CHAPTER I CONTAINING THE RISKS TO THE GLOBAL ECONOMY

The outlook for the global economy has deteriorated further in recent months, with growth continuing to weaken in almost all major regions of the world. The tragic events of September 11 and their aftermath, as well as evidence that the world economy was weaker than expected in the period before the attacks, contributed to a sharp deterioration in confidence across the globe, accompanied by a flight to quality in both mature and emerging markets, and a deterioration in emerging market financing conditions. As a result, prospects for global recovery have been set back significantly, and the IMF's projections for global growth have been marked down substantially since the October 2001 World Economic Outlook*, by 0.2 percentage point to 2.4 percent in 2001, and by 1.1 percentage point to 2.4 percent in 2002 (Table 1.1 and Figure 1.1). While there are good reasons to expect a recovery to get under way in 2002, the outlook remains highly uncertain, and there is a significant possibility of a worse outcome, which could involve lower growth and external financing difficulties for many countries. Correspondingly, the primary challenge for policymakers is how best to support the prospects for recovery, and to limit the risks attendant on a deeper and longer downturn should that occur.*

Since late 2000, growth has slowed sharply in almost all major regions of the world, accompanied by a marked decline in trade growth, significantly lower commodity prices, and deteriorating financing conditions in emerging markets (Figure 1.2). Before the terrorist attacks of September 11, there appeared a reasonable prospect of recovery in late 2001, although—as stressed in the October 2001 *World Economic Outlook*—the situation remained fragile and vulnerable to unexpected developments, and a significant danger of a deeper and more prolonged downturn remained. Data since that time indicate that the situation before the attacks was in fact weaker than earlier projected in many regions, including the United States, Europe, and Japan, as well as in a number of emerging market economies in Asia and Latin America.

The tragic events of September 11 exacerbated an already very difficult situation in the global economy. Following the attacks, consumer and business confidence have further weakened across the globe (Figure 1.3), and there was also a significant initial impact on demand and activity, particularly in the United States, although there are some signs that this is now beginning to stabilize. There was an initial generalized shift away from risky assets in both mature and emerging markets, including a substantial deterioration in financing conditions for emerging market countries. Over the ensuing period, however, financial markets have generally strengthened, reflected in a recovery in equity markets and most recently signs that the earlier flight to quality has begun to reverse (including a decline in high yield and many emerging market bond spreads to pre-September 11 levels). Movements in major exchange rates have on net been moderate, with the U.S. dollar appreciating modestly against the euro and the yen. As the outlook for global growth has weakened, commodity prices have fallen back further, especially for oil.

At present, the outlook is subject to great uncertainty, evident for example in the sharp increase in dispersion in private sector forecasts (Figure 1.4). It remains very difficult to judge how quickly confidence will rebound and how financial market conditions will develop, with

Table 1.1. Overview of the *World Economic Outlook* Projections

(Annual percent change unless otherwise noted)

			Current Projections		Difference from October 2001 Projections	
	1999	2000	2001	2002	2001	2002
World output	**3.6**	**4.7**	**2.4**	**2.4**	**–0.2**	**–1.1**
Advanced economies	3.3	3.9	1.1	0.8	–0.2	–1.3
Major advanced economies	3.0	3.5	1.0	0.6	–0.2	–1.3
United States	4.1	4.1	1.0	0.7	–0.3	–1.5
Japan	0.7	2.2	–0.4	–1.0	0.1	–1.3
Germany	1.8	3.0	0.5	0.7	–0.2	–1.1
France	3.0	3.5	2.1	1.3	0.1	–0.8
Italy	1.6	2.9	1.8	1.2	0.1	–0.8
United Kingdom	2.1	2.9	2.3	1.8	0.2	–0.6
Canada	5.1	4.4	1.4	0.8	–0.6	–1.4
Other advanced economies	4.9	5.2	1.5	1.9	–0.4	–1.3
Memorandum						
European Union	2.6	3.4	1.7	1.3	–0.1	–0.9
Euro area	2.6	3.4	1.5	1.2	–0.3	–1.0
Newly industrialized Asian economies	7.9	8.2	0.4	2.0	–0.6	–2.2
Developing countries	3.9	5.8	4.0	4.4	–0.4	–0.9
Africa	2.5	2.8	3.5	3.5	–0.3	–0.9
Developing Asia	6.2	6.8	5.6	5.6	–0.2	–0.5
China	7.1	8.0	7.3	6.8	–0.2	–0.3
India	6.8	6.0	4.4	5.2	–0.1	–0.5
ASEAN-4[1]	2.9	5.0	2.3	2.9	–0.1	–1.2
Middle East, Malta, and Turkey	1.1	5.9	1.8	3.9	–0.5	–0.9
Western Hemisphere	0.1	4.1	1.0	1.7	–0.7	–1.9
Brazil	0.5	4.4	1.8	2.0	–0.4	–1.4
Countries in transition	3.6	6.3	4.9	3.6	0.8	–0.4
Central and eastern Europe	2.0	3.8	3.0	3.2	–0.5	–1.0
Commonwealth of Independent States and Mongolia	4.6	7.8	6.1	3.9	1.7	–0.1
Russia	5.4	8.3	5.8	3.6	1.8	–0.4
Excluding Russia	2.8	6.8	6.8	4.6	1.5	0.5
World trade volume (goods and services)	**5.4**	**12.4**	**1.0**	**2.2**	**–1.8**	**–3.1**
Imports						
Advanced economies	7.7	11.5	–0.3	1.4	–2.0	–3.3
Developing countries	1.7	16.1	5.0	6.5	–1.4	–1.6
Countries in transition	–7.8	12.6	11.2	7.8	1.1	–0.2
Exports						
Advanced economies	5.2	11.6	–0.3	0.5	–2.1	–4.0
Developing countries	4.7	15.0	3.4	4.5	–1.6	–2.0
Countries in transition	0.2	16.3	7.8	6.4	0.7	–0.1
Commodity prices						
Oil[2]						
In SDRs	36.5	62.6	–11.2	–24.2	–9.8	–15.4
In U.S. dollars	37.5	56.9	–14.0	–23.7	–9.1	–15.1
Nonfuel (average based on world commodity export weights)						
In SDRs	–7.8	5.6	–2.3	1.1	–3.3	–3.2
In U.S. dollars	–7.0	1.8	–5.5	1.7	–2.8	–2.7
Consumer prices						
Advanced economies	1.4	2.3	2.3	1.3	–0.1	–0.4
Developing countries	6.8	5.9	6.0	5.3	0.1	0.2
Countries in transition	43.9	20.1	16.0	11.0	–0.3	0.3
Six-month London interbank offered rate (LIBOR, percent)						
On U.S. dollar deposits	5.5	6.6	3.8	2.8	–0.3	–0.9
On Japanese yen deposits	0.2	0.3	0.2	0.1	—	—
On euro deposits	3.0	4.6	4.1	2.9	–0.2	–1.0
Memorandum						
World growth based on market exchange rates	3.0	4.0	1.4	1.2	–0.2	–1.3

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during September 17–October 16, 2001.

[1]Includes Indonesia, Malaysia, the Philippines, and Thailand.

[2]Simple average of spot prices of U.K. Brent, Dubai, and West Texas Intermediate crude oil. The average price of oil in U.S. dollars a barrel was $28.21 in 2000, the assumed price is $24.20 in 2001, and $18.50 in 2002.

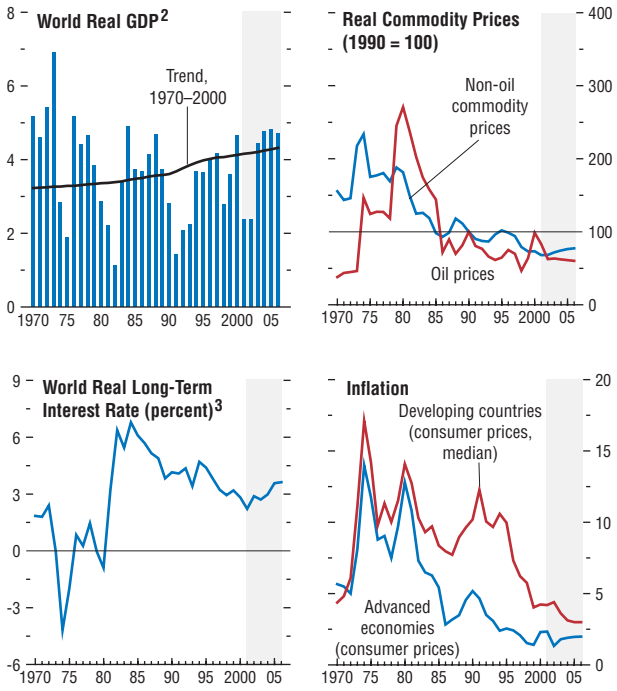
much continuing to depend on noneconomic factors, including the progress in the war against terrorism. Notwithstanding these uncertainties, there are a number of factors that will help to support recovery during 2002. First, policymakers have generally moved quickly to support activity. Monetary policy has been eased substantially in most major industrial countries, most notably the United States, where nominal short-term interest rates are now at a 40-year low, and an additional fiscal package is also under discussion. Together with the earlier macroeconomic stimulus already in the pipeline, these measures will provide significant support to activity in the course of 2002. Second, as discussed in Chapter II, oil prices have weakened sharply, reflecting weaker global demand and OPEC's continued difficulties in coordinating production cuts, particularly among non-OPEC producers. This will help support global activity, although there are clearly negative effects for oil producers, including a number of highly indebted countries. Third, the completion of ongoing inventory corrections will provide support to demand. Finally, the strengthening of economic fundamentals in many countries in recent years—notably lower inflation, generally improved fiscal positions, stronger external financial positions in many emerging market countries, especially Asia, and a shift toward more flexible exchange rates—has increased the room for policy maneuver and resilience to external shocks. Partly as a result, there appears to have been greater investor discrimination among countries than in some earlier episodes (see the Appendix to this chapter).

A particularly disturbing feature of the current slowdown is its synchronicity across nearly all regions (Figure 1.5), the most marked for at least two decades. To a considerable extent, this synchronicity is the result of common shocks, including the increase in oil prices and the bursting of the information technology (IT) bubble, both of which had a worldwide impact. Increased international linkages, particularly in the financial and corporate sectors, have played

Figure 1.1. Global Indicators[1]

(Annual percent change unless otherwise noted)

Global growth is projected to slow markedly in 2001–02, while inflation remains subdued.



[1]Shaded areas indicate IMF staff projections. Aggregates are computed on the basis of purchasing-power-parity weights unless otherwise indicated.

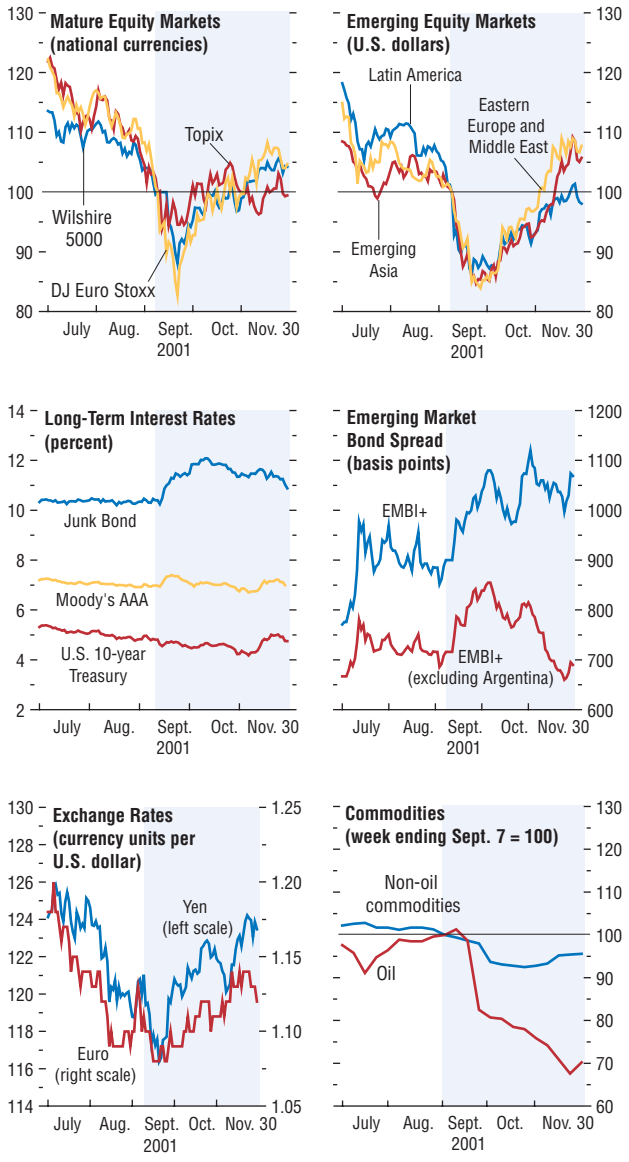
[2]Average growth rates for individual countries, aggregated using purchasing-power-parity weights; these shift over time in favor of faster growing countries, giving the line an upward trend.

[3]GDP-weighted average of the 10-year (or nearest maturity) government bond yields less inflation rates for the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada. Excluding Italy prior to 1972.

Figure 1.2. Selected Financial Market Indicators

(September 10, 2001 = 100 unless otherwise noted)

Financial markets have generally recovered from initial losses following the September 11 attacks, and spreads have also declined.



Sources: Bloomberg Financial Markets, LP; and IMF staff estimates.

a role—a trend that is likely to continue. The synchronicity of the downturn may also reflect delays in implementing structural reforms, notably in Japan and the euro area, which have meant that these countries have been less well placed to take up the slack when the long expansion in the United States came to an end.

The IMF's projections now envisage a deeper and more prolonged global slowdown than foreseen in the October 2001 *World Economic Outlook* (where the forecast was completed before the September 11 events). Global GDP growth is now projected at 2.4 percent in 2001, and is expected to remain at about that level in 2002 (a reduction of about 1 percentage point from the forecast made prior to the attacks).[1] However, with the recovery picking up during 2002 as the positive impact of the factors described above begins to be felt, global growth for 2003 as a whole would be expected to bounce back strongly:

- Among the industrial economies, the recession in the *United States* is expected to be followed by a recovery during 2002 as the positive factors noted above take effect. *Canada* is expected to follow a similar pattern, reflecting its close integration with the United States. Projections for the *euro area* have been reduced markedly, especially for *Germany*, reflecting both the weaker-than-expected situation before the September 11 attacks as well as the aftermath. The outlook for *Japan* has become increasingly worrying, and the economy is now expected to experience two consecutive years of contraction for the first time in the postwar period, and the situation in the banking system is of increasing concern.
- Among emerging market countries, the effects of recent events vary widely, depending on the structure of the economy and the strength of economic fundamentals. The

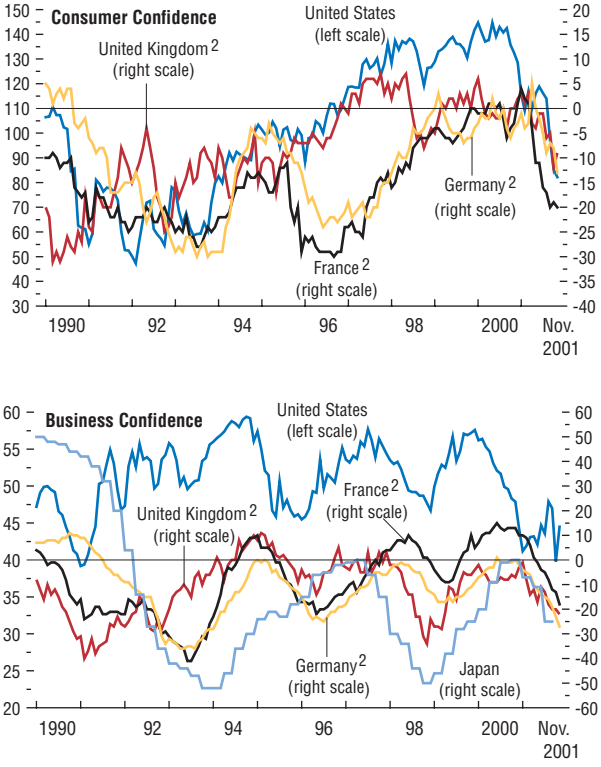
[1]Evaluated using weights based on market exchange rates, rather than purchasing power parity weights used in the *World Economic Outlook*, global growth would be 1.4 percent in 2001 and 1.2 percent in 2002.

impact has been particularly heavy in *Latin America*, where a number of countries may be affected by the deterioration in external financing conditions, the precarious situation in *Argentina*, weaker external demand, including the marked downturn in tourism, and lower commodity prices, especially oil. In *emerging Asia*, growth is expected to remain reasonably robust in *China* and to a lesser extent *India*, which are less exposed to external developments; elsewhere, notwithstanding additional policy stimulus and the generally beneficial effect of lower oil prices and lower global interest rates, growth has been marked down sharply owing to weakening external demand and the further deterioration in the IT sector. In the *Middle East*, growth will be adversely affected by lower oil prices and production, and in some cases weaker remittances and tourism revenues. In *Turkey*, the outlook has been affected by weaker external demand, especially for tourist services, and more difficult financing conditions. In contrast, the impact of recent events in the *Commonwealth of Independent States* is expected to be modest, buoyed by strong domestic demand in *Russia*. Growth in *central and eastern Europe* is also expected to remain reasonably resilient, owing mainly to the benefits of lower oil prices and supportive policies.

- The poorest countries are being hurt by weaker external demand and falling commodity prices, with oil exporters particularly affected. Nonfuel commodity exporters will also be affected by further weakness in already depressed prices, especially for agricultural commodities, although for some the benefits from lower oil prices will limit the increase in external financing requirements. On the macroeconomic side, while the outlook for individual countries varies widely, growth is projected to be relatively well sustained for the group as a whole. However, this may understate the impact on poverty, as lower prices for agricultural goods will hurt rural areas, where most of

Figure 1.3 Selected European Union Countries, Japan, and United States: Indicators of Consumer and Business Confidence[1]

Business and consumer confidence have continued to weaken across the globe since September 11.



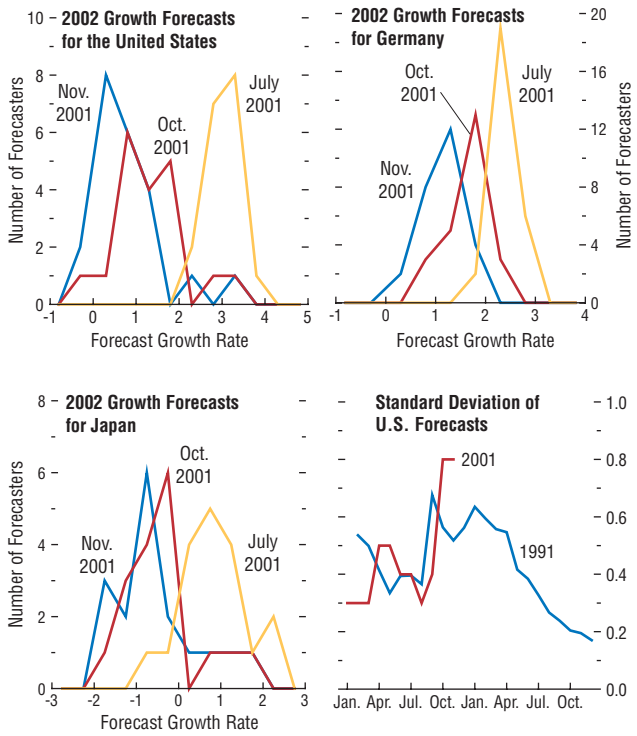
Sources: Consumer confidence for the United States, the Conference Board; for European countries, the European Commission. Business confidence for the United States, the U.S. Department of Commerce, Purchasing Managers Composite Diffusion Index; for European countries, the European Commission; and for Japan, Bank of Japan.

[1] Indicators are not comparable across countries.

[2] Percent of respondents expecting an improvement in their situation minus percent expecting a deterioration.

Figure 1.4. Private Sector Forecasts
(Percent)

Private sector forecasts have been revised downwards substantially since the September 11 attacks, and their dispersion has increased significantly—as was the case during the run up to the Gulf War.



Source: Consensus Economics, Inc.

the poor live, while the benefits of lower oil prices tend to accrue in urban areas.

As already noted, there are unusually large uncertainties and risks to the forecast. With substantial policy stimulus in the pipeline, particularly in the United States, faster-than-expected progress in the war on terrorism in Afghanistan, and possible downside risks to oil prices, there is a possibility that recovery in 2002 could come more rapidly than presently expected. This outturn also appears to be expected in financial markets given the recovery in equity markets, and the steepening of yield curves. Were that to occur, policymakers would need to begin to withdraw a portion of the stimulus that is now in the pipeline. However, given the already difficult situation for the global economy, and the large costs associated with a deeper slowdown, the possibility of a worse outcome remains the major policy issue at the current juncture. There are four interlinked areas of risk (whose implications for the outlook are discussed in more detail in Chapter III):

- *Confidence and activity in the United States may pick up more slowly than currently expected.* For instance, the effects of the terrorist attacks themselves may prove more prolonged; or recovery may be more severely hampered by the imbalances accumulated in the past, including overinvestment, particularly in the IT sector, and consumers' relatively high indebtedness.[2] In addition, there are also downside risks to activity in the *other major currency areas.* With no major region providing substantive support to activity, further weakness in any one area would reinforce the already synchronized downturn. This could result in a renewed withdrawal from risk taking in financial markets, as well as even lower commodity prices, both of which would adversely affect developing countries in general and emerging market economies in particular.

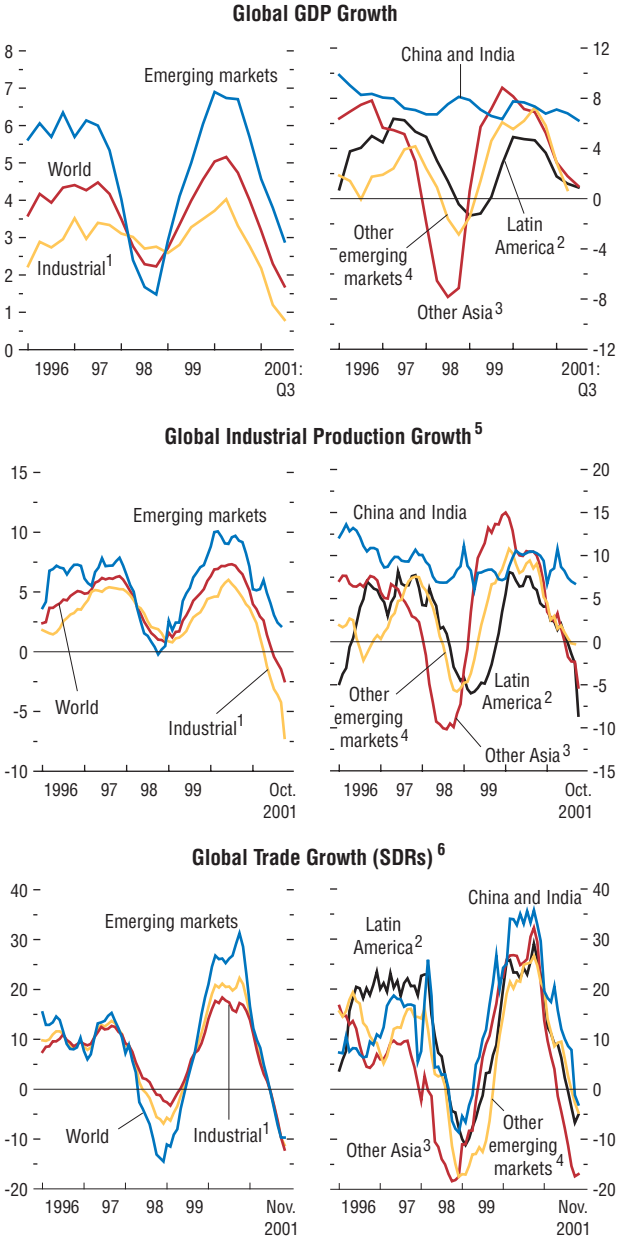
[2]See "Alternative Scenarios—How Might Medium-Term Productivity Growth Affect the Short-Term Outlook," Chapter I, Appendix II of the October 2001 *World Economic Outlook.*

- *The outlook for many emerging market countries will continue to depend on developments in global risk aversion and the period for which bond issuance is largely limited to only high grade borrowers, as well as the extent of the squeeze generated by refinancing pressures in the meantime.* While the recent decline in spreads is encouraging, market access for many countries remains limited. Financing pressures could become significantly larger and more widespread if the global outlook deteriorates further, or the resolution of a credit event in a major emerging market proves disorderly and prolongs or exacerbates difficult market conditions.
- *The imbalances in the global economy—including the large U.S. current account deficit and surpluses elsewhere, the apparent overvaluation of the U.S. dollar, and richly valued equity markets by historical standards—remain an important source of risk.* As discussed in Chapter II, mature equity markets appear to be pricing in a relatively rapid recovery—although they remain well below their levels in March, when the U.S. recession began—and currency options market data suggest that expectations of a sharp depreciation in the U.S. dollar have not increased since the attack. However, it remains unclear whether asset markets have fully priced in the deterioration in corporate credit quality and earnings prospects that has occurred thus far. An abrupt adjustment remains possible, particularly if the global growth outlook were to prove worse than expected, especially given the recent reduction in market liquidity—notably in the markets for credit swaps and derivatives—and the financial difficulties faced by some major market participants, including insurance companies.
- *Slowing growth and a further flight to quality in financial markets would increase pressure on corporate and financial sectors across the globe.* This is of particular concern in Japan, where banks are highly exposed to developments in equity and bond markets, but may also

Figure 1.5. Global Output, Industrial Production, and Trade Growth

(Percent change from four quarters earlier)

Growth in output and industrial production has weakened in almost every region of the globe, accompanied by a sharp slowdown in the growth of trade flows.



Sources: Central banks and ministries of finance; and European Central Bank *Monthly Bulletin.*

[1]Canada, Euro area, Japan, United Kingdom, and United States.

[2]Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

[3]Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan Province of China, and Thailand.

[4]Czech Republic, Hungary, Israel, Poland, Russia, Turkey, Pakistan, and South Africa.

[5]Twelve-month percent change of three-month moving average.

[6]Defined as exports plus imports of the relevant region. Twelve-month percent change of three-month moving average.

become more important in other countries in Asia and Latin America.

Against this background, the primary challenge faced by policymakers is how best to support the prospects for recovery and to limit the risks attendant on a deeper and longer recession. In doing so, a variety of factors need to be taken into account. First, given the synchronicity of the slowdown, policies in both industrial and developing countries must be viewed in a global perspective to ensure that there is adequate global demand. Second, the nature of the policy response is affected by the uncertainty in the outlook, and—with inflationary pressures across the globe increasingly subdued—the relatively higher costs associated with a weaker-than-projected outlook (Box 1.1). Finally, account also needs to be taken of existing fiscal frameworks, like the Stability and Growth Pact in the euro area, and country specific constraints, like Japan's already very high fiscal deficit and government debt.

Given the degree of uncertainty and the constraints on fiscal policies in a number of countries, monetary policy—the most flexible instrument—has appropriately played the primary role to date. Nonetheless, fiscal policy should also play a role, particularly through the operation of the automatic stabilizers, and it will be important that countries do not interpret their individual constraints too rigidly, particularly if the situation deteriorates further. From a global perspective, there are two potential concerns. First, policy easing in the United States could exacerbate already large imbalances, including the large external current account deficit. While this should not constrain short-term macroeconomic policies in present circumstances, policies over the medium term—both in the United States and elsewhere—must be consistent with reducing those imbalances. Second, given the increasingly difficult external environment, many emerging market countries have been forced to restrain domestic demand to maintain the confidence of international investors. The aggregate effect is of particular importance in certain regions, but also adds a further downward impulse to global demand, which—while presently moderate from a global perspective[3]—could become larger if the situation were to deteriorate further.

Against this background, there is a need for a coordinated and collaborative policy response by the international community.[4] In industrial countries, which remain the key engines of growth in the world economy, economic policies should help to sustain demand, especially given the synchronized nature of the slowdown. To date, monetary policy has appropriately been eased, and further room remains if necessary, including through a more aggressive approach to monetary easing in Japan. On the fiscal side, additional stimulus presently under consideration in the United States could be helpful if implemented sufficiently rapidly, while demand is still weak. It should be carefully designed to shore up consumer confidence and boost activity in the short run, without exacerbating medium-term fiscal pressures (see Box 3.2). In Europe, the automatic stabilizers should be allowed to operate in full, while in Japan the second supplementary budget will go a significant way toward avoiding a withdrawal of stimulus in 2002, and thereby reducing downside risks to activity. Structural reforms in Japan and Europe remain crucial, both to improve growth potential and boost confidence, and to help reduce global imbalances over the longer term.

In developing and emerging markets, there is considerably less room for policy maneuver, although where it exists it should be used. From the domestic policy perspective, early adjustment where necessary remains critical, accompanied by structural reforms—particularly of financial and corporate sectors—to help reduce vulnerability. For its part, the international community should provide strong support for such efforts, both through the international financial institutions and other channels. Particularly if the global situation were to deteriorate further, due attention

[3]Net debtor developing countries account for 18 percent of global trade.

[4]As noted by the IMF's Managing Director (Köhler, 2001).

Box 1.1. Policymaking Under Uncertainty

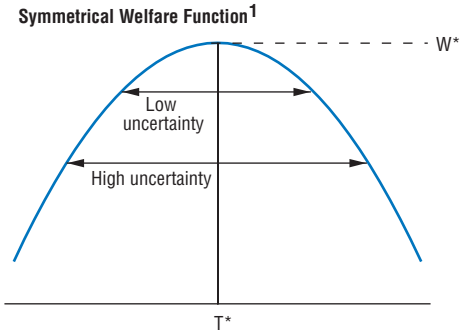
An important problem faced by policymakers is uncertainty, both about the future economic environment and the effects of policies themselves. In setting instruments, policymakers must accept that desired outcomes will not, in general, be realized due to unanticipated factors. Furthermore, the degree of uncertainty is likely to change over time. For instance, a banking crisis could increase uncertainty about the effectiveness of monetary policy. Of more immediate relevance, the September 11 terrorist attacks have not only led to lower growth forecasts, but also increased the variance around these forecasts. Should policymakers take uncertainty into account in setting instruments? If so, what is the appropriate response to heightened uncertainty?

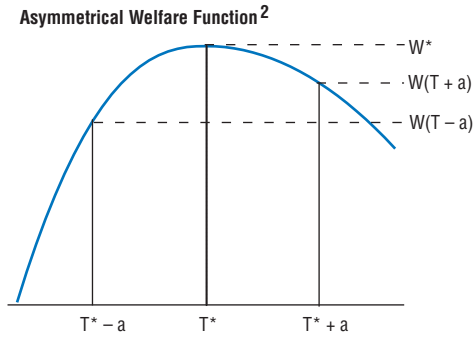
Conceptually, uncertainty matters in the presence of "nonlinearities" in the costs of deviating from desired outcomes. The first panel in the figure provides a hypothetical example of a nonlinear relationship between a social welfare index and a policy target. Given uncertainty, the desired level of the target variable cannot be systematically attained, and social welfare will average less than its maximum value. Furthermore, social welfare will fall as the variance of outcomes for the target variable rises. This relationship forms the basis of the prescription that policies should, in general, "underreact" to changes in the economic environment when their effects are uncertain: the benefit of moving the expected value for the objective closer to its optimal level must be traded off against creating greater volatility in the objective due to uncertainty regarding the effects of policies.[1]

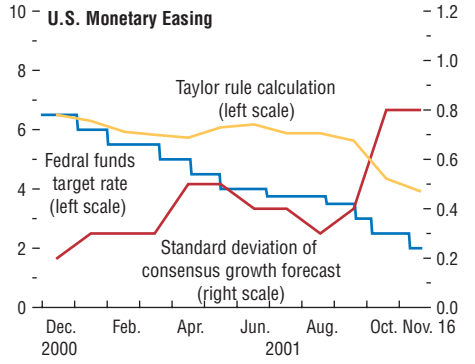
Is there also a case for *amplifying* the response? The latter approach can be justified when the costs of deviating from a desired outcome are "asymmetric" and the degree of uncertainty changes. The second panel in the figure illustrates a relationship where the loss in social welfare when the target variable is below its opti-

[1]Relative to the response required to move the expected value for the target variable back to its original level. See Brainard (1967).

Policy Targets and Welfare Functions







Sources: Bloomberg Financial Markets, LP; Consensus Forecast; and IMF staff estimates.

[1]Social welfare is maximized at W* when the policy target is at T*. But T* cannot be hit with certainty. As the dispersion of outcomes around T* increases, the average level of W decreases.

[2]Equal-sized deviations in the policy target around T* have different effects on welfare—exceeding the target is less costly than falling short of it. Policies should aim for a level of T that exceeds T*. This difference will rise as the volatility of T increases.

Box 1.1 *(concluded)*

mal level is greater than when it exceeds it. An example of why such an asymmetry might exist involves the zero lower bound for nominal interest rates. When inflation is initially low, a negative output shock would increase the chances of hitting this lower bound, at which point conventional monetary instruments would become ineffective at stimulating demand. Given such an asymmetry, expected social welfare is raised when policymakers aim for a level of the target that exceeds its optimal value in the absence of uncertainty, with a gap that increases as uncertainty rises.

The recent terrorist attacks have both lowered growth forecasts and increased uncertainty around them. Assuming the "optimal" level of real growth in the absence of uncertainty is unchanged,[2] how should policies respond? In the presence of uncertainty about the effects of policies, the traditional argument calls for easing by less than needed to restore expected growth to its initial level. With increased uncertainty around the growth forecast and greater costs to low versus high outcomes, however, there is an argument for easing by more than this amount.

The relative weight of these arguments depends on the degree of uncertainty in the effects of policies compared with differences in the costs of low versus high outcomes. This balance will vary over time and across countries. In the United States, the success of monetary authorities in conducting policy in recent years suggests that policy effects have been relatively predictable. In addition, enhanced credibility has reduced the risk that temporary economic overheating could destabilize inflation expectations.

[2]This characterization, of course, abstracts from many real world policy considerations.

On the downside, the abrupt drop in growth forecasts, weakening confidence, and the reversal of earlier price shocks raises deflationary risks. In this environment, it seems natural to attach greater weight to the risks of weaker rather than stronger growth, suggesting a relatively strong response. This seems consistent with the recent behavior of the U.S. Federal Reserve. As shown in the third panel, the Federal Reserve funds target rate has been lowered by more since the end of 2000 than a simple "Taylor-rule" calculation would indicate.[3] At the same time, uncertainty about the forecast has risen, as indicated by the rise in the standard deviation of the Consensus growth forecast for 2002.

Another issue concerns the choice of policy instrument—that is, monetary or fiscal policy. Monetary policy is the standard tool of choice for dealing with cyclical fluctuations, and can be implemented more quickly and flexibly than fiscal policy. The effects of fiscal policy, however, may be felt sooner and more predictably than those of monetary policy. Theoretically, uncertainty creates a case for using multiple instruments to achieve a single target, as smaller movements in several instruments create less uncertainty than a large movement in one instrument. On balance, it seems plausible that the primary emphasis should remain on monetary policy, with automatic fiscal stabilizers playing a supportive role, although the case for discretionary fiscal measures increases as uncertainty rises.

[3]The Taylor rule is based on changes in the Consensus growth and inflation forecasts. The standard parameter values of 1½ and ½ are applied to cumulative revisions to the monthly forecasts of inflation and output (respectively) for 2001 and 2002.

will need to be paid to the appropriate mix between adjustment and financing. For the poorest countries, additional concessional financing may be required. In this connection a rapid increase in official development assistance toward the U.N. target takes on additional urgency.

Finally, there remains an important question as to the potential long-term impact of increased security concerns on economic activity. The main channel through which productive potential could be affected is through higher "transactions" costs associated with greater uncertainty—

Table 1.2. The Channels of Contagion or Spillovers in Selected Crises

	Bilateral Trade with Initially Affected Country[1]	Trade with a Common Third Party[2]	Common Lender[3]	Level of Market Liquidity[4]	Global Reduction in Appetite for Risk[5]
Mexico, December 1994					
Argentina	—	Low	Yes, little exposure	Low	Moderate decline in risk
Brazil	—	Low	Yes, little exposure	High	appetite in January 1995.
Thailand, July 1997					
Hong Kong SAR	—	Low	No	High	Modest decline in risk
Indonesia	—	Low	Yes, moderate exposure	Low	appetite in May 1997, but
Malaysia	Low	High	Yes, moderate exposure	Moderate	not sustained.
Philippines	Low	Moderate	No	Low	
South Korea	—	Moderate	Yes, high exposure	Moderate	
Russia, August 1998					
Brazil	—	—	No	High	Marked decline in risk
Hong Kong SAR	—	—	No	High	appetite in August and
Mexico	—	—	No	Moderate/high	September.

Sources: IMF (2001); Kaminsky and Reinhart (2000); Kumar and Persaud (2001); and Glick, and Rose, 1999.
[1]Exposure through bilateral trade is measured by the share of the country's total exports destined to the initial crisis country.
[2]Trade with a common third party in the same commodities is measured as the percent of total exports competing with the top exports of initial crisis country.
[3]For a discussion of how Bank of International Settlements data can be used to identify common bank lender clusters, see Kaminsky and Reinhart (2000). For bonds, see J.P. Morgan's EMBI+ weights.
[4]Market liquidity is roughly proxied by the country's representation (its share) in the global mutual funds' emerging market portfolio. High, moderate, and low classifications are comparisons with respect to other emerging markets.
[5]For a description of the methodology used to estimate risk appetite, see Kumar and Persaud (2001).

such as greater spending on security; higher levels of inventories; lower investor appetite for risk; and a shift away from globalization. While these costs are real, it is impossible to estimate their size with any certainty at this stage. As discussed in Chapter II, while there will be a short-term impact on productivity, such costs would have to be both large and long lived to have a significant impact on medium- and long-term growth trends. Nonetheless, this reinforces the need to press forward with structural and other reforms designed to increase long-run productive potential. The agreement reached at the World Trade Organization meetings in Doha in November to launch a new trade round is therefore of particular importance and could contribute substantially to global economic growth over the medium term.

Appendix: Contagion and Its Causes

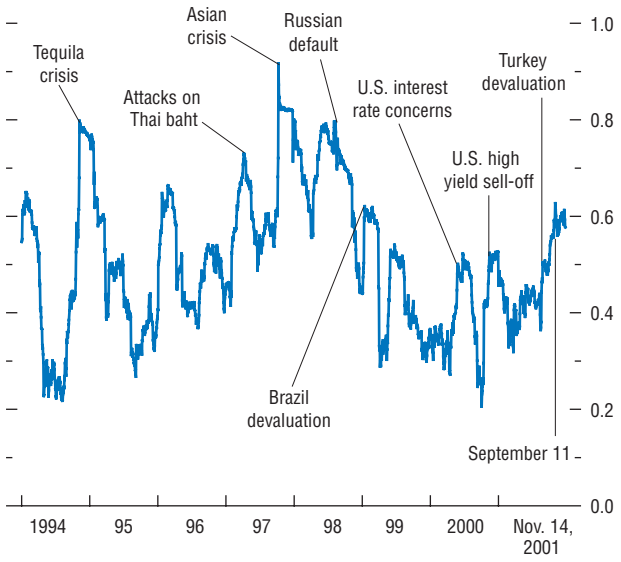
The likelihood of a default on loans in Argentina has sparked considerable interest in the prospects for contagion in emerging markets. Most often, contagion is defined as excess comovements in asset prices or returns that cannot be explained by changes in fundamentals. Asset prices across countries may show a high degree of comovement when markets react to changes in common fundamentals, such as international interest rates or oil prices. Such comovement, however, would typically not be viewed as contagion. Comovement may also arise if significant cross-country trade or financial linkages are present—some of these linkages may be very difficult to quantify. Finally, herding behavior—for rational or irrational reasons—may also give rise to large spikes in cross-country correlation of asset returns.

What are the channels through which contagion takes place? While spillovers through trade have been shown to be statistically significant, trade effects tend to be gradual and protracted (see, for instance, Glick and Rose, 1999). As shown in Table 1.2, in the major contagion episodes, the countries that suffered the most had minimal trade linkages;[5] financial sector links, through common ownership of emerging markets financial assets, such as bonds, loans or

[5]The episodes are the Mexican peso crisis of December 1994; the Asian crisis that began with the devaluation of the Thai baht in 1997; and the Russian–Long Term Capital Management (LTCM) crisis of August 1998.

Figure 1.6. Average Cross-Correlation of Emerging Debt Markets

Recent crises have not spurred the broad based sell-offs witnessed in earlier crises.



Source: IMF, *Emerging Markets Financing.*

equity, were significantly more important. For example, common bank lenders were an important vehicle of contagion in the Asian crisis. Investors' appetites for risk may also diminish in times of market stress and increased uncertainty, as in the Russian Crisis–Long Term Capital Management episode and more recently after the September 11 terrorist attacks (see Kumar and Persaud, 2001).

A common methodology for *measuring financial contagion* is to examine the comovement of country asset returns, as shown in Figure 1.6.[6] The Figure reports the average (unweighted mean) *cross correlation* of daily returns of the key constituent countries of the EMBI+ benchmark index since its inception at the beginning of 1994 (a 50-day window is used). A high average cross correlation indicates investors are either broadly buying or selling across all emerging market credits. Periods of broad-based selling or buying of emerging markets are consistent with the factors listed earlier, including common external shocks and lack of investor discrimination.

There are several notable features of the Figure:

- The average cross correlation has always been positive, with a mean value during 1994–2000 of 0.51, suggesting a substantial tendency for returns on individual countries to move together. The high mean cross correlation over the sample reflects large spikes associated with the major emerging market crises: the Tequila crisis in early 1995 (when the average cross correlation reached 0.8); the attacks on the Thai baht in early May 1997 (0.7); the October 1997 Asian Crisis (0.9); and the Russian default (0.8).
- Individual country returns have tended to move together during bad times, but considerably less so during market rallies. This suggests less investor discrimination during sell-offs. This is consistent with the "crossover" nature of the investor base, which tends to head for its home markets in the face of bad

[6]For a more detailed discussion on the measure, see IMF (2001).

news. The asymmetry may also owe to leveraged position taking, where losses prompt margin calls and broad-based liquidation across the asset class, but gains do not.

- The average cross correlation has fallen off substantially since the crises of 1997–98. At the time of the floating of the Brazilian real in January 1999, for example, the peak occurred around 0.6, a level that has not been revisited until the aftermath of September 11. Several factors have played a role in reducing the extent of contagion during more recent episodes of market turbulence. First, the leverage in the investor base has declined. The need for across-the-board liquidations in response to margin calls have, therefore, been fewer. Second, the upgrade of some countries in the EMBI+—such as Mexico—to investment grade has increased the diversity of the overall investor base, as the proportion of high-grade investors has gone up, which should result in divergent behavior. Furthermore, the fundamentals in some of the key emerging market countries have improved, leaving them in a better position to cope with any economic fallout that may arise owing to contagion.

Since 1998 there has not been a credit event in a major emerging market. It remains an open question as to how much contagion there would be if such an event were to actually take place. The heightened credit concerns have come at a time of much lower exuberance in emerging markets. Net emerging markets fundraising on international capital markets, for example, was $196 billion in 1997—the year of the Asian Crisis; in 2000, at $98 billion, it was still only half its previous peak. The global slowdown has long been anticipated, drawing capital up the credit spectrum and away from higher risk asset classes, including emerging markets. In the case of Argentina, investor concerns have been building for some time, thereby allowing dedicated investors to take underweight positions in Argentina and Brazil and have, since late last year, overweighted Mexico and Russia. This is in sharp contrast to previous crisis episodes, where there was a mass exit out of the asset class. The increased investor discrimination largely owes to the rising importance of dedicated and local investors in emerging debt markets. Since local investors typically hold only their own country's external debt, for regulatory or home-bias reasons, they are unlikely to be a channel for spillovers. The major episodes of contagion in emerging markets shared the element of surprise. Financial markets react strongly to unanticipated events. While the devaluation of the ruble may have been anticipated, the default on debt was not.

In conclusion, the current environment confronting emerging markets and changes in the investor base and positioning help explain the limited broad-based contagion in emerging markets so far and suggest the potential for future contagion is less than it was in the past. But past episodes of contagion were associated with discrete events and, therefore, the potential for contagion, were a credit event to occur in one of the major emerging markets, remains.

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