based

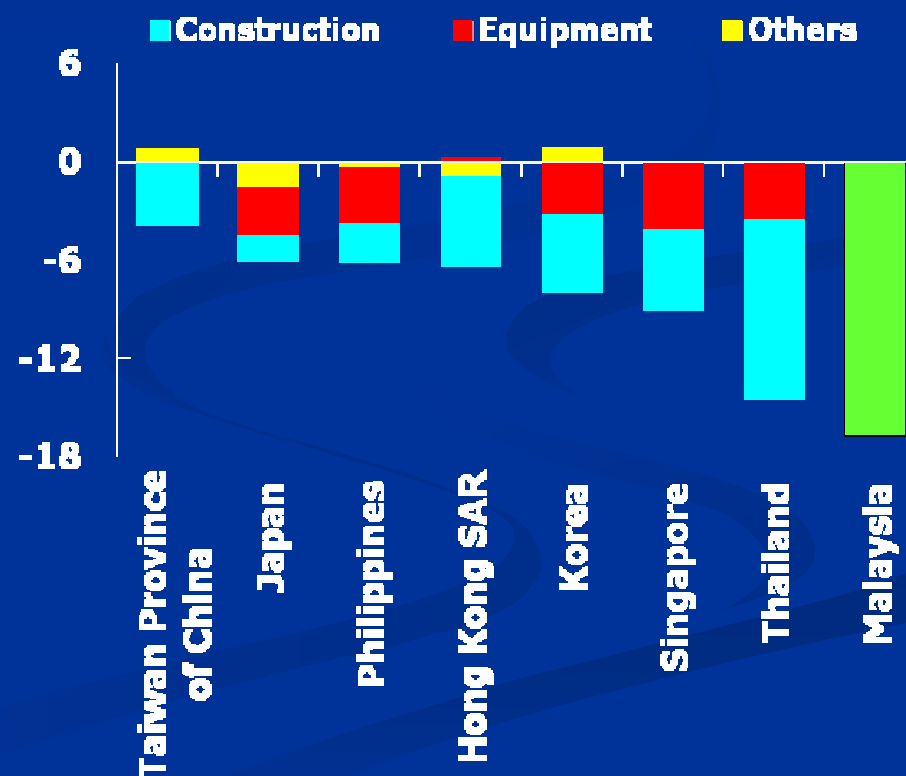
Export-Oriented Asia: Contribution to Change in Average Share of GFCF in GDP

(In percentage points of GDP; change in average shares between 1990-97 and 2000-07)



Export-Oriented Asia: Change in Investment by Type¹

(2000-07 relative to 1990-97; in percent of GDP)

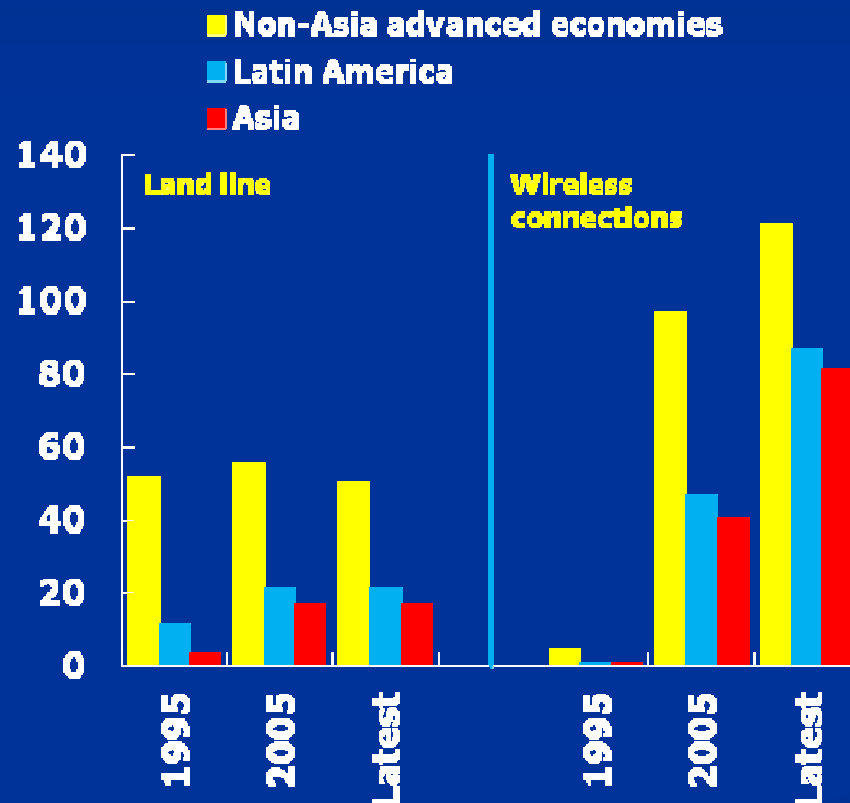


¹ For Malaysia, change in overall GFCF is shown.

But, there is also still an infrastructure gap as public investment has remained too low

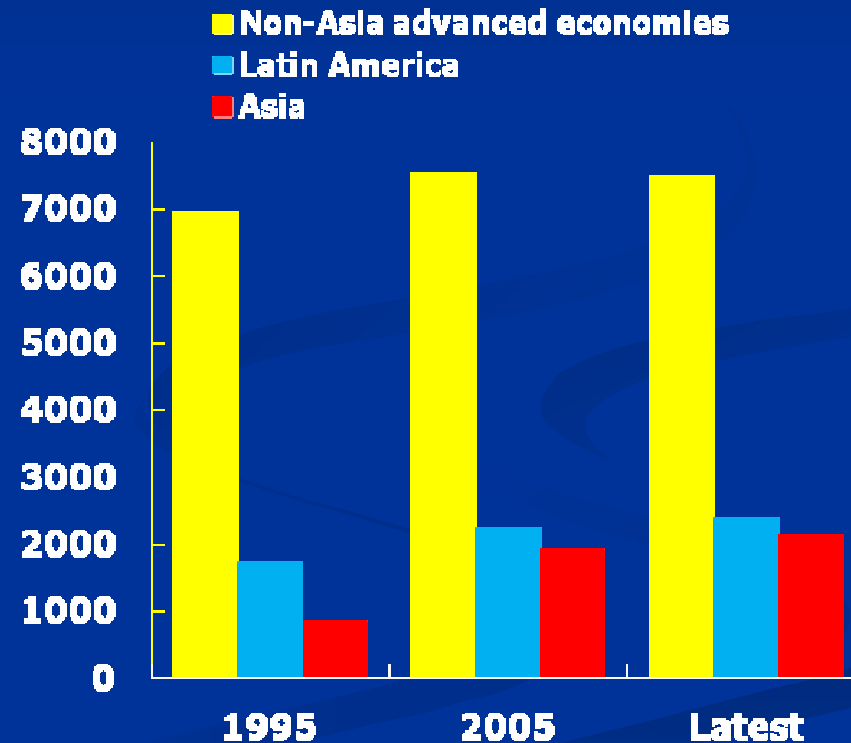
Phone Connections

(Median; connections per 100 people)



Electricity Generation

(Median; in kilowatt hours per capita)

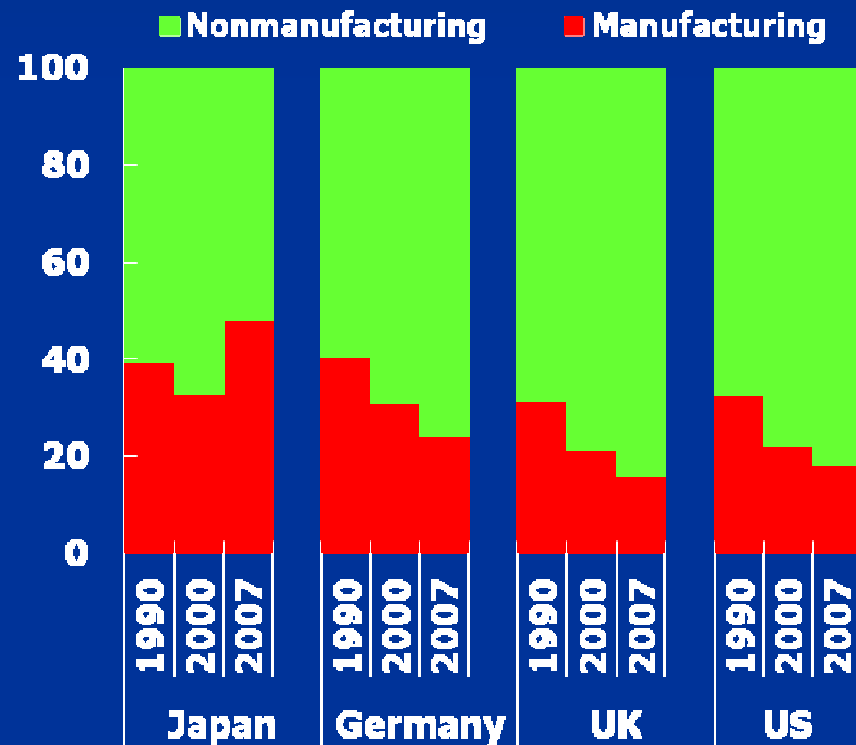


Note: Asia includes ASEAN-5, China, India, and Korea. Latin America includes Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, and Mexico.

Besides the level of investment, there are also important shifts in composition

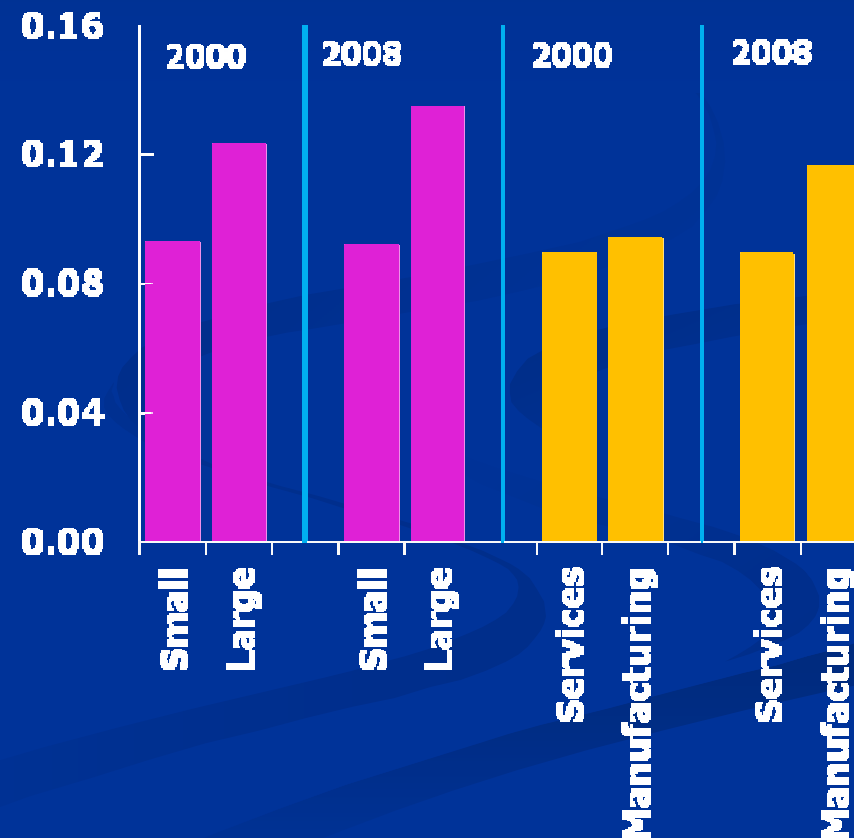
Japan: Composition of Investment By Sector¹

(In percent of total; at constant 1995 prices)



NIEs: Firm Level Investment Rate

(Median investment-to-capital ratio; in percent)

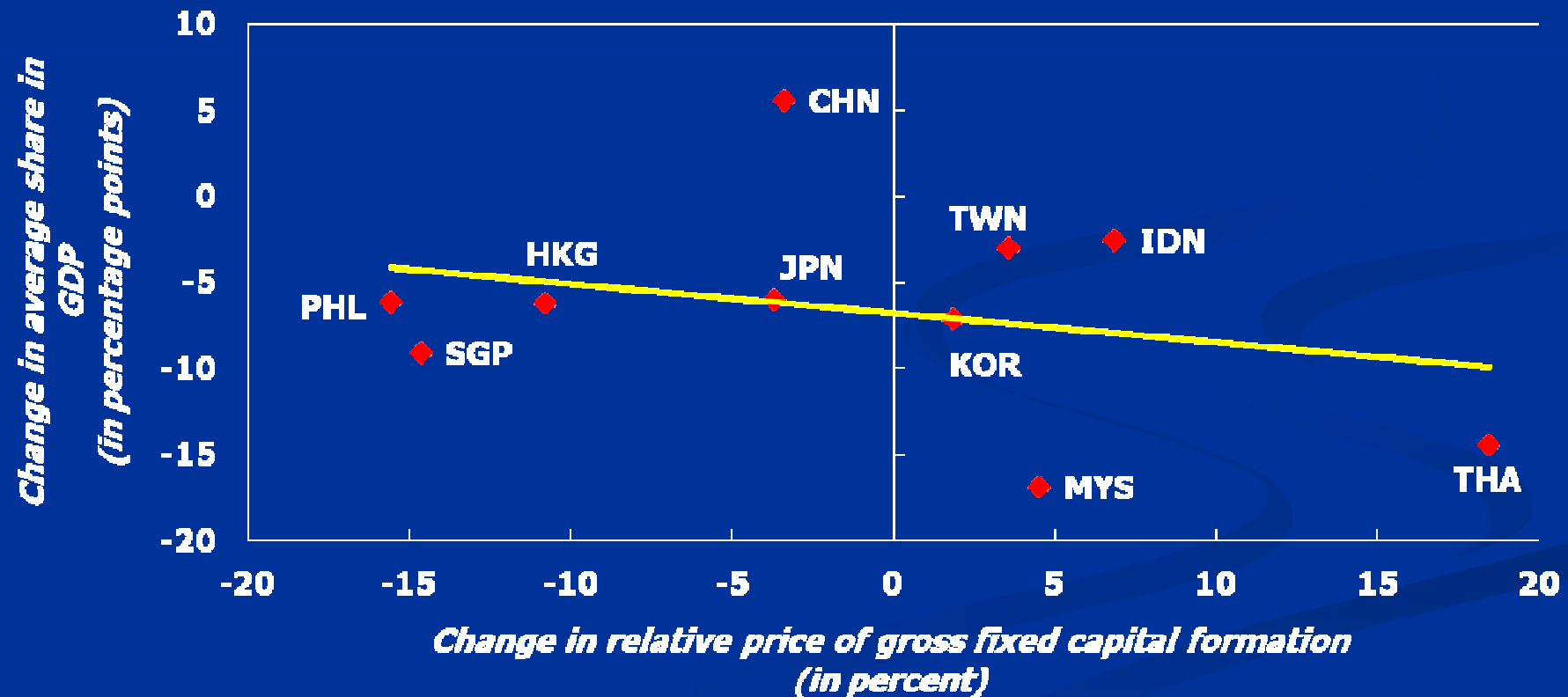


¹ Excluding finance, insurance, real estate, and public utilities.

Relative price effects fail to account for the decline in investment share

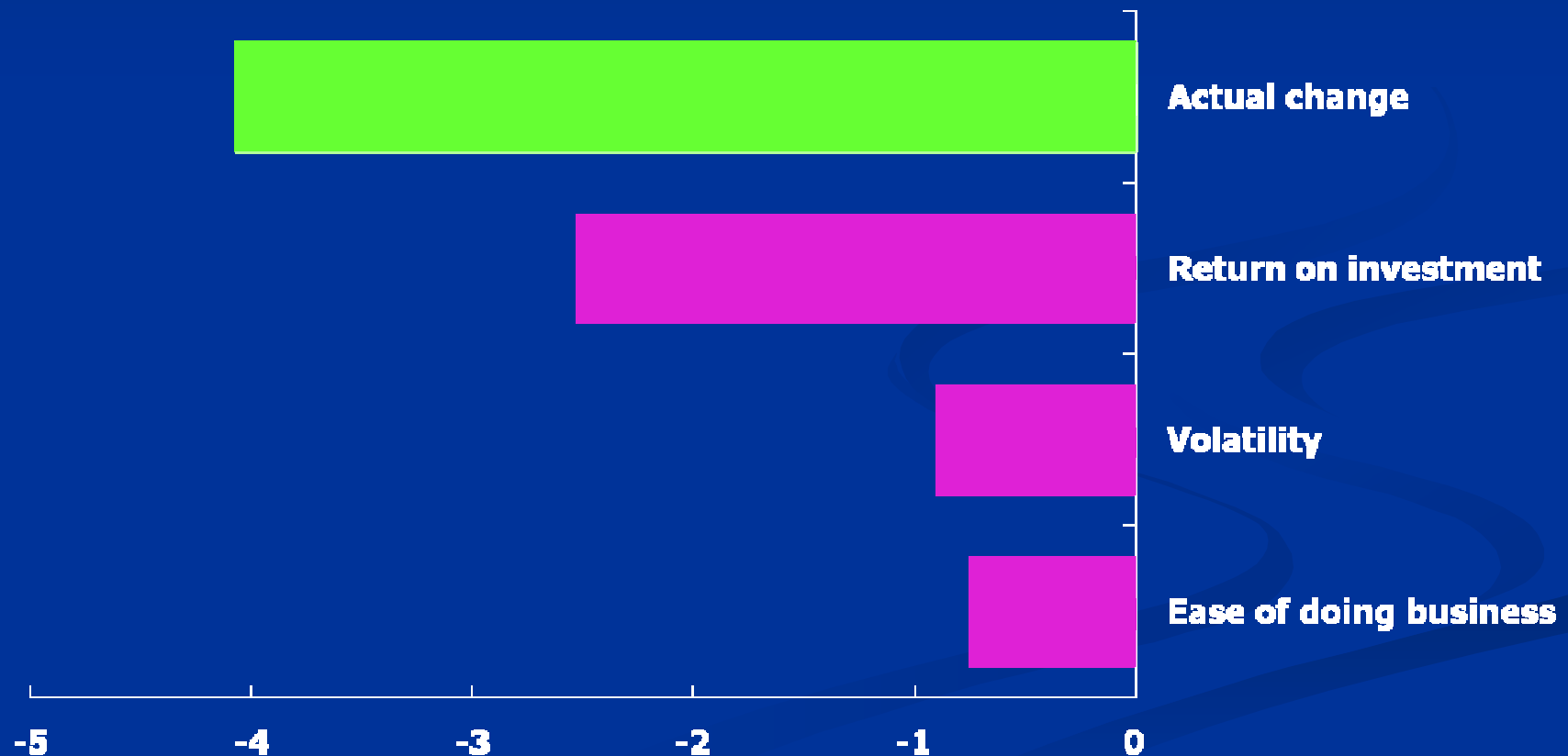
Selected Asia: Gross Fixed Capital Formation – Change in Share versus Change in Relative Price

(Comparison between 1990-97 and 2000-07)



Structural factors that can account for the decline in private investment share

Post Asian Crisis: Contribution to Change in Private Investment
(In percentage point of GDP)



Explaining compositional changes in Japan, NIEs

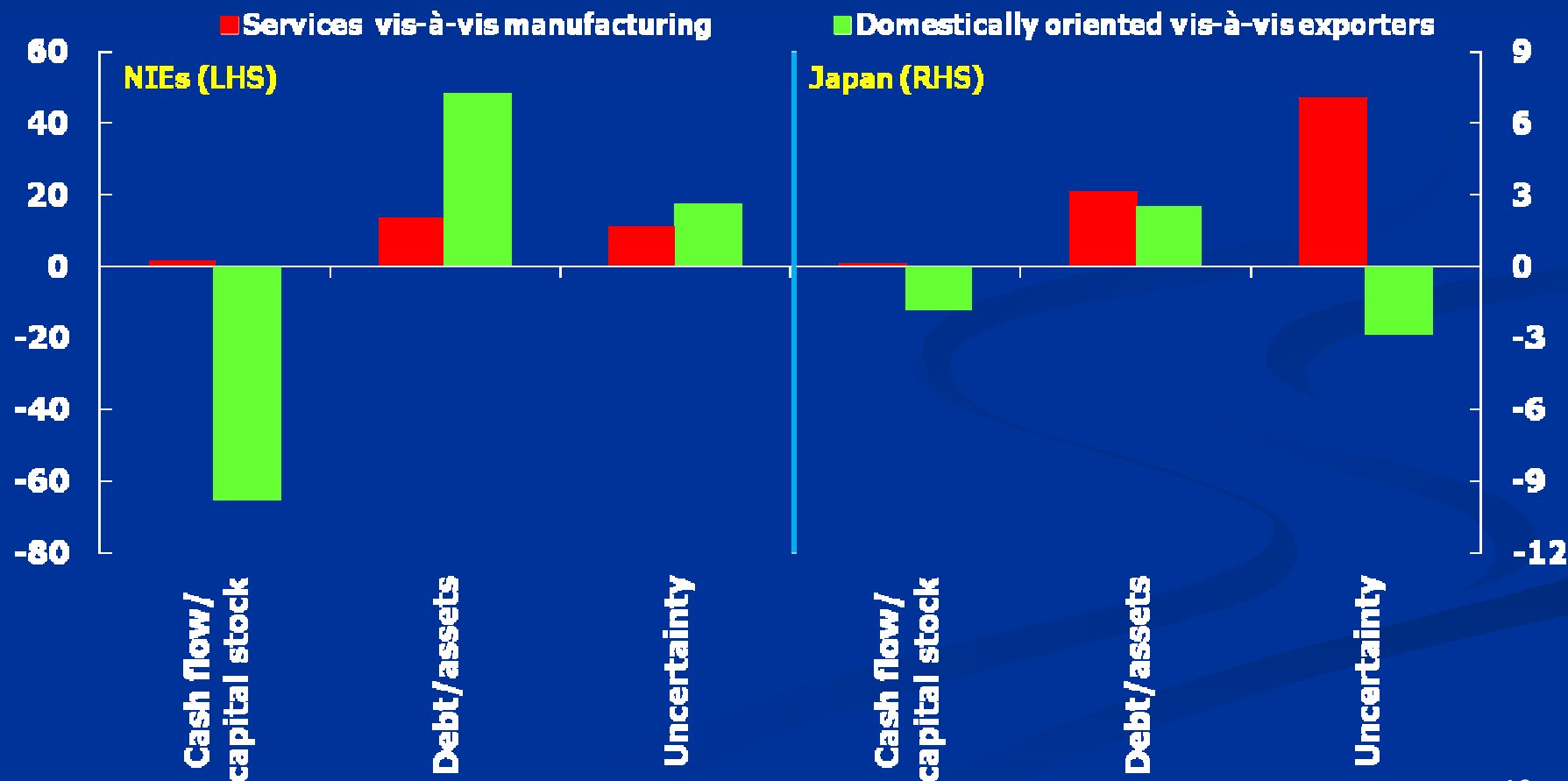
- Post Asian-crisis, greater sensitivity of investment to fundamentals among
 - Domestically oriented compared to exporting firms
 - Service sector compared to manufacturing

- Stronger headwinds to investment faced by
 - Domestically oriented compared to exporting firms
 - Service sector compared to manufacturing

How have underlying fundamentals changed?

NIEs and Japan: Relative Changes in Fundamentals

(Percentage point differential in change in medians between 1990-97 and 2000-07)



As a result, financing constraints bind tighter
on domestically oriented firms

NIEs and Japan: Domestically Oriented Firms

Greater sensitivity to internal cash resources

+

Relative deterioration in internal cash resources



Composition of investment skewed
away from domestically oriented firms

And service sector firms are more affected by volatility

NIEs and Japan: Service Sector Firms

Higher sensitivity to volatility

+

Relative increase in volatility

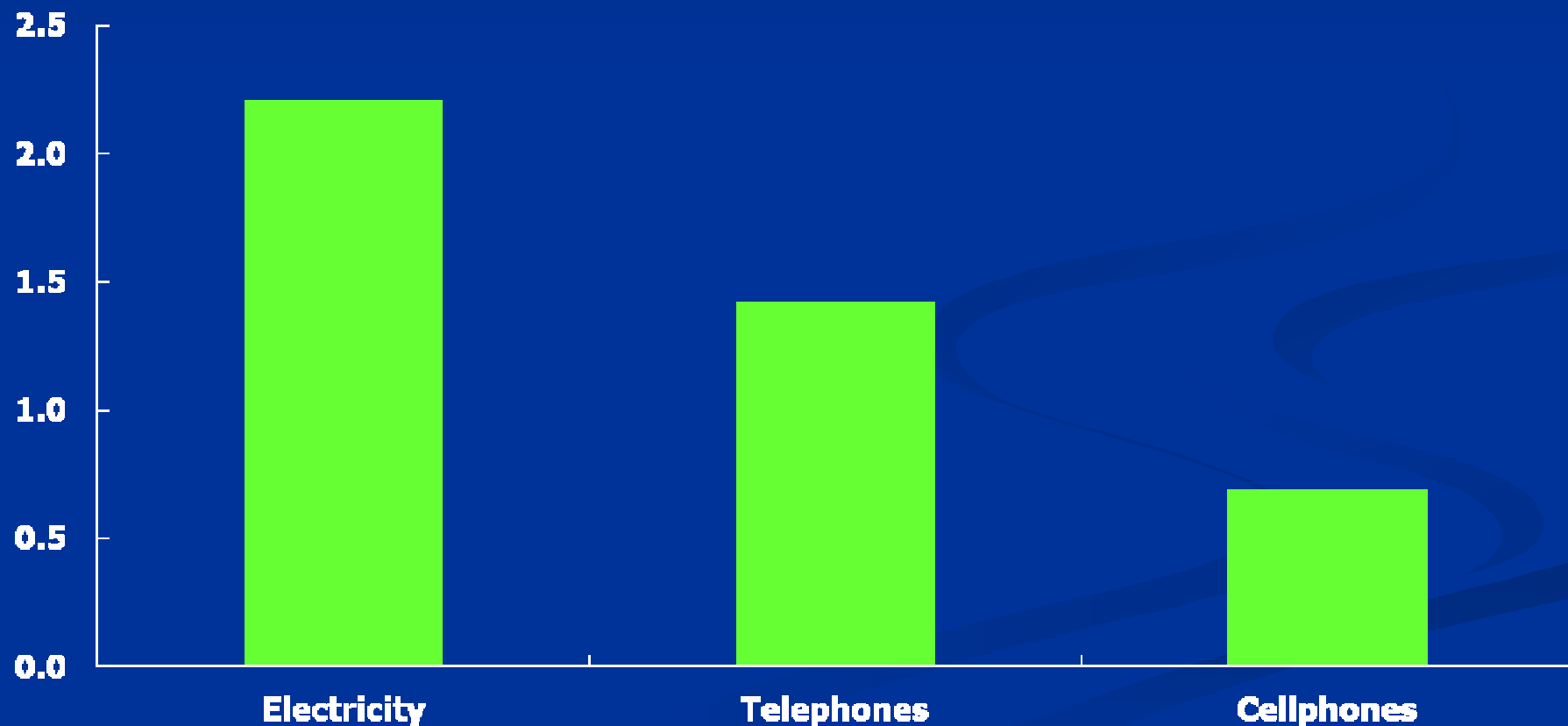


Composition of investment skewed away from service sector firms

What are the policy implications?

More infrastructure spending would crowd in private investment

Effect of Infrastructure on Private Investment Spending – Regression Estimates
(In percent of GDP: increase associated with one percent increase in infrastructure measure)



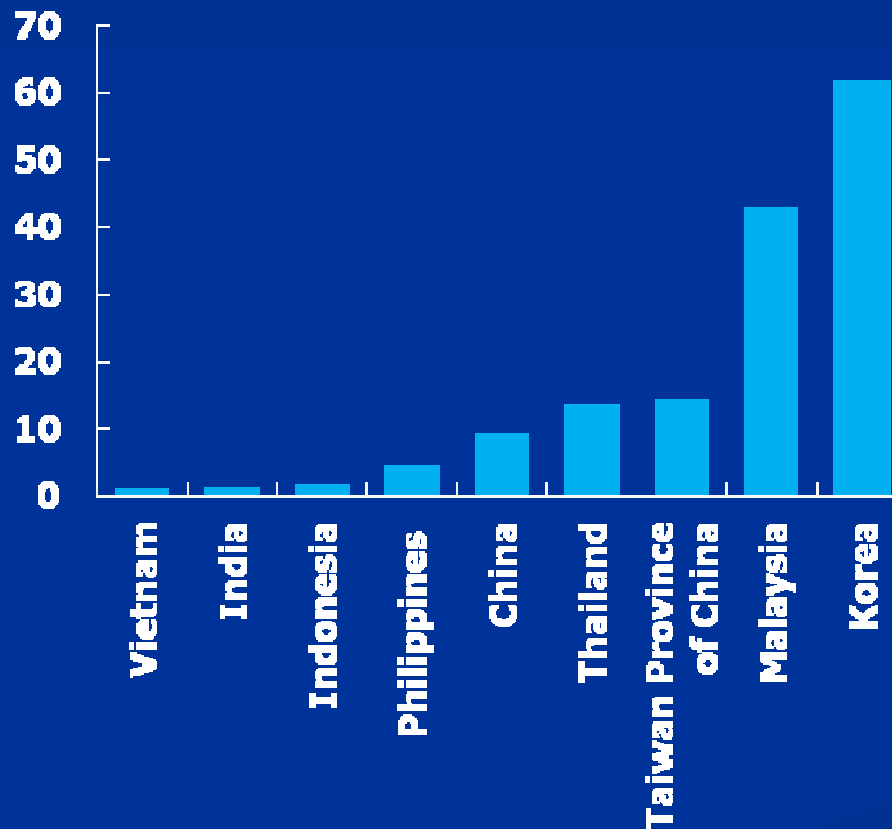
Deeper and more efficient financial markets would alleviate financing constraints

Regression Based Estimates: Determinants of Corporate Investment

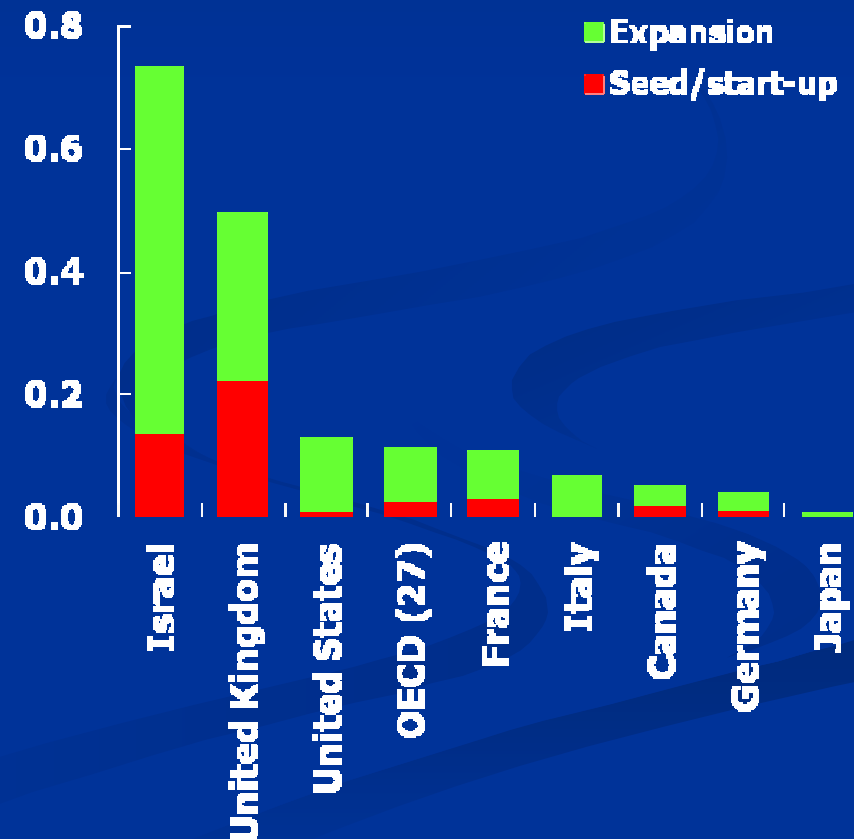
Driver	Region	Type of firm	Effect on investment
10 percent increase in access to external finance	NIEs	Domestically oriented	2 percent
	Japan	Domestically oriented; service sector	2 percent

In fact, outside banks, Asian financial systems have room to develop

Selected Asia: Size of the Corporate Bond Market, 2009
(In percent of GDP)



Selected advanced economies: Venture Capital Investment
(In percent of GDP)



Conclusions

- Asia's growth remains heavily export-dependent
- But the rebalancing process will likely vary across economies, some will need to boost consumption, others will have to focus on investment. Many would need reforms to boost services-sector growth
- The role of investment in Asia rebalancing will vary:
- Where investment share is relatively low :
 - Additional spending on infrastructure
 - Public-Private Partnerships (PPP) and dedicated bond funds
- Where composition of investment share is skewed toward export-oriented sectors:
 - Improve access to finance – reforming collateral laws, widening the pool of venture capital, deepening the coverage of credit bureaus, facilitating corporate restructuring