

Box 2.4. Is Investment in Emerging Asia Too Low?

Investment in emerging Asia fell during the regional financial crises in the late 1990s, and has since remained at these lower levels (except in China). For Hong Kong SAR, Singapore, and Taiwan Province of China, the decline has taken investment rates to levels not seen in over three decades, while investment in Indonesia, Korea, Malaysia, and Thailand, after reaching historical peaks in the early to mid-1990s, has returned to levels comparable to those in the mid-1980s.

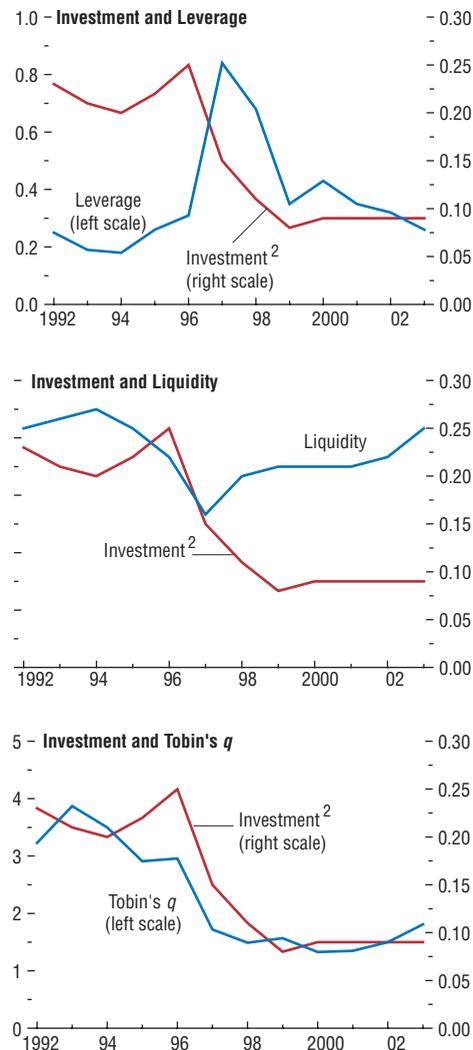
Corporate investment in emerging Asia has fallen particularly sharply—the investment to capital ratio fell by one-half between 1993–96 and 1997–2003—although an increase in public investment has offset part of this decline. The drop in corporate investment in the region reflects a sharp decline in the Tobin's q —as the market value of the corporations fell sharply relative to the replacement cost of capital—and the efforts of corporations to strengthen their balance sheets and streamline their operations as the financial and economic environment deteriorated. In particular, leverage and liquidity have improved significantly since 1997, as shown in the first figure, even if they have not yet reached their pre-1997 levels.¹

These developments raise two related questions: Is investment in emerging Asia now too low? What are the prospects for a rebound in investment?

While these are clearly difficult questions to answer, one way of addressing the first is to compare the investment and capital-output ratios in each country with estimates of their long-run equilibrium (steady-state) levels. To the extent that these countries are still in a transition period (that is, their capital-output ratio is below its long-run level), investment rates should be above their long-run level. Such calculations are shown in the second

Emerging Asia: Investment, Leverage, Liquidity, and Tobin's q ¹

(Regional averages of country medians)



Source: IMF staff calculations.

¹Excludes China.

²Investment-to-capital ratio.

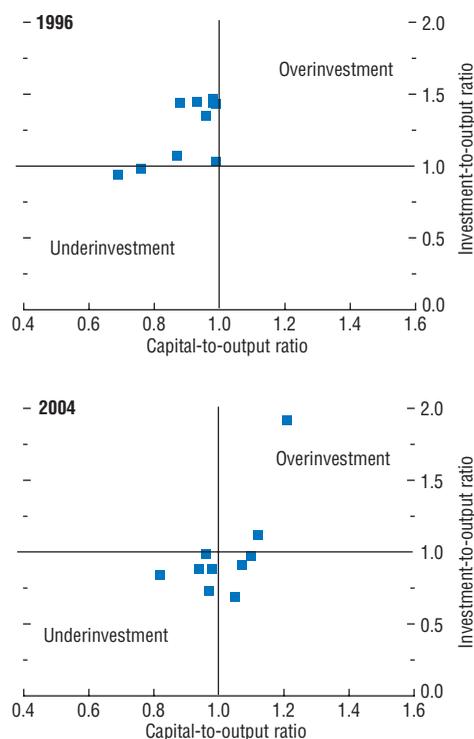
Note: The main authors of this box are Roberto Cardarelli and Marco Terrones.

¹A description of the database is provided in Appendix 2.1.

figure. In making these calculations, a depreciation rate of 5 percent is used in estimating the capital stock (the average depreciation rate for

Box 2.4 (concluded)

Emerging Asia: Capital/Output and Investment/Output Relative to Steady-State Level



Source: IMF staff estimates.

emerging markets in 2004 was about 5 percent,² although in the future this may be too low an estimate given that depreciation rates have been increasing over the past decade owing to the compositional shift in the aggregate capital stock toward short-lived assets such as computers and software).³ A further critical issue is the choice of the steady-state levels of the capital

²Based on consumption of fixed capital from the National Accounts, deflated by the investment deflator.

³A depreciation rate of 7 percent yielded a broadly similar outcome to that shown in the second figure (see Appendix 2.1).

stock and investment. Here, they are estimated from a standard neoclassical growth model, using conservative estimates of capital ratios and potential output growth, although alternatives were also tried and yielded broadly similar results.⁴

In 1996—the year prior to the regional financial crisis—almost all countries were investing relatively more than in the steady state as they increased their capital stock toward its long-run level. This does not preclude the possibility that these countries could have been overinvesting during this period as they moved too quickly toward the long-run level (Sachs and Radelet, 1998). Indeed, for some countries, such as Malaysia, the investment rate in 1996 appears to be consistent with an excessive speed of convergence, as reflected in a capital ratio that in 2004 is higher than its estimated long-term level. For these countries, the fall in investment is a response to the excess capacity built over the past decade. In 2004, however, some countries were investing relatively less than in the steady state despite the fact that their capital stock was below its long-run level (and, therefore, were in the “underinvestment” quadrant). This appears to be the case, in particular, for Indonesia, the Philippines, and Thailand. On the other hand, there is some evidence of overinvestment in China.

Of course such evidence is tentative, and even if investment rates are too low in some countries at present it is difficult to know when they may rebound. On a positive note, Tobin’s q appears to be starting to recover, which, given the close relationship with investment in the region and the improved balance sheet position of corporations, suggests that the investment outlook may be turning more positive.

⁴For example, broadly similar results were achieved when steady-state values of capital and investment ratios were set as the averages for industrial countries over an eight-year period (for example, for 2004, the average of ratios in industrial countries over 1996–2004). For a description of the methodology, see Appendix 2.1.

However, the low level of investment may also reflect structural changes in these economies, such as the shift toward less capital and more skill- and knowledge-intensive type of exports, particularly information technology-related products and services (Lee, McKibbin, and Park, 2004) and the start of a demographic transition toward an older population structure (see Box 2.3). Both factors suggest that emerging Asian countries could face a slower pace of

capital accumulation in the future than they have in the past.⁵

⁵Anecdotal evidence suggests that another potential “structural” explanation for the lower investment rate in many emerging Asian countries involves the relocation of production facilities from these countries to China. Unfortunately, lack of data on bilateral foreign direct investment flows that distinguish between greenfield investment and mergers and acquisitions prevents any quantitative estimate of the phenomenon.

economic events, such as oil price increases or global technological progress.

- A factor common to each of the five variables in the model. For instance, the saving factor captures the common shocks affecting saving rates across all regions (reflecting, for example, the ongoing process of financial innovation) but not other variables.
- A region-specific factor that reflects common shocks affecting the five variables within each region. For instance, the process of European integration may affect all economic variables in the European countries, but not in other regions.

- An idiosyncratic term capturing region-specific shocks to each individual variable in each region.

The results from the dynamic factor model indicate that a high proportion of the variations in saving and investment rates in industrial countries are explained by global factors (defined as the sum of the world factor and the variable-specific factors—see Table 2.3). Indeed, much of the recent cyclical evolution in saving and investment in these countries—with the important exception of Japan—can be explained by the global factor, suggesting that industrial countries have been subject to

Table 2.3. Variance Decomposition

	Output (y)	Short-Term Interest Rate (r)	Current Account (CA)	Saving Rate (S)	Investment Rate (I)
Average for all countries					
Global	37	51	36	39	34
World	18	8	7	24	21
Aggregate	19	43	28	15	14
Region plus idiosyncratic	63	48	63	60	65
Average for industrial countries					
Global	57	80	32	71	59
World	27	10	7	45	35
Aggregate	30	70	25	26	23
Region plus idiosyncratic	43	20	43	28	41
Average for emerging market and oil-producing countries					
Global	17	23	39	7	10
World	8	7	8	3	6
Aggregate	9	16	32	4	4
Region plus idiosyncratic	83	77	83	92	89

Source: IMF staff calculations.