

This chapter contains three essays on current policy issues. Each essay addresses different aspects of the impact of globalization on economies and each provides some new empirical evidence. Globalization is one of the major forces affecting economic behavior, and its effects can be seen across a wide range of topics. In many cases, however, there has been relatively little empirical work done to measure its impact on underlying economies. The empirical results reported here are by necessity preliminary, since the phenomena being examined are so recent, but may still provide useful insights to policymakers.

The first essay examines how the correction in technology stocks affects real activity. A major development in the world economy over the last year has been the global correction in technology stocks in both advanced and emerging markets, which has been the main force in reducing equity values. The essay explores whether technology stocks have a different impact compared to nontechnology stocks on real consumption, real investment, and as a leading indicator of industrial production.

The second essay examines exchange rate movements across the three major currencies—the U.S. dollar, the euro, and the yen. The recent weakness of the euro against the dollar appears to defy conventional exchange rate analysis—for example, increases in euro area interest rates have been associated with weakness in the currency. This has led many commentators to suggest that the bilateral rate is being driven by portfolio equity flows reflecting expectations of higher profits and output growth in the United States. This explanation, while plausible, seems difficult to reconcile with the fact that the yen has remained relatively stable against the dollar at a time when expected growth rates have been marked down. The essay examines how the diverging trends between the euro-dol-

lar and the yen-dollar exchange rate can be reconciled.

The final essay looks at open trading regimes, focusing on sub-Saharan Africa. Sub-Saharan Africa's growth rate per capita has been negative over the past 25 years, and one of the leading explanations for this disappointing result is that the region did not embrace openness to international trade. Over the last decade, however, there have been substantial moves toward such opening, including a host of regional trade initiatives. The essay evaluates the success of these initiatives, suggests how policymakers could build on the existing momentum to open African trade, and examines the role of advanced economies in lowering their barriers to Africa's exports.

### Impact of the Global Technology Correction on the Real Economy

Stock market valuations have risen significantly in the 1990s, and advanced economies, in particular, have experienced dramatic increases in their main stock price indices (Figure 2.1). A striking feature of developments in the late 1990s has been the global rise and fall in valuations of technology stocks, which raises the question of what these swings—especially the latest corrections in technology valuations—imply for global activity. This section describes recent trends in global equity markets and presents some preliminary results as to whether changes in technology stock valuations have a different impact on consumption, investment, or future output trends compared with the effect from the rest of the stock market.

### Recent Developments

Impressive world growth at the turn of the millennium and, in particular, the strong eco-

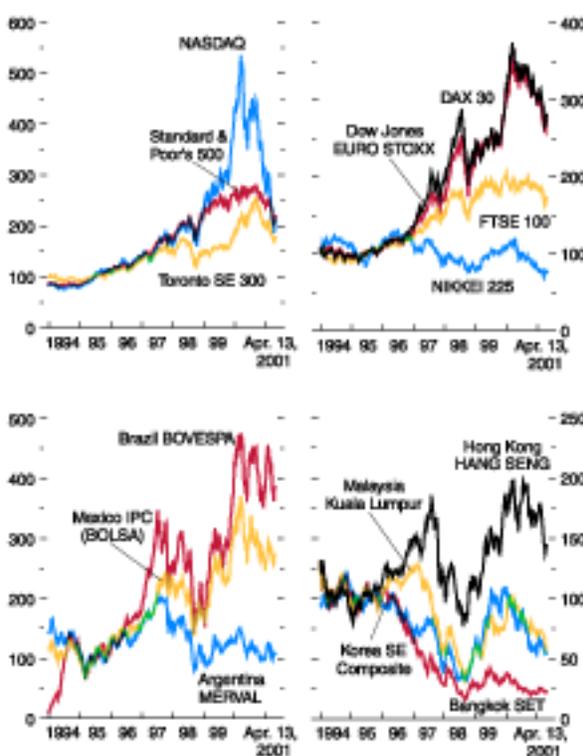
conomic performance of the U.S. economy in the late 1990s, generated a rally in stock valuations from 1998 that came to a peak in early 2000. Subsequently, stock prices began falling in most countries and continued sliding into the current year. Technology stock valuations have fallen most; for example, the technology intensive NASDAQ index fell by about 70 percent between early March 2000 and early April 2001.

The run-up and subsequent fall in technology stocks (called Telecommunication, Media, and Information Technology and Software equities in this essay and referred to as TMT hereafter) occurred in a wide range of markets, not just the United States (Figure 2.2).<sup>1</sup> Furthermore, TMT returns have become increasingly linked over the last decade (Figure 2.3).<sup>2</sup> For the non-TMT segment as a whole, correlation also rose from the mid-1990s to early 1999, although it has fallen somewhat subsequently. However, correlations across individual non-TMT segments remain relatively low.<sup>3</sup> In addition, domestic correlations between weekly returns in the TMT segment and the rest of the stock market have gone down, especially for the United States and Europe.

The fall in TMT stock valuations throughout 2000 was a worldwide phenomenon, but this masks important regional differences (Figure 2.4). First, stock markets are different in size relative to GDP. The United States has throughout the period had a relatively large stock market

**Figure 2.1. Equity Price Indices**  
(1995=100)

Stock prices rallied between late 1999 and early 2000, but have come down since in most countries.



Source: Primark Datastream.

<sup>1</sup>The data on these sectors used in this essay come from Datastream, which provides consistent data across a wide range of countries. For more on the strengths and weaknesses of the data see Chapter II of the October 2000 *World Economic Outlook*.

<sup>2</sup>Calculated as a rolling 100-day correlation window. A closer look at the return correlation of components of TMT reveals that correlations have been generally rising most in the telecommunication and the information technology and software sectors, but less so in the rather more diverse media segment.

<sup>3</sup>See Robin Brooks and Luis Catão, "The New Economy and Global Stock Returns," IMF Working Paper 00/216 (Washington: International Monetary Fund, 2000), who find evidence of a much larger global common factor driving returns in TMT segments of stock markets than in other sectors.

valuation, and at the end of 2000 capitalization stood at around 130 percent of GDP, with about one-third in TMT shares, while Canada has a lower capitalization ratio but a similar composition. In the major European economies stock market capitalization varies widely as a ratio to GDP, with the United Kingdom well above the United States ratio, and the three large continental economies well below. For Europe and Japan, TMT stock valuations make up 20 to 25 percent of overall valuations. In the emerging market economies of Asia, markets are on average about the same size as in continental Europe, whereas in Latin America they are, with a few exceptions, significantly smaller. For emerging markets in both Asia and Latin America, the size of the TMT stock market capitalization as a share of GDP remains in single digits for most countries.

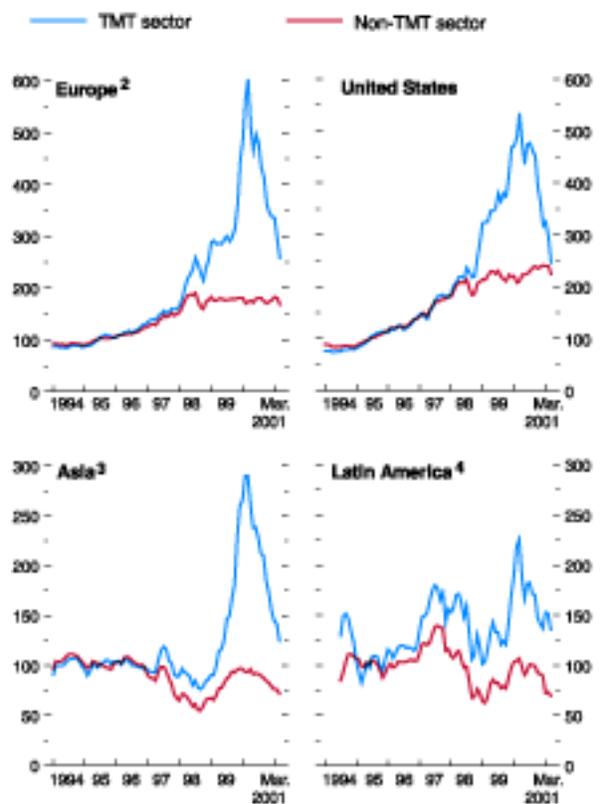
A second regional difference between stock markets is the composition of the TMT sector. In Europe, telecommunication companies constitute the largest share of the TMT sector, although the share of information technology (i.e., hardware manufacturing) and software has increased since mid-1999.<sup>4</sup> In contrast, in the United States the valuation of the TMT sector throughout the 1990s has been more broad-based in the information technology and software sectors. In the Asian countries, the technology sector has been broadly equally divided between telecommunication and information technology and software stocks, reflecting the significant production of semiconductors and other computer components. Finally, in Latin America, the TMT sector is dominated by telecommunication companies.

These differences in size and composition of the TMT sector are important, not only because

<sup>4</sup>Relative market valuation is not the same as relative production, but it reflects financial markets' valuation of the relative potential of the components of the TMT sector. These data only measure companies that are listed on stock exchanges, not privately held firms. This may bias the data in particular for emerging markets in Asia, where a substantial number of firms are not listed on the stock exchange.

**Figure 2.2. Stock Price Indices for Technology, Media, and Telecommunications (TMT) vs. Non-TMT Sector<sup>1</sup> (1995=100)**

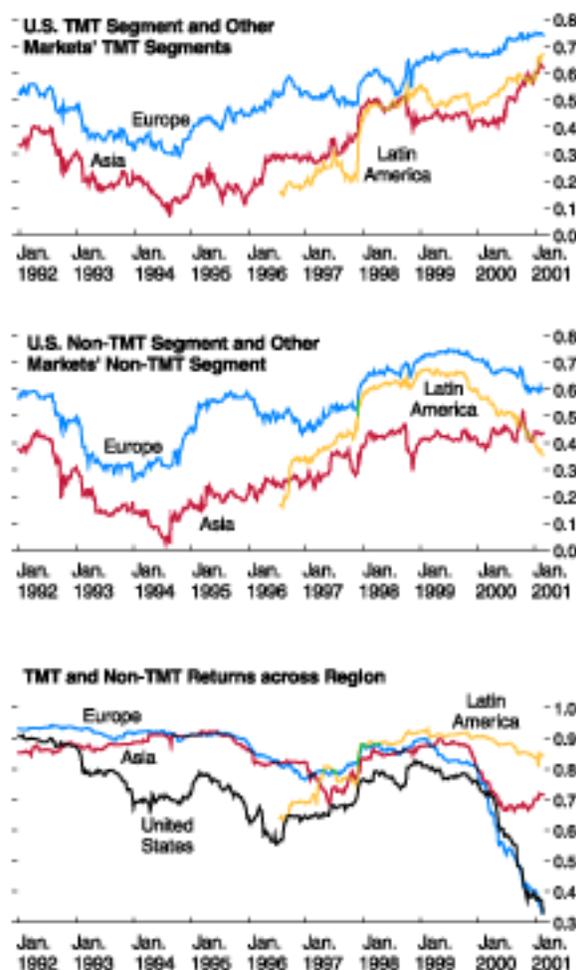
A global phenomenon is the rise and fall in technology stock valuation.



Source: Primark Debastreem.  
<sup>1</sup> Weighted by market value.  
<sup>2</sup> Includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.  
<sup>3</sup> Includes China, Hong Kong SAR, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand.  
<sup>4</sup> Includes Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

**Figure 2.3. Correlation Between Technology, Media, and Telecommunications (TMT) and non-TMT Returns Across Regions<sup>1</sup>**

Correlations between technology stock returns have increased globally, but domestic correlations between technology returns and nontechnology returns have fallen.



Sources: Primark Datastream; and IMF staff estimates.  
<sup>1</sup>Calculated as a rolling 100-day correlation window.

they influence the long-run growth rate of the regions but also because they may have a different impact on the real economy. For example, the relatively higher concentration of telecommunications in Asia, Latin America, and Europe makes these regions less vulnerable to changes in views on the “new” economy, but more vulnerable to sentiment surrounding the telecom sector. In addition, given the relatively small size of TMT sectors in Asia and Latin America, the impact on aggregate consumption and investment will probably be smaller than in continental Europe and the United States, Canada, and the United Kingdom.

### Stock Market Valuations and Economic Activity

As can be seen in Table 2.1, the magnitude of the recent fall in stock market values (measured relative to GDP) has been severe, especially in the United States, Canada, and Japan, and has been focused in the TMT sector. Indeed, in many countries non-TMT values rose over this period. Given the very different behavior of these two sectors, a natural question is whether changes in TMT valuations have a different impact on consumption, investment, and future trends in output than the rest of the stock market.

Changes in stock market valuations affect consumption through wealth effects and investment through the cost of capital.<sup>5</sup> Identifying the exact channels of transmission from TMT and non-TMT valuations to the real economy is difficult, and there is not yet an established literature analyzing these phenomena. The following constitutes a preliminary attempt to assess how the two stock market segments affect consumption and investment, and whether they have different properties as leading indicators of the business cycle.

<sup>5</sup>See Chapter III of the May 2000 *World Economic Outlook*. An overview of the channels of transmission between the real economy and stock prices is also provided in Peter Christoffersen and Torsten Sløk, “Do Asset Prices in Transition Countries Contain Information About Future Economic Activity?” IMF Working Paper 00/103 (Washington: International Monetary Fund, 2000).

**Table 2.1. Change in Market Capitalization from March 2000 to March 2001**  
(In percent of GDP)

	Total Market	TMT	Non-TMT
United States	-19	-28	9
Canada	-20	-28	8
Japan	-32	-19	-15
Germany	-15	-11	-4
France	-12	-9	-3
Netherlands	-28	-28	-2
United Kingdom	-27	-32	5
Argentina	-2	-3	1
Brazil	-7	-5	-1
Mexico	-5	-1	-4
Indonesia	-9	-2	-7
Thailand	-8	-1	-6

Note: The numbers may not add up due to rounding.

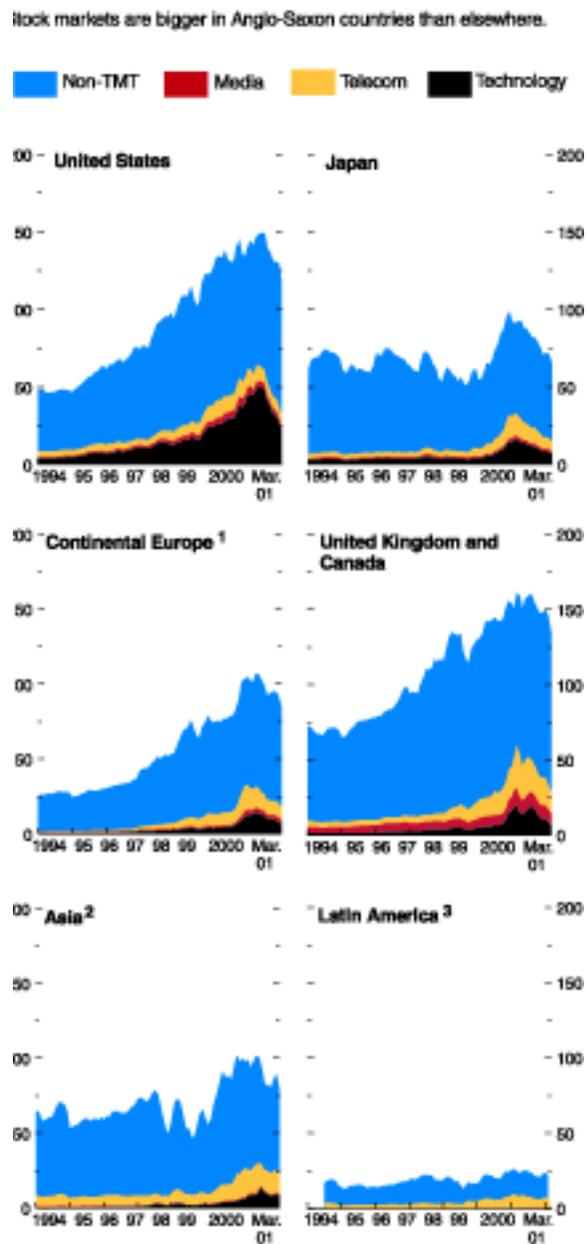
**Effect on Consumption**

A change in stock prices affects private consumption through changes in households' income and wealth. The magnitude of the impact generally will be larger the greater the share of households owning stocks and the larger the stock market relative to GDP. In the United States and several other English speaking countries, these factors are quite pronounced, whereas this is less the case in continental Europe. In Latin America and Asia there are only a limited number of households owning stocks and markets are on average smaller and less liquid, which suggests that the impact from stock price changes to consumption is smaller than in the advanced economies.

It is at least plausible to suppose that the impact of changes in the value of TMT and non-TMT equities could be different given that there is considerable evidence that households have different propensities to consume out of stocks and other types of wealth.<sup>6</sup> However, the sign of

<sup>6</sup>For example, Flint Brayton and Eileen Mauskopf, "Structure and Uses of the MPS Quarterly Econometric Model of the United States," *Federal Reserve Bulletin*, Vol. 73 (February 1987), pp. 93-109, find that the propensity to consume out of changes in stock valuations is about half that of other types of wealth. For a more recent documentation of the FRB/US model see David Reifschneider, Robert Tetlov, and John Williams, "Aggregate Disturbances, Monetary Policy, and the Macroeconomy: The FRB/US Perspective," *Federal Reserve Bulletin*, January 1999, p. 1-19.

**Figure 2.4. Technology, Media, and Telecommunications (TMT) as a Share of GDP (Percent)**



Sources: Primark Databstream; and IMF staff estimates.  
<sup>1</sup> Includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.  
<sup>2</sup> Includes Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand.  
<sup>3</sup> Includes Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

**Table 2.2. Impact of a Rise in Equity Valuations on Consumption**  
(Increase in real U.S. dollar spending from a one U.S. dollar increase in equity values)

	TMT Capitalization	Non-TMT Capitalization	Total Market <sup>1</sup>
Average North America and United Kingdom	<b>0.04</b>	<b>0.05</b>	<b>0.05</b>
Average continental Europe	<b>0.04</b>	<b>0.01</b>	<b>0.01</b>
Japan	0.06	<b>0.13</b>	<b>0.12</b>

Note: Bolded estimates are statistically significant. North America and United Kingdom covers the United States, Canada, and the United Kingdom and "continental Europe" covers Germany, France, and the Netherlands. Effect after 2 years. A reduced-form vector autoregression was estimated for each country over the period 1990: 1 to 2000:10 with monthly retail sales, real TMT stock market capitalization, real non-TMT stock market capitalization, and industrial production. Three lags were used and all variables are in logs. The two year effect was calculated for each country as the level of the impulse-response function after 24 months. The effect of the experiment was calculated using private consumption for 2000 and market capitalization in December 2000. For the details of the statistical analysis see Hali Edison and Torsten Sløk: "Wealth Effects and the New Economy" IMF Working Paper (Washington: International Monetary Fund, forthcoming).

<sup>1</sup>Total Market is the effect of a one U.S. dollar increase, where the one dollar increase is split between TMT and non-TMT using their share of total stock market capitalization in December 2000.

this effect is unclear. On the one hand, TMT equities are more volatile, and households may view them as risky investments, implying a smaller propensity to consume. On the other hand, the increasing use of stock options and bonuses based on performance as a means of paying employees in the technology sector could imply a higher propensity to consume from changes in TMT share values.

There has been a large amount of casual evidence linking changes in TMT equity prices to consumption, but much less formal work on this issue.<sup>7</sup> Accordingly, the IMF analyzed the impact of stock market valuation on consumption, focusing on differentiating between the effect from TMT and non-TMT stock market valuations. The analysis examined the interaction between monthly retail sales, real TMT stock capitalization, real non-TMT stock capitalization, and industrial production (as a proxy for income) over the period January 1990 to October 2000.<sup>8</sup> The short sample period reflects the recent emer-

gence of the TMT sector as an important factor in stock markets. The analysis was limited to seven advanced economies; United States, Canada, and the United Kingdom, three continental European countries (Germany, France, and the Netherlands), and Japan, because in emerging markets the quality and coverage of retail sales data is limited and, as discussed above, stock market valuations are smaller.

Table 2.2 reports the results of an increase in TMT and non-TMT valuations on consumption after two years (a typical time period for households to react to increases in wealth). Given the uncertainty in estimates for individual economies that are seldom individually significant, it is most useful to report estimates for broad groups of countries, namely North America and United Kingdom and the three continental European countries, as well as for Japan. For North America and United Kingdom, the results indicate that an increase of one U.S. dollar in TMT stock market valuation raises consumption by 4 cents. The opposite also holds, with a \$1 decline resulting in a 4-cent fall in consumption. A similar change in non-TMT values changes consumption by 5 cents (both are statistically significant). Studies for the United States

<sup>7</sup>See, for example, HSBC, *World Economic Watch* (February 2, 2001), p. 5; Morgan Stanley Dean Witter, *Global Equity Research*, (February 1, 2001), p. 4; and Bridgewater *Daily Observations* (January 4, 2001), p. 1.

<sup>8</sup>A reduced-form vector autoregression (VAR) was estimated with the logarithms of retail sales, real TMT stock market capitalization, real non-TMT stock market capitalization, and industrial production. Using stock price indices instead of market capitalization did not change the results significantly. A VAR was chosen as it presents a flexible and simple way of analyzing the underlying characteristics of data. Based on evidence from U.S. data, it is assumed that half of the estimated elasticities for retail

sales can be applied to aggregate consumption in order to find the aggregate cents-per-dollar impact. For the details and robustness checks of the statistical analysis, see Hali Edison and Torsten Sløk, "Wealth Effects and the New Economy," IMF Working Paper (Washington: International Monetary Fund, forthcoming).

have found a total stock market wealth effect between 3 to 7 cents, and the estimates found here suggest that the propensity to consume out of total stock market wealth has been in this range in the 1990s, so, despite their relative imprecision, the results appear broadly plausible.<sup>9</sup> In the continental European countries an increase (decrease) in non-TMT equity values of one U.S. dollar is estimated, on average, to lead to an increase (decrease) in consumption of 1 cent, consistent with the view that wealth effects are generally less important in these countries. For TMT the effect is higher, statistically significant, and similar to the impact estimates for North America and United Kingdom. As TMT stock market valuations in continental Europe are significantly smaller as a ratio to GDP, however, the implied impact on activity is generally smaller (Table 2.1).

A possible interpretation from these admittedly preliminary results is that the fall in TMT stock valuations could have a larger impact on consumption in continental Europe than has been generally expected. They suggest that, even though the underlying impact on activity is generally larger in North America and United Kingdom, changes in TMT valuations have played a role in both groupings whereas changes in non-TMT valuations have had a significantly higher impact on consumption in North America and United Kingdom. The result for the continental European countries could reflect the widespread ownership of TMT shares (including the telecommunications sector) and ris-

ing share ownership over time, which may come through more in the TMT results, as the main changes in TMT valuation are focused in the post-1995 period.

For Japan, the estimated impact on consumption of both TMT and non-TMT stock values are large, too large to be plausible as a direct wealth effect given that households are not significant owners of equities and most equities are held by financial institutions. Part of this may reflect the imprecision of the underlying coefficient estimates. However, the coefficient on non-TMT stocks is significantly different from zero, suggesting that some connection does exist between stock values and consumption. This may well reflect the significant impact of stock market valuations on banks' balance sheets. Given the fragility in Japan's banking sector since the asset price bubble burst in the early 1990s, and the importance of bank lending in financial intermediation, the impact on bank lending could affect overall activity and hence consumption.<sup>10</sup>

#### *Effect on Investment*

Stock markets affect investment through the cost of capital. If the ratio of market valuation of capital to the cost of acquiring new capital (also referred to as Tobin's  $q$ ) rises, so will investment. The increase in TMT stock valuation has been a key source of funding for information technology companies in the late 1990s through IPOs, as their access to other capital markets (bonds and bank loans) has been limited. The dramatic increases in valuations of TMT firms led to easier access to resources and consequently also to higher investment.<sup>11</sup> In addition, at least for the United States, changes in TMT valuations have been correlated with changes in investment in information technology products, presumably because TMT valuations reflect beliefs about the value of this "new" technology (Figure 2.5).

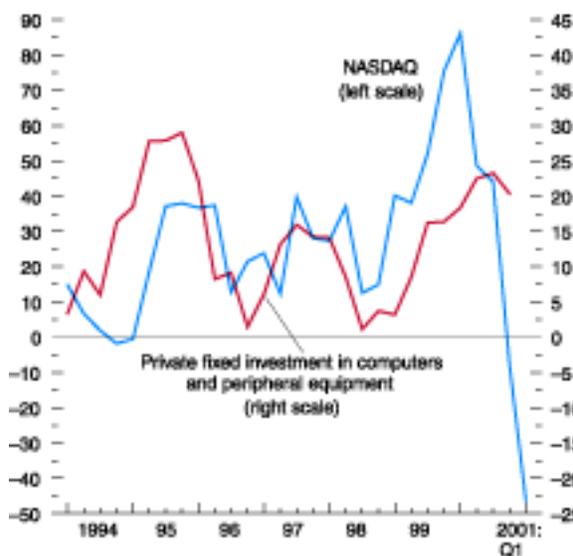
<sup>9</sup>James Poterba, "Stock Market Wealth and Consumption," *Journal of Economic Perspectives*, Vol. 14, No. 2, (Spring 2000), pp 99-119, and Martha Starr-McCluer, "Stock Market Wealth and Consumer Spending," Finance and Economics Discussion Series Working Paper No. 1998-20, (Washington: Federal Reserve Board of Governors, April 1998), provide an overview of this literature. It has also been argued that most estimates of the wealth effect for the United States are upward biased because they omit a variable to proxy consumer access to credit; See Martin Cerisola and Paula De Masi, "Determinants of the U.S. Personal Savings Rate," Section V in "United States—Selected Issues," IMF Staff Country Report No. 99/101 (Washington: IMF, 1999), available at <http://www.imf.org/external/pubind.htm>.

<sup>10</sup>See Tamim Bayoumi, "The Morning After: Explaining the Slowdown in Japanese Growth in the 1990s," *Journal of International Economics*, Vol. 53 (April 2000), pp. 241-259.

<sup>11</sup>Also, venture capitalists generally take an equity stake in a company, again implying a link with TMT equity valuations.

**Figure 2.5. NASDAQ Stock Price and Private Fixed Investment in Computers and Peripheral Equipment**  
(Quarterly percent change from a year earlier)

NASDAQ has been highly correlated with information technology investment in the late 1990s.



Source: WEFA Inc.

**Figure 2.6. The “New Economy” Cycle of the Late 1990s**



Higher investment in information technology in turn affected productivity, again affecting stock market valuations, giving rise to a virtuous cycle of an expanding economy, rising investment, rising productivity, and a rising equity market (Figure 2.6). This cycle, which has been more pronounced for the information technology sector than the telecom and media sectors, has been documented best in the United States, where many TMT companies with limited access to bond markets or bank finance used stock markets as a source of funding. The rapid rise in investment in TMT goods has been directly correlated with changes in the technology-intensive NASDAQ index, suggesting that TMT valuations may affect investment more than non-TMT valuations.<sup>12</sup> Such a cycle may well also operate as TMT equity values fall.

The link between TMT and non-TMT equity values and investment was tested using a model similar to that discussed earlier, except with quarterly investment substituting for monthly retail sales and adding short-term interest rates to reflect the cost of capital. The initial results reported in Table 2.3 again suggest that in North America and United Kingdom changes in TMT valuations have had a statistically significant impact on investment similar in size to their non-TMT counterparts. For the continental European countries, the results suggest that changes in non-TMT equity values have little or no impact on investment, but that for TMT equities the effects are statistically significant and similar to North America and United Kingdom in cents per dollar (although smaller absolute value for the reasons discussed earlier). The results for Japan are not statistically significant. The results for TMT values, however, are incorrectly signed for Japan, emphasizing the lack of precision of estimates for individual countries. That said, the large estimated impact from non-

<sup>12</sup>Evidence for such a relationship is also provided by several market commentators such as Deutsche Bank, *World Outlook* (December 1, 2000), pp. 12–18; HSBC, *World Economic Watch* (February 2, 2001), p. 5; and JP Morgan, *Global Data Watch*; (January 5, 2001), pp. 11–12.

**Table 2.3. Impact of a Rise in Equity Valuations on Investment***(Increase in real U.S. dollar investment from a one U.S. dollar increase in equity values)*

	TMT Capitalization	Non-TMT Capitalization	Total Market <sup>1</sup>
Average North America and United Kingdom	<b>0.04</b>	<b>0.05</b>	<b>0.05</b>
Average continental Europe	<b>0.05</b>	0.00	0.01
Japan	-0.06	0.08	0.04

Note: Bolded estimates are statistically significant. North America and United Kingdom covers the United States, Canada, and the United Kingdom and "continental Europe" covers Germany, France, and the Netherlands. Effect after 2 years. A reduced-form vector autoregression was estimated over the period 1990:1 to 2000:3 with quarterly real investment (private gross fixed capital formation), real TMT stock market capitalization, real non-TMT stock market capitalization, industrial production, and short interest rate. Three lags were used and all variables are in logs, except the interest rate. The two year effect was calculated as the level of the impulse-response function after eight quarters. The effect of the experiment was calculated using investment (private gross fixed capital formation) for 2000 and market capitalization in December 2000. For the details of the statistical analysis see Hali Edison and Torsten Sløk "New Economy Stock Valuations and Investment in the 1990s," IMF Working Paper (Washington: International Monetary Fund, forthcoming).

<sup>1</sup>Total Market is the effect of a one U.S. dollar increase, where the one dollar increase is split between TMT and non-TMT using their share of total stock market capitalization in December 2000.

TMT equity values to investment is consistent with views about the impact of bank lending on activity discussed above.

One possible explanation for the relatively smaller impact of non-TMT share prices on investment in continental Europe compared to North America and United Kingdom is the difference in corporate laws and traditions, as witnessed by less frequent takeovers, the greater importance accorded to employees in decision making, and the higher gearing ratios. These features could suggest that managers tend to be less responsive to the stock market relative to their counterparts in North America and United Kingdom. What these results suggest, however, is that these differences apply less to the TMT market, possibly because the structure of these sectors is much more similar across countries. This may reflect a more general shift as pressures build for firms to restructure and raise productivity, so as to take full benefit of the single-currency European capital market.

### Stock Prices as a Leading Indicator of Activity

In addition to affecting consumption and investment directly, changes in stock valuations can also serve as a leading indicator of the business cycle. To the extent that stock valuations reflect the value of anticipated future profits of listed companies, expectations about the business cycle will affect the current value of firms. Again, it is of interest to examine if there is a difference in

the predictive power of TMT and non-TMT stocks in explaining the business cycle in the 1990s. To test this, a statistical model was formulated using monthly data since 1990 in which industrial production was explained by historical values of real TMT stock capitalization, real non-TMT stock capitalization, the short interest rate, and lagged values of industrial production. Given the wider access to reliable data on industrial production, the analysis encompassed a broader range of countries, with the limited time frame being generally compensated for by using panel estimation across a number of countries.

The preliminary analysis suggests that TMT stock valuations, together with short-term interest rates, have generally been the more robust leading indicators of the business cycle in most regions of the world, while non-TMT stocks have been less successful at predicting cyclical performance (Table 2.4).<sup>13</sup> Indeed, both short-term interest rates and TMT stocks appear to be a statistically significant indicator of changes in the cycle in all countries or regions examined. By contrast, non-TMT stock valuations appear as a leading indicator only in the United States, Asia, and Latin America. Given the correlation in

<sup>13</sup>Splitting up the TMT sector into Telecommunications, Media, and Information Technology stocks does not provide more useful results. In other words, the TMT sector is a leading indicator of the business cycle, but there does not seem to be general evidence that any one component of the TMT sector predicts industrial production better than others.

**Table 2.4. Are Stock Valuations a Leading Indicator of the Business Cycle?**

	TMT Stocks Significant at Any Lag Length	Non-TMT Stocks Significant at Any Lag Length	Short Term Interest Rate Significant at Any Lag Length
United States	X	X	X
Continental Europe	X		X
United Kingdom	X		X
Latin America	X	X	X
Asia	X	X	X
Japan	X		X

Note: At a 15 percent significance level. In the panel regression “Continental Europe” covers Germany, France, and the Netherlands, “Latin America” covers Argentina, Brazil, and Mexico, and “Asia” covers Indonesia, Korea, Malaysia, and Thailand. All variables are in dlogs (except the interest rate which is in simple differences) and four lags were included of variables on the right hand side (except the lagged dependent variable which only has one lag). Coefficients for groups of countries are estimated in fixed-effects panel regressions with country-specific variances. The p-values are calculated using White’s heteroscedasticity and autocorrelation consistent estimator and this estimator was applied both in panel regressions and for individual countries.

movements in TMT stocks across countries, it remains unclear whether the apparently superior performance of TMT stocks reflect local considerations or the global technology cycle. In any case, the implication that the worldwide fall in TMT stocks in 2000 is a precursor of a slowdown in activity indeed appears to be coming true.

**Some Policy Considerations**

The empirical analysis reported in this essay suggests the following:

- Stock market developments may have a significant impact on consumption and investment in North America and United Kingdom with little differences between the TMT and non-TMT sectors.
- Non-TMT valuations do not appear to have a large impact on activity in continental Europe. Measured in cents-to-the-dollar, TMT valuations may have a similar impact to North America and United Kingdom, but the overall effect is smaller as valuations are a lesser share of GDP.
- The results for Japan are relatively imprecise, but are consistent with a view that

changes in equity valuations are translated to activity through their impact on bank capital and lending.

- TMT stocks in the last decade may have been a leading indicator of economic activity.

The links from stock markets to the real economy found in this essay raise a number of issues for policymakers.<sup>14</sup> In particular, the analysis suggests a strong link from equity markets to consumption and investment in countries with widespread stock ownership, large stock markets, and where stock options are used as payment to employees. A similar relationship appears to hold in the TMT sector for continental Europe. Together with the close correlation of TMT valuations across the world, this could imply that the TMT sector is capable of providing significant generalized disturbances to global activity.

**What Is Driving the Weakness of the Euro and Strength of the Dollar?**

A concern of policymakers over the past year has been the pronounced weakness of the euro against the U.S. dollar and the potential implication a hard landing of the U.S. economy might have on the value of the euro (Figure 2.7). From a value of \$1.04 per euro in early 2000 (already well below the \$1.17 at its inception on January 1, 1999), the euro fell to a low of \$0.83 in October 2000. Even after a subsequent rebound, its trading range remains \$0.88–\$0.95, well below estimates of the value consistent with medium-term economic fundamentals (some consequences of this situation are explored in the alternative scenarios reported in Appendix II of Chapter I). More broadly, this reflects generalized euro weakness (including against the yen

<sup>14</sup>The challenges are even greater if the effect on the real economy is larger for falls in equity values than for increases, because the sales of stocks triggers a taxable event or consumers/firms face liquidity constraints. Hassan Shirvani and Barry Wilbratte, “Does Consumption Respond More Strongly to Stock Market Declines Than to Increases?” *International Economic Journal*, Vol. 14, No. 3 (Autumn 2000), pp. 41–49, present these arguments and find that the hypothesis of asymmetric effects is confirmed by data for Germany, Japan, and the United States.

and the pound sterling) and equally generalized strength of the U.S. dollar (including against currencies of other major trading partners, such as Canada, Australia, and New Zealand—Box 2.1 discusses the latter two currencies).

What makes the weakness of the euro against the dollar of particular interest is that it seems to defy explanations from conventional exchange rate models.<sup>15</sup> These models link exchange rate movements to changes in the market for current transactions (usually proxied by the current account)<sup>16</sup> and interest rate differentials (which drive portfolio flows in fixed income assets such as bonds).<sup>17</sup> Over the period of euro weakness, however, the U.S. current account balance has deteriorated to record lows, and fallen significantly relative to that of the euro area. Even more striking, interest rate hikes by the European Central Bank in the second half of 2000 were generally associated with a weakening of the euro. Finally, the argument that the depreciation of the euro reflected disorderly market conditions and associated bandwagon effects has been dented by the failure of intervention to lead to a rapid appreciation of the currency and by the persistence of euro weakness.<sup>18</sup>

<sup>15</sup>See Peter Isard, *Exchange Rate Economics* (Cambridge: Cambridge University Press, 1995).

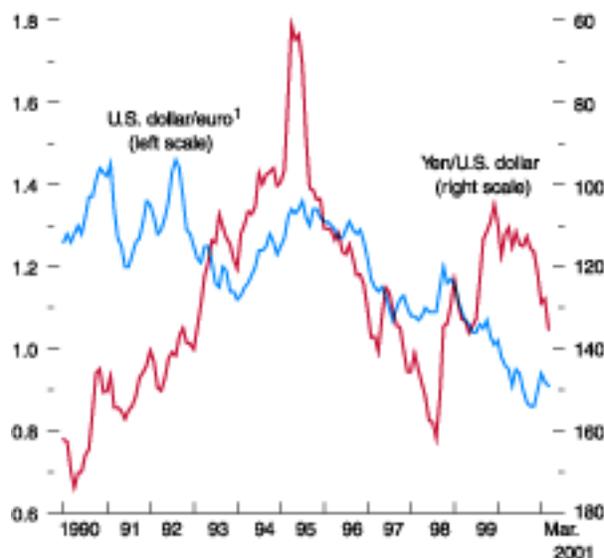
<sup>16</sup>Other “autonomous” capital flows can be included. Indeed, this was the foundation of a literature on the “basic balance” active during the 1950s and 1960s, but the “basic balance” rarely included portfolio equity flows, as they are potentially highly volatile.

<sup>17</sup>These models are relatively unsuccessful empirically. Indeed, the dominant view is that short-term exchange rate movements are largely unforecastable, implying that only contemporaneous events have systematic influence. The seminal paper is by Richard Meese and Kenneth Rogoff, “Empirical Exchange Rate Models of the Seventies: Do They Fit Out of Sample?” *Journal of International Economics*, Vol. 14 (February 1983), pp. 3–24.

<sup>18</sup>Initially, intervention was coordinated with other central banks, including the U.S. Federal Reserve. Even coordinated intervention, which is more effective than its unilateral counterpart, is generally found to have a short-lived impact on the exchange rate unless markets are disorderly or it is accompanied by policy changes. See Hali Edison, “The Effectiveness of Central-Bank Intervention: A Survey of the Literature After 1982,” *Special Papers in International Economics* (Princeton: International Finance Section, Department of Economics, Princeton University, 1993).

**Figure 2.7. Movements of the Euro and Yen**

A key feature in major currency markets has been the pronounced weakness in the euro.



<sup>1</sup>A synthetic euro is used through the end of 1998.

### Box 2.1. The Weakness of the Australian and New Zealand Currencies

In 2000, the Australian dollar and the New Zealand dollar have weakened sharply, especially against the U.S. dollar. The Australian dollar dropped from around US\$0.65 at the end of 1999 to around US\$0.50 by mid-November; over the same period, the New Zealand dollar dropped from around US\$0.51 to around US\$0.39 (See the Figure). In 2001 after a short-lived rebound, both currencies have remained around their end-2000 levels, below their end-1996 peak levels by 30–40 percent.<sup>1</sup>

Against a background of generally sound fundamentals and relatively favorable economic prospects (and for Australia strong economic growth) the recent fall in these currencies has confounded policymakers and market analysts alike. In particular, the variables believed to be the main driving forces of both the Australian and the New Zealand dollar in the past—commodity prices, the current account deficit and associated external imbalances, and interest rate differentials—do not appear to explain the recent movement of the currencies. In 2000, prices of Australia's and New Zealand's commodities strengthened, the countries' terms of trade have improved, the (admittedly large) current account deficits look set to narrow, and interest rate differentials versus the United States have not moved significantly since 1997. In that respect, the weakness of the two currencies has not been unlike that of the euro, which has also defied traditional explanations based on interest rate differentials and current account imbalances.

The weakness of the Australian dollar and New Zealand dollar has been seen in part as the reflection of the unilateral strength of the U.S. dollar (between the beginning of 1999 and the end of 2000, all the major currencies with the exception of the yen depreciated against the U.S. dollar).<sup>2</sup> In that context, the correlation between the

<sup>1</sup>Although it is not discussed in this box, the Canadian dollar also weakened against the U.S. dollar in 2000.

<sup>2</sup>Donald Brash, "The Fall of the New Zealand Dollar: Why Has It Happened, And What Does It Mean?" *Reserve Bank of New Zealand Bulletin*, Vol. 63, (December 2000).



Australian dollar–U.S. dollar exchange rate and the euro–U.S. dollar exchange rate rose in 2000 from about 0.25 to about 0.75. Consequently, analysts examining the Australian dollar and the New Zealand dollar have looked to similar explanations to those used for the euro, such as relative expected growth rates. In addition, local factors have been cited to help explain the particularly sharp and prolonged depreciation of the two currencies. In particular, the medium-term weakness of these currencies has been attributed to the following three factors:<sup>3</sup>

<sup>3</sup>In that respect, the IMF's preliminary results from medium-term analysis find that the fiscal consolidation of the 1990s played a significant role in the determination of the real exchange rate for Australia (see "Sources of Fluctuations in Australia's Real Effective Exchange Rate" in *Australia: Selected Issues and Statistical Appendix*, IMF Staff Country Report, No. 01/55). Similarly, a switch in the composition of growth from domestic demand to net export can partly account for the weakness of the Australian dollar in 2000.

- *The gap in relative medium-term growth prospects* between the United States on the one hand and Australia and New Zealand on the other has been considered the chief driving force behind recent exchange rate movements, although Australia has matched the U.S. economic performance over the last few years. In particular, downward revisions of expectations of Australia's output growth relative to the United States have been thought to be at the root of the sharp exchange rate depreciation at the beginning of the year. Equity flows offer weak support for this view: in 2000, net foreign equity outflows increased for Australia, but not for New Zealand.
- *Technology divide.* In Australia, and more so in New Zealand, a smaller share of the economy is involved in the development and production of information technology products and services relative to the United States, although spending on such products has been high in both cases.<sup>4</sup> Australia and New Zealand may have suffered from a weakening of investor sentiment reflecting the perception that they are relatively less well positioned to benefit from the productivity gains associated with the development of the "New Economy," although the depreciation of the Australian dollar and the New Zealand dollar in the second half of 2000 coincided with a sharp correction in the price of U.S. technology stocks.<sup>5</sup> In addition, the small number of "New-Economy" companies traded on Australia's and New Zealand's stock markets may have reduced portfolio equity inflows.
- *The net foreign asset positions* of Australia and New Zealand may help explain the medium-

run behavior of the countries' respective currencies. It may be that larger net foreign liabilities require a relatively more depreciated real exchange rate to generate a larger surplus on goods and services to meet net factor payments. However, this view has not found much support in the data. In Australia, the long-run worsening of the net foreign asset position has been accompanied by a weaker exchange rate. However, the factor income deficit increased only moderately in the 1970s and has remained roughly constant in more recent years. Regression analysis suggests that net foreign liabilities do not significantly affect the real exchange rate after interest rate differentials and the terms of trade are taken into account.<sup>6</sup> For New Zealand, the real exchange rate was at the beginning of 2000 roughly the same as at the beginning of 1980, while the net foreign asset position followed a trend similar to Australia's. Moreover, as in Australia, in New Zealand the various components of the current account did not exhibit any particular trend in recent years.

In conclusion, as it is the case for the euro, it is difficult to relate the recent weakness in the Australian dollar and the New Zealand dollar to the factors that explained the behavior of these currencies in the past. While there is too little evidence to say whether there has been a structural break in the exchange rate determination process, partly because of the recent nature of the hypothesized change there are indications that, especially for Australia, the terms of trade, although still predominant, are becoming relatively less important and that factors characteristic of more mature economies, possibly including equity portfolio flows, are increasing their weight in the determination of the exchange rate.

<sup>4</sup>See Chapter II "Current Issues in the World Economy" of the October 2000 *World Economic Outlook* for information on Australia.

<sup>5</sup>Ian Macfarlane, "Recent Influences on the Exchange Rate," Reserve Bank of Australia *Bulletin* (December 2000).

<sup>6</sup>The fact that in recent years interest rate spreads on Australia's bonds narrowed may be part of the explanation.

An alternative explanation for the weakness of the euro against the dollar suggested by many commentators is that it reflects bilateral portfolio equity flows (including mergers and acquisitions) out of the euro area.<sup>19</sup> It has been suggested that these equity flows are driven by the perception of greater prospects for growth and profits in the United States. Certainly, the sheer size of the global currency market, where *daily* flows involving all currencies are \$1½ trillion, one and a half times *annual* exports of goods and services from the United States, imply that changes in investor sentiment could have an impact on exchange rates. However, although this explanation has gained considerable attention and is rapidly becoming the received wisdom, most of the evidence supporting it is anecdotal, and subject to little rigorous analysis.

In addition, if the euro is being driven down by expectations of higher U.S. growth, what explains the path of the yen against the U.S. dollar and euro? The weakness of the Japanese economy over the last two years has not led to a corresponding depreciation of the yen, which until quite recently had remained relatively firm against the U.S. dollar and had appreciated significantly against the euro. This divergence between the euro-dollar exchange rate and its yen counterpart is unusual, although not unprecedented.

### Recent Trends in International Capital Flows and Current Accounts

Globalization during the 1990s has led to a generalized increase in cross-border capital

<sup>19</sup>For example, Lehman Brothers, *Global Foreign Exchange Strategies* (May 18, 2000), pp. 2–4; Lehman Brothers, *Global Foreign Exchange Strategies* (July 27, 2000), pp. 2–4; Lehman Brothers, *Global Foreign Exchange Strategies* (October 5, 2000), pp. 9–11; Lehman Brothers, *Global Foreign Exchange Strategies* (March 1, 2001), Morgan Stanley Dean Witter, *Currency Strategy and Economics* (November 22, 2000), pp. 7–8; Goldman Sachs, *European Weekly Analyst* (November 17, 2000), pp. 1–8; Deutsche Bank, *Global FX Outlook and Strategy—Special Edition* (November 10, 2000), pp. 21–23; and Deutsche Bank, *Global FX Outlook and Strategy* (December 1, 2000), pp. 16–18.

flows. In particular, over the past few years the United States has been the recipient of increasing net capital inflows. The dominant factor behind these net portfolio flows has been moves in or out of U.S. assets.<sup>20</sup> Net portfolio flows—U.S. government bonds and notes, U.S. government agency bonds, U.S. corporate bonds, and U.S. equities—increased from less than \$25 billion in the early 1990s to almost \$500 billion in 2000. The composition of these flows has changed over time, shifting toward agency bonds, corporate bonds, and (in particular) equities, at the expense of government bonds and notes. Indeed, while net flows into U.S. government bonds have gradually contracted over the 1990s, turning negative since 1999 as the market for such government bonds shrank due to buy-backs, the corresponding net flows into U.S. stocks have risen by a factor of 12 since 1995 (Figure 2.8). The rapid expansion in international equity flows has also coincided with a boom in cross-border mergers and acquisitions, which rose from around \$300 billion in 1997 to announced deals worth \$1,200 billion in 2000.

There are also important differences when comparing bilateral net portfolio flows into assets in the United States by country.<sup>21</sup> Bilateral

<sup>20</sup>While generally true, there are some instances where capital flows into foreign assets have been important—such as the move by U.S. investors into Japanese equities in 1999.

<sup>21</sup>Bilateral data on flows, which come from the U.S. Treasury International Capital (TIC) reporting system, have a number of shortcomings. In particular, they reflect only the location of the transactor, so it is necessary to assume that the recorded transactions for a country are conducted for a domestic resident. While this assumption seems reasonable for flows from countries lacking large financial centers, it is more problematic for countries with such centers, such as the United Kingdom, Hong Kong, or Singapore. In addition, any transactions carried out through such a center—for example, a German purchase of U.S. assets that is organized through London will be recorded as a flow from the United Kingdom, not Germany. Finally, the data for U.S. assets are differentiated between government bonds, government agency bonds, and corporate bonds, while foreign assets are only divided between bonds and equities.

net flows into U.S. equities from the euro area increased dramatically, while there is little evidence of a similar shift for Japan. A similar pattern holds for mergers and acquisitions. About 40 percent of the companies originating mergers and acquisitions are from the euro area and the implied capital flows are significant; Japan has not been a significant player in this area. Mergers and acquisitions announced in 2000 imply an aggregate net flow into the United States estimated at about \$200 billion (on the same basis, the net outflow from the euro area is roughly \$300 billion).

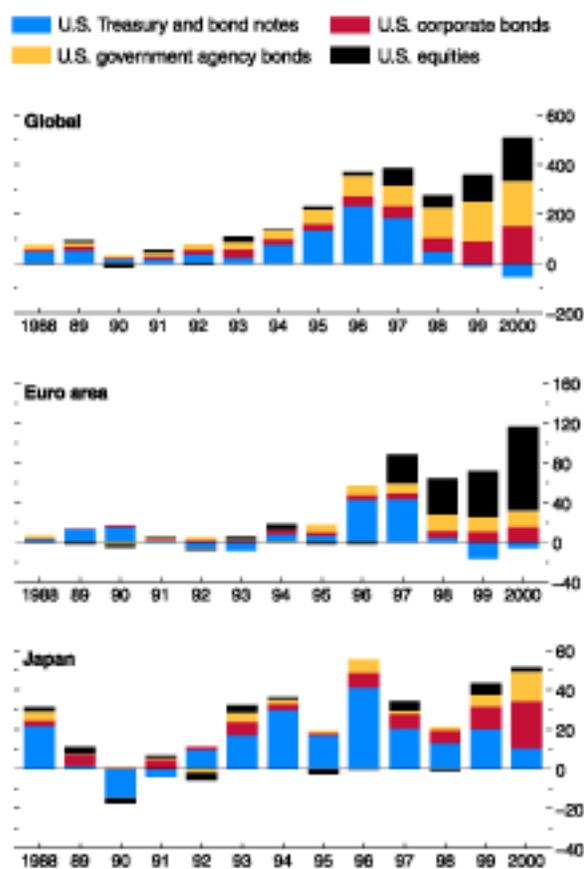
There have also been different current account developments across the three regions. The United States has experienced a large and growing overall current account deficit, as well as rising bilateral current account deficits against both the euro area and Japan. Japan has had a large and relatively stable overall current account surplus in recent years (on the order of \$100 billion a year), while the current account of the euro area has deteriorated from a surplus of \$100 billion in 1997 to around balance in 2000. Given the need to finance these transactions through the capital account, the deterioration in the external balance of the United States might be expected to have created pressure for U.S. dollar depreciation.

### Empirical Results

This section reports some preliminary analysis of the importance of the current accounts and various capital account flows in tracking the behavior of the exchange rates of the euro and the yen against the dollar. The motivation for this work is the paucity of empirical evidence on the relative importance of these different net flows, in particular equity flows, in determining exchange rates.<sup>22</sup> Given data limitations and the short period over which higher capital flows have occurred, scope for econometric analysis is

**Figure 2.8. Global Net Portfolio Flows to the United States by Asset Class**  
(Billions of U.S. dollars)

Net portfolio flows into the United States have grown dramatically during the 1990s and the change in the composition of those flows has been even more pronounced.



Sources: U.S. Treasury Department.

<sup>22</sup> The only other empirical estimates that could be located were reported in Lehman Brothers, *Global Foreign Exchange Strategies* (May 2000).

limited.<sup>23</sup> Nonetheless, simple bivariate regression analysis on data since 1988 (to provide some perspective from before the late 1990s surge in capital flows) can still shed some light on the extent to which movements in exchange rates are associated with particular current account and capital flows, as well as variables that might be expected to explain these movements.

The explanatory variables were the U.S. bilateral current account balance and bilateral net bond flows (covering traditional explanations of exchange rate movements), bilateral net equity flows, and net foreign investment (for equity flow explanations of exchange rate movements). In addition, similar regressions were estimated for variables that might explain these flows. Current cyclical conditions, short-term interest rate differentials, and long-term interest rate differentials were used to investigate the validity of traditional explanations of exchange rate dynamics. Relative equity returns and expected real growth differentials were included to investigate the newer view that portfolio equity flows are important for exchange rates.<sup>24</sup>

This exercise (reported in Table 2.5) yields the following results:<sup>25</sup>

- *There is evidence that equity flows matter for the euro-dollar rate, but not for the yen-dollar rate.*

Movements of the euro-U.S. dollar exchange rate are significantly correlated with net portfolio flows and some associated underlying variables, but the same is not true for

<sup>23</sup> This task was made even more complicated because of the short sample period since the inception of the euro. In this work, data for the euro area on the bilateral current account and various capital account flows were extended back to the start of 1988 by aggregating data over the 11 initial members of Economic and Monetary Union (EMU), and calculating a corresponding synthetic version of the euro. An equivalent data set was then constructed for Japan.

<sup>24</sup> Given the data problems associated with identifying bilateral capital flows that go through major financial centers, multilateral versions of the regressions (where flows to and from financial centers get netted out) were also estimated, with broadly similar results.

<sup>25</sup> See Robin Brooks, Hali Edison, Mohan Kumar, and Torsten Sløk, "Exchange Rates and Capital Flows," IMF Working Paper (Washington: International Monetary Fund, forthcoming).

**Table 2.5. Explaining Bilateral Exchange Rate Movements**

	Euro Area Coefficient	Japan Coefficient
<b>Current account and capital flows</b>		
Current account <sup>1</sup>	—	+
Capital account		
Net bond flows <sup>2</sup>	+	—
Net equities flows <sup>3</sup>	++	+
Foreign direct investment <sup>4</sup>	+	+
<b>Traditional underlying factors</b>		
Long-term interest differential	++	++
Short-term interest differential	+	+
Relative current growth	+	—
<b>Alternative underlying factors</b>		
Relative stock returns	—	+
Relative expected growth <sup>5</sup>	++	—

Note: The symbols ++, +, and — indicate the coefficient is correctly signed and significant, correctly signed and insignificant, and incorrectly signed, respectively. The equations regress the change in the logarithm of the bilateral exchange rate on a constant and the contemporaneous value of the explanatory variable using quarterly data since 1988.

<sup>1</sup>Bilateral current account vis-à-vis the United States.

<sup>2</sup>Net bond flows are defined as U.S. bond flows less foreign bond flows.

<sup>3</sup>Net equity flows are defined as U.S. equity flows less foreign equity flows.

<sup>4</sup>The sample period starts in 1994: Q1.

<sup>5</sup>Expected growth rates were calculated by taking a weighted average of the expected current and future year growth rate of the Consensus Forecast since 1990. The weights being 11/12 on the current year forecast in January and 1/12 on the next year's forecast, in February 10/12 and 2/12 respectively, and so on until in December the full weights on the next year's forecast. Regressions were run since 1990.

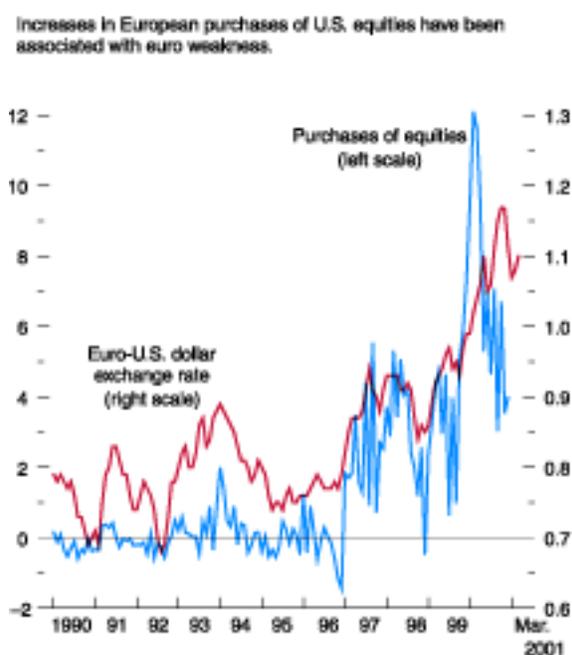
the yen-dollar rate. Specifically, for the euro, the coefficients on net equity flows and expected growth are correctly signed and significant, although relative equity returns are not significant (Figure 2.9).<sup>26</sup> For the yen, none of these variables is significant.

<sup>26</sup> There are potential problems interpreting the empirical results based on aggregating data for individual euro area countries. As a check on euro area results, versions of the regressions were also estimated for all 11 members of the euro area separately, yielding similar results. For the period since 1995, when capital flows expanded rapidly, the results suggest that a \$10 billion increase in net equity inflows into the United States has been associated with a 2 percent depreciation of the euro vis-à-vis the dollar. For the first three quarters of 2000, this implies that equity flows could have reduced the value of the euro against the dollar 15 percent, more than half of the actual depreciation. This result is somewhat stronger than those reported in Lehman Brothers (May 2000).

- *There is little evidence that merger and acquisition flows are important for exchange rate determination.* The coefficients on net foreign direct investment (FDI) flows are correctly signed, but statistically insignificant for both the euro and yen. The lack of explanatory power of FDI flows suggests that mergers and acquisitions flows (which are a major component of the FDI data) may have not played an important role in euro weakness. Initially, several private sector analysts pointed to the size of mergers and acquisitions flows as an important element in explaining the path of the euro against the dollar. The empirical results, however, are more consistent with the more skeptical view taken by other private analysts, who note that the majority of cross-border mergers and acquisitions flows are financed through share-swaps that have no immediate impact on the demand for currencies.
- *Net bond flows appear to have no significant effect on the euro- or yen-dollar rate.* Similarly, bilateral current account positions are not statistically significant for either exchange rate. However, when multilateral current account positions were used, there was some evidence of an effect, suggesting that currency demand associated with current transactions may matter.
- *The movements of euro- and yen-U.S. dollar exchange rates are significantly correlated with the long-term interest rate differential, but not their short-term equivalent* (Figure 2.10). The results are supportive of the traditional approach to exchange rate determination. In the case of the euro, however, the explanatory power of this interlaying variable is “weaker” than for equity portfolio flows.

The analysis is admittedly preliminary but is relatively supportive of the new conventional wisdom that net equity flows are important for the euro-dollar exchange rate, although long-term interest rate differentials also appear to matter. For the yen, however, there is little evidence that net equity flows have been an important deter-

**Figure 2.9. Net Portfolio Flows into U.S. Stocks from Euro Area and the Exchange Rate**  
(Billions of U.S. dollars)



Sources: IMF Treasurer's Department; and U.S. Treasury Department.

inant of the bilateral exchange rate with the U.S. dollar.

### Policy Considerations

Are exchange rate movements getting more sensitive to capital flows? It is difficult to answer this question, partly because exchange rates are notoriously hard to analyze. In addition, given the recent nature of the hypothesized changes in behavior, any empirical results are inevitably highly preliminary. That said, it does appear that there is some evidence that an important factor driving exchange rates between the euro area and the United States over the past few years may have been net equity flows, apparently based on perceptions of future growth. Between the yen and the dollar, however, these factors appear to play little or no role. Rather, relative interest rates and current demand for currency appear to matter. At first blush, this seeming inconsistency appears to add a further level of uncertainty to the already difficult world of exchange rate analysis.

On further reflection, however, there are at least two ways of reconciling these results. The first is the desire to hold a diversified international portfolio to minimize the risk for a given level of expected returns. With the advent of the euro and hence a common monetary policy across the euro area, returns across euro area stock markets have become more correlated. As a result, investors (particularly those in the euro area) who wish to diversify their portfolios will tend to move some of their original intra-euro area investments outside of the region, consistent with the recent increase in net equity investment from the euro area to the rest of the world. As there has been no shift in underlying conditions in Japan, no similar impact would be seen on the yen, explaining the differential behavior of the euro and the yen currencies—although the explanation does not help explain the strength of the U.S. dollar. It also implies that the weakness of the euro may continue for some time, as the stock adjustment driven by the

**Figure 2.10. The Euro and Long-Term Interest Rate Differential**



Sources: European Central Bank; IMF Treasurer's Department, Nikkei Telecom; and WEFA Inc.  
<sup>1</sup> German long-term interest rate as a proxy for the euro long-term interest rate prior to 1994.

desire for portfolio diversification is gradually achieved.

An alternative explanation is that investors in the euro area are seeking to increase their returns and have been investing in United States equities because of perceived higher returns. There is also anecdotal evidence that this may be important for explaining the weakness of the Australian and New Zealand dollars (Box 2.1). In Japan, however, particular conditions may have made equity holders (which are mainly financial institutions) considerably more risk averse. Because of the fragility of the Japanese financial system, banks or insurance companies may have been more focused on their capital base than on maximizing high rates of return. This explanation implies that euro weakness and dollar strength reflect perceptions of growth differentials between the euro area and the United States, perceptions that could potentially change quite rapidly—as was graphically illustrated during the Asian crisis.

These views are not incompatible. Maximizing expected returns and minimizing risk are the two basic objectives of investing, and hence can occur concurrently. Even if much of the outflow of equity investment from the euro area reflects a desire to rebalance portfolios, the allocation of these investments abroad will be affected by perceptions of relative rates of return. As this outflow occurred at a time of perceived higher expected returns in the United States, a relatively large part has been invested in that direction. There must also be a proportion of the euro area outflows that would be repatriated if returns abroad turn out to be disappointing, while financial sector fragility may also help explain the continued appetite from Japan for U.S. government bonds and paper. What remains uncertain, however, is the relative weight of these factors in the overall patterns that has been seen over the past few years.

### Trade Integration and Sub-Saharan Africa

In a period of global integration, sub-Saharan Africa (hereafter, Africa) has continued to lag

behind the rest of the world in the level and rate of growth of per capita income (indeed, real GDP per capita in Africa has fallen by over 1 percent a year in the last 25 years). While this performance reflects a variety of factors, such as unfavorable geography, poor quality of institutions and governance, political turmoil and civil conflict, extensive government controls, falling real commodity prices, and bad management of commodity price cycles, one of the leading explanations of this disappointing outcome has been the failure of the region to embrace open international markets.<sup>27</sup>

Given the continent's lack of access to international capital markets, openness to trade is one obvious mechanism through which the benefits of international integration could be felt. There is strong evidence that greater openness to trade can boost long-term growth, largely through the impact on domestic competition and investment.<sup>28</sup> This suggests that increasing Africa's openness to trade is an important part of the overall strategy to boost growth and reduce poverty. Advanced economies need to open their trade regimes to products where poor nations have an advantage, such as agricultural goods, and recent moves by the European Union have been helpful (see

<sup>27</sup>There is, however, some evidence of sustained improvements in macroeconomic performance and a turnaround in growth performance in the mid-1990s. See Ernesto Hernández-Catá, "Raising Growth and Investment in Sub-Saharan Africa: What Can Be Done," IMF Policy Discussion Paper 00/4 (Washington: International Monetary Fund, 2000).

<sup>28</sup>For empirical support for the benefits of openness based on individual country experiences, see Jagdish Bhagwati, *Foreign Trade Regimes and Economic Development*, (Cambridge, Mass: Ballinger, 1978); on cross-country growth analysis, see Jeffrey Sachs and Andrew Warner, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity: 1*, Brookings Institution (1995), pp. 1–118; and Sebastian Edwards, "Openness, Productivity and Growth: What Do We Really Know?" *Economic Journal*, Vol. 108 (March 1998), pp. 383–98. The cross-country evidence is disputed by Francisco Rodriguez and Dani Rodrik, "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-national Evidence," in *NBER Macroeconomics Annual 2000*, ed. by Ben Bernanke and Kenneth Rogoff (Cambridge: MIT Press, 2000).

Chapter I). The focus of this essay, however, is on what African nations can do to open their own trading systems. During the 1990s, Africa has developed a number of regional initiatives aimed at expanding trade, but the impact to date has been limited, prompting further consideration of the way in which trade liberalization has been approached.

### Is Africa Undertrading?

Several indicators point to a deterioration in Africa's trade performance over time. In particular, Africa's share of world trade has declined steadily from more than 2 percent in the early 1970s to less than 1 percent in the late 1990s (Figure 2.11). A recent study by the World Bank estimates that the loss of world market share since 1950 represents forgone income opportunities to Africa of \$68 billion, or about 21 percent of its GDP.<sup>29</sup> Another estimate, based on cross-country growth regressions, suggests that increasing openness to trade could have increased long-run growth by 1.4 percentage points.<sup>30</sup>

Other researchers, however, question the view that Africa is being marginalized from global trade, pointing out that openness (measured as the ratio of trade to GDP) has been rising broadly in line with that of the world, and that Africa may have simply taken advantage of trading opportunities consistent with evolution in its income and development.<sup>31</sup>

**Figure 2.11. Africa: Trade Indicators**  
(Percent)

Africa's share of world trade has declined, although its openness ratio has evolved in line with that of the world.



<sup>29</sup>World Bank, *Can Africa Claim the 21st Century?* (Washington: World Bank, 2000).

<sup>30</sup>Jeffrey Sachs and Andrew Warner, "Sources of Slow Growth in African Economies," *Journal of African Economies*, Vol. 6, No. 3 (October 1997), pp. 335–76. See also Paul Collier and Jan Gunning, "Explaining African Economic Performance," *Journal of Economic Literature*, Vol. 37 (March 1999), pp. 64–111. For South Africa, there is evidence that a 1 percent cut in prices due to trade liberalization increases annual total factor productivity growth by about 0.2 percentage points (see Gunnar Jonsson and Arvind Subramanian, "Dynamic Gains from Trade: Evidence from South Africa," *IMF Staff Papers*, International Monetary Fund, Vol. 48 (2001)).

<sup>31</sup>Dani Rodrik, *The New Global Economy and Developing Countries: Making Openness Work* (Baltimore: Johns Hopkins University Press for the Overseas Development Council, 1999).

**Table 2.6. Measures of Trade Policy Regimes in Africa and Other Regions: Sachs-Warner Openness Index<sup>1</sup>**

	1980s	Late 1990s	Number of Countries
Number of open countries:			
Sub-Saharan Africa	7	18	25
Asia	7	11	15
Middle East and North Africa	2	1	9
Western Hemisphere	3	22	22
Advanced economies	22	24	24

Sources: Arvind Subramanian, *Trade and Trade Policy in Eastern and Southern Africa*, IMF Occasional Paper No. 196 (Washington: International Monetary Fund, 2000); and IMF staff calculations.

<sup>1</sup>IMF staff's calculations applying the Sachs-Warner criteria of openness for tariffs and nontariff barriers (Jeffrey Sachs and Andrew Warner, "Economic Reform and The Process of Global Integration," *Brookings Papers on Economic Activity*, 1, 1995, pp. 1–118). That is, a country is classified as closed if its nontariff barriers covered 40 percent or more of the value of trade or if its average tariff exceeded 40 percent.

These contrasting views on Africa's marginalization from trade have distinct policy implications. The former sees Africa's declining trade share as an independent source of concern—distinct from other factors that have caused low growth—and accordingly places considerable emphasis on policy measures to expand trade opportunities. The latter view sees causality running from growth, and other determinants, to trade, and hence places emphasis on

promoting economic growth rather than trade, per se.

There are two main approaches to evaluating trade openness. The first investigates the trade regimes in place, by examining a combination of tariffs and quantitative restrictions. Despite the well-known difficulties of aggregating different trade restrictions into a single measure, such a combination of tariff and qualitative restrictions provides a broad indicator of the stance of trade policy. Two such measures, reported in Tables 2.6 and 2.7 highlight a number of points:

- Africa has recently made significant strides in increasing its openness to international trade. For example, on the basis of one classification of trade policy regimes, the number of African countries with open regimes has risen from seven out of 25 in the 1980s to 18 currently.
- Notwithstanding this progress, Africa is currently among the most protected regions in the world. On the IMF's assessment of trade regimes, Africa has the most restrictive tariff regime, with the highest average level of tariffs and tariff revenue as a ratio to GDP. On the aggregate index, which takes account of nontariff barriers, Africa ranks third to last, just above the Middle East and North Africa

**Table 2.7. Measures of Trade Policy Regimes in Africa and Other Regions: IMF's Trade Restrictiveness Index, 2000**

	Overall Rating	Nontariff Barriers Rating	Tariff Rating	Average Tariff (percent)
Sub-Saharan Africa	4.7	1.6	3.0	19.2
Eastern and Southern Africa	5.6	1.8	3.5	20.3
Central and Western Africa	4.3	1.4	3.0	18.9
Fast growing countries of Asia <sup>1</sup>	3.4	1.7	1.3	7.2
Asia, excluding fast-growing countries	5.0	1.9	2.4	13.8
Eastern Europe (early transition) and Baltic countries <sup>2</sup>	1.9	1.1	1.4	8.0
Eastern Europe (late transition)	2.9	1.4	1.8	11.5
Former Soviet Union	4.2	1.8	1.8	10.2
Middle East and North Africa	5.6	2.0	3.0	18.1
Western Hemisphere	4.1	1.8	1.8	11.7
Industrial countries	3.9	2.0	1.0	5.4

Sources: Arvind Subramanian, *Trade and Trade Policy in Eastern and Southern Africa*, IMF Occasional Paper No. 196 (Washington: International Monetary Fund, 2000); and IMF staff calculations. For details on the methodology used in constructing this index, see Appendix I in Robert Sharer, *Trade Liberalization in IMF-Supported Programs*, World Economic and Financial Surveys (Washington: International Monetary Fund, 1998).

<sup>1</sup>Comprises Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand.

<sup>2</sup>Comprises Czech Republic, Hungary, Poland, Slovak Republic, Estonia, Latvia, and Lithuania.

### Box 2.2. Africa's Trade and the Gravity Model

A variety of trade issues have been analyzed using the gravity model, which has become one of the workhorses of empirical trade analysis. Applications include assessing whether countries “undertrade,” examining the effects of preferential trade agreements on creating and diverting trade, weighing the desirability of preferential trade agreements, and uncovering the effects of currency unions on trade and growth.<sup>1</sup> In its basic form, the model relates trade between two countries to the product of their incomes, size (typically proxied by population), and to the costs of trade (proxied by the distance between them).<sup>2</sup> These terms are analogous to Newton's equation for the force between two objects—hence the term gravity model. Dummy variables are included to control for geographical contiguity, cultural affinities, common language, and free trade agreements.

The model was used to examine three aspects of African trade:

- *Does Africa undertrade and has this changed over time?* This can be tested by running a gravity model over a wide range of countries and then introducing dummy variables identifying trade between all African countries and other groups of countries and separately for the two subgroups of Africa: eastern and southern Africa, and central and western Africa. The sign on these variables indicate whether African countries over- or undertrade compared to other similar countries, while the evolution of these dummy variables over time can shed light on how this is trending over time. In the results reported in the text, the dummies for Africa's trade as well as those for eastern and southern Africa and central and

western Africa were negative and significant, and fell over time, indicating that African trade was below that of the average trader and that this problem had been getting worse over time. These level results were particularly pronounced for African countries' trade with the advanced economies.

- *The effect of active regional free trade agreements.* This was examined by introducing a dummy variable for trade between members of the regional agreement and another dummy for trade between members of the agreement and the rest of the world for each of three active regional agreements in the 1990s. The impact of the trade agreement was then examined by observing the coefficients before and after implementation. Results indicate that members of the Regional Integration Facilitation Forum (RIFF, formerly the Cross-Border Initiative) have not significantly expanded their intraregional trade during the 1990s, but have reduced their trade with outsiders by about 15 percent—consistent with trade diversion. In the case of Western African Economic and Monetary Union (WAEMU) and the Central African Monetary and Economic Community (CAMEC), the performance of intratrade could not be tested because of the poor quality of trade data. However, the coefficient of the dummy for their trade with the advanced economies did not decline over time, suggesting an absence of diversion, but also no trade creation.
- *Evaluation of prospective African regional groupings.* The original model is augmented by including dummy variables for intragroup trade to examine if these countries are “natural trading partners,” which would reduce the likelihood that preferential integration will lead to trade diversion.<sup>3</sup> The dummies for the

<sup>1</sup>A short history of the gravity model is given in Jeffrey Frankel, and Andrew Rose, “Estimating the Effect of Currency Unions on Trade and Output,” CEPR Discussion Paper No. 2631 (London: Centre for Economic Policy Research, December 2000).

<sup>2</sup>Trade between two countries is expected to be an increasing function of their incomes and a decreasing function of trade costs. The sign of the population coefficient is ambiguous, although it is observed in general that small countries trade more than large ones.

<sup>3</sup>The natural trading partner hypothesis was advanced by Paul Krugman, “The Move Towards Free Trade Zones,” in *Policy Implications of Trade and Currency Zones*, Federal Reserve Bank of Kansas City (1991); and by Lawrence Summers “Regionalism and the World Trading System,” in *Policy Implications of Trade and Currency Zones*, Federal Reserve Bank of

Kansas City, 1991. It has been applied to gravity models by, among others, J. Frankel, *Regional Trading Blocs in the World Economic System*, (Washington: Institute for International Economics, 1991). The validity of the hypothesis is, however, contested (see J. Bhagwati, and A. Panagariya, "Preferential Trading Areas and Multilateralism—Strangers, Friends or Foes?" in J. Bhagwati and A. Panagariya, eds., *The Economics of Preferential Trade Agreements*" (Washington: American Enterprise Institute Press, 1996).

group and the slower growing countries in Asia group.<sup>32</sup>

- Countries in (largely English-speaking) eastern and southern Africa are more highly protected than those in (largely French-speaking) central and western Africa, where liberalization has proceeded rapidly recently in the context of regional integration arrangements.<sup>33</sup>

A second approach to measuring openness to trade and changes over time is to use a statistical model of trade. One such approach is to use a gravity model (one of the standard empirical models of trade, see Box 2.2), that explains bilateral trade in terms of the economic mass of the two countries and their distance apart (hence the name "gravity" model), as well as other fixed characteristics such as language. Using this benchmark estimate of what trade might be expected to be, one can then evaluate the degree to which actual trade patterns deviate from this norm.

Recent work by the IMF using a wide set of countries to analyze African trade, (paying

<sup>32</sup>See Robert Sharer, *Trade Liberalization in IMF-Supported Programs*, World Economic and Financial Surveys (Washington: International Monetary Fund, 1998), for a description of how this index is constructed.

<sup>33</sup>Notably, the West African Economic and Monetary Union (WAEMU) and Central African Economic and Monetary Community (CAEMC). Insofar as some of the nontariff barriers in central and western Africa are not adequately captured in the trade restrictiveness index, this assessment of the two sub-regions may need to be qualified.

SADC group and all eastern and southern African countries were positive and significant, indicating that member countries already trade substantially more with each other than the average set of countries. This is not true, however, for COMESA, which includes countries that do not appear to be natural trading partners with other each other.

particular attention to the low quality of African trade data)<sup>34</sup> yields the following conclusions:<sup>35</sup>

- Africa does indeed undertrade when compared with the average set of countries. For example, in the period 1997–98, sub-Saharan Africa's trade is about 65 percent less than what would be expected given Africa's income and geography.
- The degree to which Africa undertrades has steadily increased since the 1980s. By contrast, other developing countries have generally outperformed the model benchmark.
- Undertrading is more pronounced for countries in central and western Africa than in eastern and southern Africa, even though the former appear (on average) to have

<sup>34</sup>For example, smuggling and bad record keeping lead to a substantial under-recording of intraregional trade, particularly in central and western Africa. Indeed, many intraregional observations are zero, which creates statistical complications. As data on trade with advanced economies is less prone to these problems, especially if trade of African countries is measured on the basis of that reported by partner countries, results relating to trade with advanced economies may be more reliable.

<sup>35</sup>Arvind Subramanian and Natalia Tamirisa, "Africa's Trade Revisited," IMF Working Paper 01/33 (Washington: International Monetary Fund, 2001). Previous gravity model research, which is limited by only focusing on particular aspects of African trade, yielded the result that Africa's trade was not unusual. See Faezeh Foroutan and Lant Pritchett, "Intra-Sub-Saharan African Trade: Is it Too Little?" *Journal of African Economies*, Vol. 2 (May 1993), pp. 74–105, which focuses on intra-African trade; and David Coe and Alexander Hoffmaister, "North-South Trade: Is Africa Unusual?" *Journal of African Economies*, Vol. 8 (July 1999), pp. 228–56, which focuses on extra-African trade.

more open trade regimes (this issue is discussed further below).

- Undertrading is marked in Africa's trade with the advanced countries. This is particularly significant because trade with, or more specifically imports of capital goods from, advanced economies represents an important channel for transmitting the benefits of globalization.<sup>36</sup>

### Why Does Africa Undertrade?

A number of factors can account for the low level of African integration with global markets. First, as noted above, Africa's trade policies are more restrictive than those of other developing countries, which itself contributes to lower levels of trade.<sup>37</sup> A second factor could be the high level of transactions costs, particularly those related to trade. Key infrastructure sectors—telecommunications and transport—are less well developed, owing in part to domestic policies that have been detrimental to efficiency, and access to finance and trade credits is difficult.<sup>38</sup> The model finds evidence for this effect: African countries appear to face a trade-related cost disadvantage relative to Asia of about 20 percent. Surprisingly, Africa's heavy reliance on commodity exports does not seem to contribute to undertrading, although the income elasticity on commodity exports is often thought to be smaller than for manufacturing. A dummy for

primary commodity exporters is insignificant and does not affect the results relating to Africa's undertrading.<sup>39</sup>

It is striking that Africa's undertrading seems to have risen during the 1990s, at a time when African governments intensified their policy and institutional reforms with a view to enabling Africa to benefit from globalization. This could reflect in part the persistence of nontariff barriers, which are not adequately captured in the measures of trade restrictiveness. For example, marketing boards or monopoly purchasing agencies in key sectors (such as cotton in several countries in central and western Africa) continue to impede trade. In addition, other developing countries also liberalized their trade regimes, so Africa's relative level of openness may not have increased significantly. This may also help explain the greater undertrading in central and western Africa compared to eastern and southern Africa.

The contrasting evolution in trade between central and western Africa and eastern and southern Africa raises the possibility that other factors may also have played a role in trade marginalization in central and western Africa. For example, exchange rate misalignments, caused by large aid inflows, and particularly evident in the overvaluation of the CFA franc prior to 1994, may have had a debilitating effect on trade performance. It is also possible that trade restrictiveness in central and western Africa is understated because of nontariff barriers cited above are not fully captured.

Another reason for Africa's undertrading may be that Africa's regional agreements—which have proliferated in the 1990s—increased intra-African trade at the cost of reducing trade with the rest of the world, helping to explain the continued underperformance of African trade

<sup>36</sup>The technology embodied in capital goods increases productivity growth in the importing country (see David Coe, Elhanan Helpman, and Alexander Hoffmaister, "North-South R&D Spillovers," *Economic Journal*, Vol. 107 (January 1997), pp. 134–39).

<sup>37</sup>See Rodrik, *The New Global Economy and Developing Countries*.

<sup>38</sup>Sub-Saharan African policy regimes in two key infrastructure sectors—financial and telecommunications services—are highly restrictive both in absolute terms and relative to other developing countries. See Aaditya Mattoo, Randeep Rathindran, and Arvind Subramanian, "Measuring the Impact of Services Sector Liberalization on Growth: An Illustration," (unpublished; Washington: World Bank, 2001).

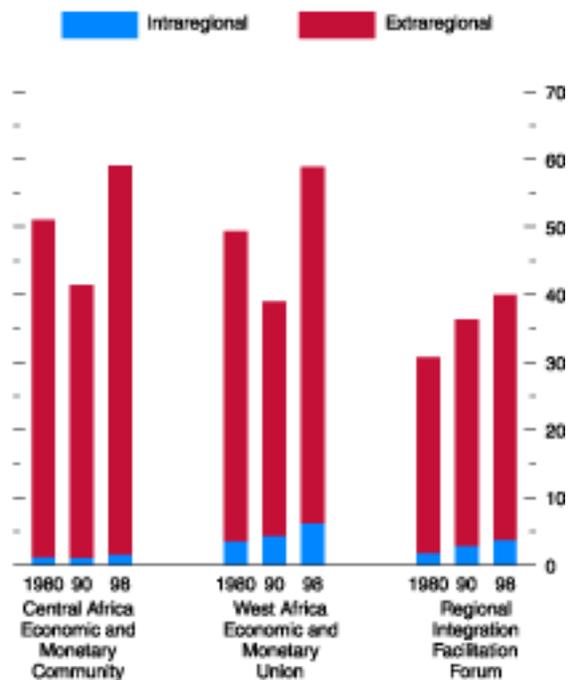
<sup>39</sup>Africa has witnessed more conflict and civil unrest than other countries, which could contribute to its undertrading; however, the gravity model captures the impact of these forces on trade to the extent that it is a consequence of reduced income.

with the advanced economies.<sup>40</sup> Regional trade agreements that lower tariffs within a group of countries but not with the rest of the world give rise to two opposing effects. When partner country production displaces production from more efficient non-members, there is trade diversion, which reduces welfare; however, when partner country production displaces higher cost domestic production, there is trade creation, which enhances welfare. While the relative magnitudes of these two effects are uncertain, trade diversion may be more likely in Africa than elsewhere because of higher trade barriers and relatively lower levels of efficiency. Figure 2.12 indicates that intra regional trade shares are low across most of the regional agreements, but gravity models allow for a better evaluation of the trade diversion and trade creation effects.

For three blocs that have made progress on integration—the RIFF (formerly, the CBI) in eastern and southern Africa and CAEMC and the WAEMU in western and central Africa—a preliminary gravity model exercise indicates that the RIFF may have reduced trade with the rest of the world while creating a relatively small expansion of intra-bloc trade. For CAEMC and WAEMU, by contrast there appears to have been no contraction in extra-regional trade. The results for RIFF are particularly striking because intra regional trade liberalization was accompanied by reductions in external barriers. While it is too early to tell, the overall implication is that regional trade integration has not as yet been a vehicle for substantial extra-African trade creation, particularly in enhancing links with the advanced economies.

**Figure 2.12. African Trade Arrangements: Intra and Extraregional Trade, 1980–98**  
(Percent of GDP)

Intraregional trade in African trade arrangements is probably quite low, even allowing for likely underrecording.



Source: IMF, *Direction of Trade Statistics*.

<sup>40</sup>Agreements that have been active in the 1990s have been WAEMU, CAEMC, and the Regional Integration facilitation Forum (RIFF), formerly the Cross-Border Initiative (CBI). Regional integration is also envisaged under the auspices of the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC), the East African Community (EAC), and the Indian Ocean Commission (IOC). The Southern African Customs Union (SACU) is a long-standing regional agreement.

## The Road Ahead

Africa stands to gain if its marginalization from trade can be reversed. How can trade and other policies, including regional integration, help secure this objective?

First and foremost, a large unfinished agenda of trade liberalization lies ahead. Pervasive quantitative restrictions, high tariffs, and widespread exemptions continue to characterize trade regimes in a number of countries (in particular, Ethiopia, Kenya, and Zimbabwe), reducing tariff collection efficiency and leading to wasteful rent seeking.<sup>41</sup> And trade restrictions in the form of marketing boards, particularly in the cotton sector in western Africa (Mali, Burkina Faso, Benin, and Chad) and Kenya, and export taxes (in Mozambique) impede the development of key export sectors.

Second, a key to improving trade prospects lies in reducing transaction costs, particularly those related to trade. This can be achieved by enhancing the efficiency of important infrastructure sectors through a combination of privatization and effective, pro-competitive regulation. The latter is especially important in Africa because its small markets, combined with the natural economies of scale in infrastructure sectors, may not be able to sustain effective competition.

Third, the extra-national institutional anchors created by a trade agreement can help gain credibility for an open trade policy, thereby promoting and maintaining sound trade policies.<sup>42</sup> Given the history of trade policy reversals in Africa, establishing credibility is essential to foster a stable climate for private enterprise.<sup>43</sup> For

<sup>41</sup>In a number of countries in eastern and southern Africa, less than half of tariff revenues are collected, owing to exemptions (see Arvind Subramanian, *Trade and Trade Policies in Eastern and Southern Africa*, IMF Occasional Paper No. 196 (Washington: International Monetary Fund, 2000)).

<sup>42</sup>See Paul Collier and Jan Gunning, "Trade Policy and Integration: Implications for the Relations between Europe and Africa," *The World Economy*, Vol. 18 (May 1995), pp. 387–410.

<sup>43</sup>For example, eight out of 21 countries in Eastern and Southern Africa reversed, albeit not permanently, some of the trade liberalization during the 1990s (see Subramanian, *Trade and Trade Policies in Eastern and Southern Africa*).

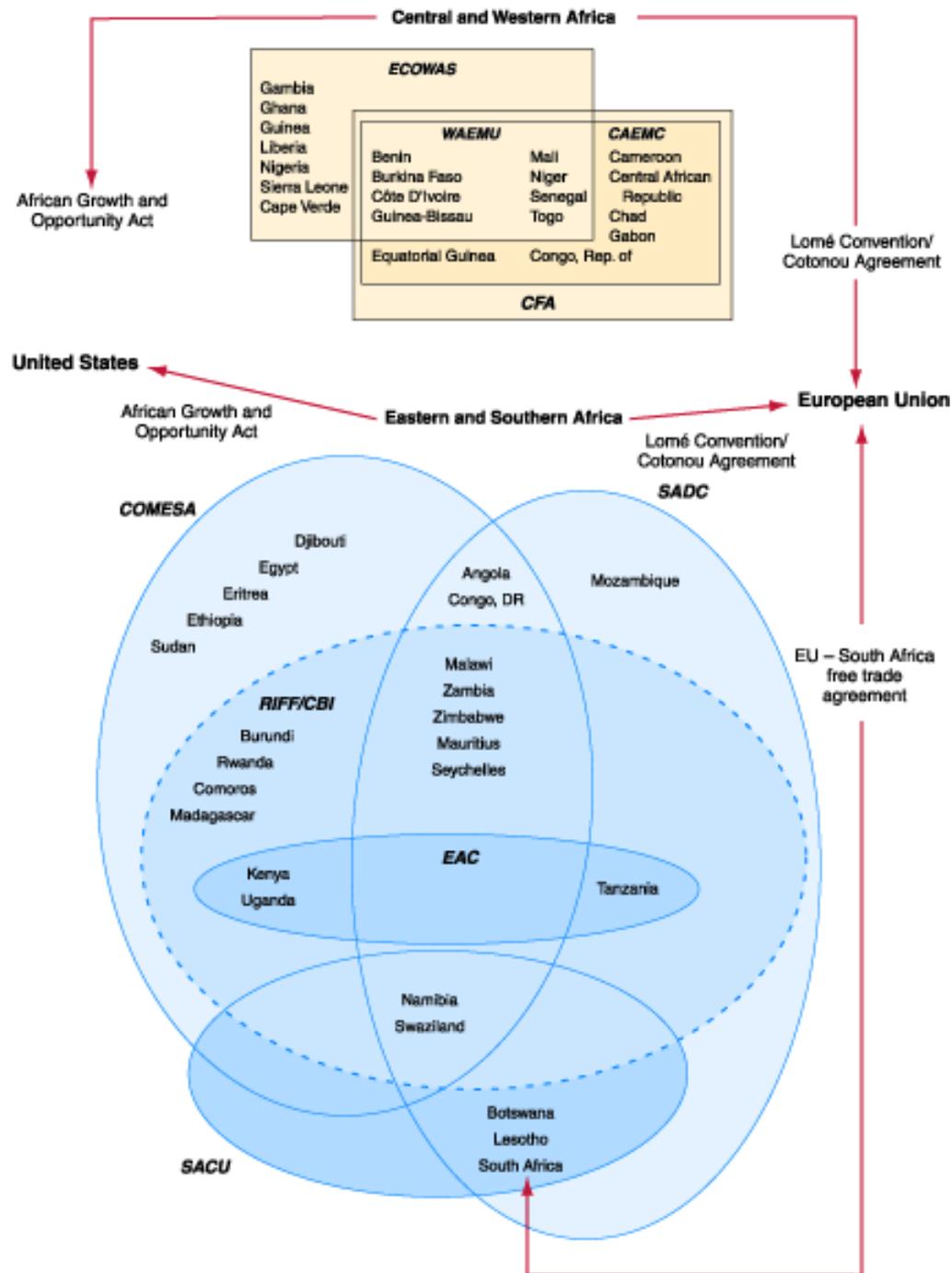
Africa, in addition to the use of multilateral commitments under the WTO, locking-in mechanisms could include regional agreements (with peer pressure serving as an agency of restraint as being developed in WAEMU and CAEMC) and free trade agreements with industrial country trading partners.

### *The Role of Regional Integration*

Given the renewed political impetus for regional integration, how can it be channeled in a way that maximizes the benefits and minimizes risks? First and foremost, countries should steadfastly implement their regional liberalization commitments. The track record of compliance, while improving, could be better. At the same time, progress on external liberalization will lessen the risks of inefficient trade diversion. In eastern and southern Africa, the overlapping set of trade arrangements (known as the "spaghetti bowl") creates a number of problems (Figure 2.13). First, some countries face conflicting obligations: as members of a future customs union (COMESA) they will not be able to offer preferences to non-members with whom they are partners in another free trade arrangement (SADC). Second, implementation can be difficult when countries are simultaneously members of several arrangements. Customs officials face the difficult task of establishing the origin of goods coming from different groups of countries, while rules of origin will also complicate marketing and production decisions, creating an uncertain climate for investors. Third, the sheer administrative and political costs and distraction stemming from multiple initiatives create difficulties.

Given that the countries in eastern and southern Africa may be a natural trading bloc, rationalization of the current situation, possibly in the form of a single arrangement, may be worth considering. At the least, there needs to be harmonization of the measures adopted by the different arrangements, including common rules of origin, external tariffs that are similar in structure and rates, and compatible standards. As the largest economy in the region, the country with the strongest links with neighbors, and

Figure 2.13. Africa: The Regional Trade Integration Quilt



Note: ECOWAS is the Economic Community of West African States; WAEMU, the West African Economic and Monetary Union; CAEMC, the Central African Economic and Monetary Community; CFA, Communauté Financière d'Afrique, or African Financial Community; COMESA, the Common Market for Eastern and Southern Africa; SADC, the Southern African Development Community; RIFF, the Regional Integration Facilitation Forum, formerly the Cross-Border Initiative in Eastern and Southern Africa (CBI); SACU, the Southern African Customs Union; IOC, the Indian Ocean Commission; and EAC, the East African Community.

one that has signed a free trade agreement with the European Union, South Africa would be the most likely anchor for such an initiative, although it is not a member of the largest regional initiative, COMESA.<sup>44</sup>

African countries could also seek reciprocal free trade agreements with advanced industrial country partners.<sup>45</sup> The agreement between South Africa and the European Union presages wider reciprocal agreements between countries in Africa on the one hand, and advanced economies on the other. The advantages of such an approach over regional integration confined to Africa are threefold. First, the locking-in benefits will be stronger because of the presence of strong anchors with the ability and willingness to ensure compliance with policy commitments.<sup>46</sup> Second, a reciprocal agreement would provide more secure market access for African exports, access which under current arrangements is conditional, partial, and unilaterally granted rather than contractually committed to by advanced economies. Third, as discussed previously, integration with advanced economies is more likely to elicit growth-enhancing foreign direct investment and technology flows.<sup>47</sup> The more outward oriented the

<sup>44</sup>On integration going beyond trade, governments in Africa will need to identify areas where the regional approach will have the maximum benefits, such as reducing wasteful tax competition between countries, cooperating on infrastructure projects (especially transportation and electrical grids), and promoting competition in services by creating an integrated market so that suppliers—be they domestic or foreign—can exploit economies of scale.

<sup>45</sup>This point is forcefully made by Collier and Gunning, “Trade Policy and Integration.” Reciprocal trade integration is envisaged as part of the Cotonou Agreement and also under the U.S. Africa Growth and Opportunity Act.

<sup>46</sup>The locking-in of reforms has been argued to be the most important benefit for Mexico under the North American Free Trade Agreement (NAFTA).

<sup>47</sup>Of course, even this approach would be inferior to the first-best approach of liberalization on a most-favored-nation (or nondiscriminatory basis) by African countries

African trade regime, the more comprehensive the product coverage under regional agreements, and the greater number of advanced economies involved in the agreements, the greater the benefits of such an approach.

Africa’s trading partners can also play an important role in facilitating Africa’s integration with the world economy. It is estimated that if the European Union, Japan, Canada, and the United States eliminated their trade barriers (tariff and nontariff) on African trade, exports would rise by about \$2.5 billion or (14 percent), raising African income levels.<sup>48</sup> The recent move by the European Union to lower tariffs for African countries on a wide range of products is very welcome, following significant market opening measures by Canada, Japan, Korea, New Zealand, Norway, and the United States. Still more can and should be done by these and other countries to eliminate remaining barriers to exports of the poorest countries.

Finally, trade policy does not occur in a vacuum. In particular, increasing global trade integration will present Africa with some domestic economic challenges. Given the high level of tariff barriers, trade liberalization will create fiscal pressures. In addition, the gains from integration will inevitably be accompanied by the short-term costs of adjustment, as resources are relocated within the economy, with accompanying economic uncertainties. Strengthening the tax base and instituting effective social safety nets are thus necessary complements to promoting trade integration and to the substantial benefits that more open trade policies will provide.

---

and the elimination of all market access barriers by the advanced economies.

<sup>48</sup>See Elena Ianchovicina, Aaditya Mattoo, and Marcelo Olarreaga “Unrestricted Market Access for Sub-Saharan Africa: How Much Is It Worth and Who Pays,” World Bank Policy Research Working Paper (Washington: World Bank, forthcoming).