Annex I

Monetary Policy, Financial Liberalization, and Asset Price Inflation

Previous issues of the *World Economic Outlook* have examined the consequences of asset price inflation and deflation for private sector financial positions and for the business cycle. Asset price inflation has been most pronounced in Japan, the United Kingdom, Australia, New Zealand, and the Nordic countries, but it also occurred on a more limited scale in the United States and some continental European countries.[1] Because the asset price inflations were associated with very rapid expansions of credit and, in some places, excessive money growth, it is important to consider the role that monetary policy may have played in permitting these sharp price increases to occur. There were several factors that made it difficult for policymakers to judge the stance of monetary policy and the impact of policies on asset prices and, more generally, on the economy.

First, financial liberalization distorted the intermediate targets used in the conduct of monetary policy and altered the transmission of monetary policy to the real economy. Many analysts at the time suggested that credit aggregates were more accurate indicators for assessing the stance of monetary policy than were monetary aggregates. Others suggested that, in a deregulated and liberalized financial environment without credit rationing, interest rates would tend to become more volatile and would have to change more sharply to tighten or ease credit conditions. In part as a result of these arguments and events, by the end of the 1980s many central banks had adopted more eclectic approaches toward monetary policy. In retrospect, it is apparent that earlier adjustments to the framework underlying monetary policy might have provided a more timely response to the accumulation of credit.

Second, more than in other recent inflation episodes, conventional measures of inflation in the 1980s did not adequately reflect the strong price pressures that were building and that ultimately led to unsustainable increases in the prices of tangible and financial assets. For example, conventional measures of inflation in Japan were below 2 percent throughout the 1980s, yet money and credit growth were excessive and asset prices soared. In the United States, inflation rose slightly but was relatively stable during this period, while there were large price increases in commercial and residential real estate markets.

Given the emphasis placed on conventional measures of inflation—which focus on prices of the flow of goods and services—important information contained in asset prices was not given sufficient attention during this period. This is not to suggest that monetary policy should explicitly target asset prices or that policymakers should react to sharp movements in stock prices, for example, whenever they occur. It is clear, however, that the indicators of inflation used by policymakers to judge the appropriateness of money and credit policies did not provide a complete and accurate assessment of the inflationary pressures that were building during the mid- to late 1980s. Additional transaction-based measures of prices, with broader coverage than the production- or consumption-based measures, might have alerted policymakers earlier.

Third, there was an initial tendency to view the sharp asset price increases as relative price adjustments associated with changes in tax policies, demographic changes, and other structural changes. This explains much of the acquiescence to the run-up in asset prices and the related rapid growth in credit aggregates. With the benefit of hindsight, only a part of the increase in asset prices appears to have been caused by structural factors, and in most countries—especially in Japan and the United Kingdom—much of the relative price adjustment was reversed as a result of the monetary tightening that occurred in 1989–90 (Chart 25).

An exception in this regard may be the United States, where property price changes—which were small compared with those in other countries—were directly related to tax reforms that provided incentives for real estate investment and to capital inflows that reflected international portfolio adjustments. Part of the subsequent decline in U.S. property prices resulted from the reversal in 1986 of tax incentives provided earlier in the decade and was

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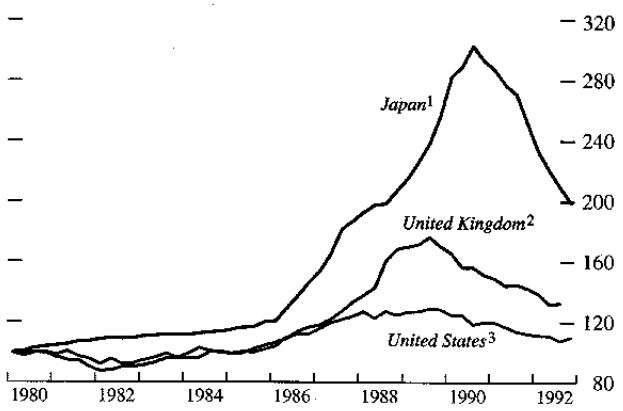
[1]For example, residential property prices rose an average of 22 percent in Japan and 20 percent in the United Kingdom during 1986–89, whereas they rose an average of 10 percent in the United States. See Annex I of the October 1992 *World Economic Outlook*.

Chart 25. Selected Countries: Property Prices
(As a ratio to the consumer price index; 1980:Q1 = 100)



Sources: For the United States, Data Resources, Inc. data base; for the United Kingdom, Central Statistical Office, *Financial Statistics*; and for Japan, Japan Real Estate Institute, *Bulletin of Japan Land Prices*.

[1]Urban residential land price in six largest cities.
[2]Index of prices on dwellings.
[3]Average price of a new house.

therefore unrelated to monetary tightening. Nevertheless, there clearly were excesses in the U.S. commercial property market, which experienced high inflation rates and overbuilding.

This annex briefly examines the adaptation of monetary policy to the changing financial environment in the 1970s and 1980s. An analysis of the relationship between monetary growth and inflation in the mid- to late 1980s attempts to shed light on the reasons for the concentration of inflationary pressures in asset markets during this period. The discussion then examines how financial deregulation and liberalization in the 1980s—and the globalization of financial markets—made it increasingly difficult to assess the stance of monetary policy and changed the ways in which monetary actions affected the economy. The final section draws some lessons from the industrial countries' experiences with inflation for the conduct of monetary policy in the 1990s.

Monetary Policy and Inflation

The widespread commitment to monetary aggregate targeting in the 1980s had its roots in the 1960s and 1970s, when there were relatively strong links between changes in the money supply and changes in prices. The transmission of excessive money growth to inflation was generally understood as follows: expansionary monetary policy increased bank reserves and lowered interest rates; banks provided more loans and issued more deposits, which expanded both sides of their balance sheets; loans to the private sector supported increased spending; and, as monetary growth continued and production constraints were reached, prices and price expectations rose. In the absence of a large shift in the pattern of transactions, conventional price measures such as the consumer price index or the GDP deflator—which measure the average price of goods and services consumed or produced in the period—were adequate gauges of inflationary pressures, including those in asset markets.

Expansion of the money supply affected real economic activity in the short term, because of rigidities in the price- and wage-setting process, but generally led to price increases in the medium term. Changes in monetary aggregates, which reflected changes on the liability side of bank balance sheets, were useful indicators of the stance of monetary policy. Changes in credit aggregates, which reflected changes on the asset side of bank balance sheets, were also useful indicators, although monetary policy was viewed as having a more direct influence on bank deposits.

In the United States, target ranges for M1 growth were announced throughout the 1970s. The U.K. authorities set targets for broad money starting in

1976, and the Bundesbank established targets for central bank money in 1974; other central banks shifted similarly. The Bank of Japan did not specifically target a monetary aggregate, but in 1978 it began to include "projections" for the broad aggregate M2 + CDs (certificates of deposit) in its policy announcements.

By the early 1980s, control of inflation became the primary concern of economic policy in the major industrial countries. Determined reductions in money growth, sharp increases in interest rates, and a deep recession in 1981–82 brought inflation down (Table 23). By 1985, the strong and persistent rise of the dollar in currency markets and other external factors became important considerations for the industrial countries and prompted greater policy coordination following the Plaza Accord. Thereafter, monetary policy eased decisively in many industrial countries.

Concern about the effects of the stock market crash in October 1987 led to a further easing of monetary policy, but the event itself may have been an early warning of growing financial imbalances and latent inflationary pressures, especially in asset markets. If nothing else, the correction of stock market prices suggested that the revaluation of corporations that had taken place in the preceding period was not consistent with fundamental changes in values. Asset market developments prompted the Bank of Japan in 1987 to urge caution in bank lending practices. Inflationary pressures also led to tightening in the United Kingdom in mid-1988, and short-term interest rates were raised significantly. By 1988, concern about overheating in the United States led to progressive increases in the federal funds rate. Policy was tightened in 1989 in Japan, and by the end of 1990 interest rates had been raised considerably, and the growth of broad money slowed.

During the 1980s, deregulation made monetary targeting and the assessment of monetary conditions increasingly difficult in many countries. As a result, many countries used a broader range of economic indicators to monitor monetary and financial conditions.[2] Emphasis shifted in the United States to broader aggregates and to the federal funds rate, and in the United Kingdom it shifted to a narrower aggregate, the exchange rate, and other financial indicators.

Measures of Potential Inflation

The practical problems of monetary targeting in an environment of financial deregulation were evident throughout the 1980s. Less apparent were the changes in the relationships between money and credit growth and a broader measure of inflation that included asset transactions. At the time, it may not have been possible to assess properly the extent to which money and credit policies were adding to inflationary pressures in asset markets. In retrospect, however, monetary and financial data suggest that by 1985–86 both money and credit growth were excessive in Japan and, especially, in the United Kingdom, and credit growth was unusually high in the United States. Overly expansionary money and credit policies also were evident in many other countries that experienced asset price inflation, including Australia, New Zealand, the Nordic countries, and Switzerland.

In a monetary accounting framework, expansion of the money supply in excess of real GDP growth—which can be referred to as "excess money growth"—is potentially inflationary. Ex post, the gap between this excess money growth and actual inflation (in the GDP deflator) is usually interpreted as a change in velocity—that is, a change in the rate of circulation of money relative to nominal GDP. Changes in velocity are often attributed to improvements in transaction technology or to other institutional factors. Policymakers regularly adjust for velocity changes when the changes deviate significantly from trend movements or when they are known to be associated with special factors.

An alternative interpretation of the gap between excess money growth and actual inflation—one that is particularly relevant for the 1980s—is that it is a residual that represents potential inflationary pressures in markets, pressures that are not captured by national income account measures of output and prices. If there is a shift in the pattern of economic transactions, for example, changes in this residual may not be due to shifts in the demand for money, but instead may carry important information about inflationary pressures affecting other types of economic transactions. As discussed below, this gap is useful for examining the role that monetary policy may have played in the asset price inflation in many countries. By implication, broader transaction-based price indices, although conceptually difficult to define precisely, would have been more complete and useful indicators and could have provided information to policymakers about the inflationary pressures that were building at that time.

For Japan and the United Kingdom, measures of both excess money and credit growth suggested that inflationary pressures were building in the mid- to late 1980s. In Japan, growth in the monetary aggregates in the mid- to late 1980s was high—relative to inflation—and variable, yet nominal GDP growth was relatively low, and inflation measured by the GDP deflator was fairly steady at its lowest level in decades (Chart 26). This divergence reflected a breakdown in the 1980s of the money-price

[2]See the discussion in Chapter III of the main text and the annex, "Assessing the Stance of Monetary Policy," in the January 1993 *World Economic Outlook: Interim Assessment*.

Table 23. Five Major Industrial Countries: Monetary Policy Record Since 1980[1]

(Percent change, fourth quarter to fourth quarter, unless otherwise stated)

	United States			Japan			Germany[2]			France			United Kingdom		
	Money growth			Money growth			Money growth			Money growth			Money growth		
	Target[3]	Actual	Inflation	Projection[4]	Actual	Inflation	Target[5]	Actual	Inflation	Target[6]	Actual	Inflation	Target[7]	Actual	Inflation
1980	4–6.5	7.2	9.4	8	7.6	4.6	5–8	4.8	4.9	11	9.8	11.4	7–11	20.0	19.2
1981	6–8.5	5.1	10.0	10	10.4	3.7	4–7	3.6	4.1	10	11.4	11.3	6–10	14.6	11.3
1982	2.5–5.5	8.5	6.2	8	8.3	1.7	4–7	6.1	4.4	12.5–13.5	11.5	11.8	8–12	9.8	7.7
1983	7–10	8.5	4.0	7	6.8	1.4	4–7	7.0	3.5	9	10.2	9.7	7–11	10.0	5.4
1984	6–9	8.0	4.5	8	7.9	2.3	4–6	4.6	2.1	5.5–6.5	7.6	7.5	6–10	12.3	4.6
1985	6–9	8.8	3.7	8	9.0	1.6	3–5	4.5	2.2	4–6	7.0	5.8	5–9	13.6[8]	5.7
1986	6–9	9.4	2.7	8–9	8.3	1.8	3.5–5.5	7.7	3.3	3–5	4.6	5.2	11–15	20.7	3.5
1987	5.5–8.5	4.2	3.1	11–12	11.8	—	3–6	8.1	1.9	3–5	9.1	3.0	2–6	5.8	5.0
1988	4–8	5.2	3.9	10–11	10.6	0.4	3–6	6.8	1.5	4–6	3.9	2.8	1–5	6.1	6.6
1989	3–7	4.5	4.6	9–10	10.0	1.9	5	4.8	2.6	4–6	4.3	3.2	1–5	6.3	7.1
1990	3–7	3.9	4.3	11–12	10.0	2.2	4–6	5.5	3.4	3.5–5.5	–0.3	3.1	1–5	2.7	6.2
1991	2.5–6.5	2.8	4.0	2–3	2.2	2.1	4–6	5.2	4.2	5–7	4.1	2.6	0–4	2.2	6.8
1992	2.5–6.5	1.9	2.6	2[9]	−0.5	1.7	3.5–5.5	9.6	4.5	4–6	. . .	2.8	0–4	2.3	4.7

Sources: Bank for International Settlements, *Annual Report* (Basle, various years); Board of Governors of the Federal Reserve System; and World Economic Outlook data base.

[1]Inflation is measured as the annual percent change in the GDP deflator; "actual" refers to money growth over the target period.

[2]West Germany through December 1990, unified Germany thereafter.

[3]Targets are for M1 through 1982 and for M2 thereafter. For 1983, targets shown are for growth from a February–March 1983 base through the fourth quarter.

[4]The Bank of Japan publishes projections of the growth of M2 + CDs each quarter over the corresponding quarter of the previous year. Projections above are for the fourth quarter over preceding fourth quarter.

[5]Target refers to central bank money through 1987, and to M3 in 1988–92.

[6]For 1980 to 1982, December-to-December growth rate of M2; for 1983 to 1985, growth from average November–December–January to same period of following year of M2 (in 1983) and M2 holdings of residents (1984–85); thereafter, fourth quarter to fourth quarter. Targeted aggregate is M3 for 1986–87; M2 for 1988–90; M3 for 1991–92.

[7]Through 1984, target periods are from February to April of the following year; then for twelve-month periods from May 1985, and from April each year thereafter. The targeted aggregate is M3 through 1986, M0 thereafter.

[8]Actual growth, December to December.

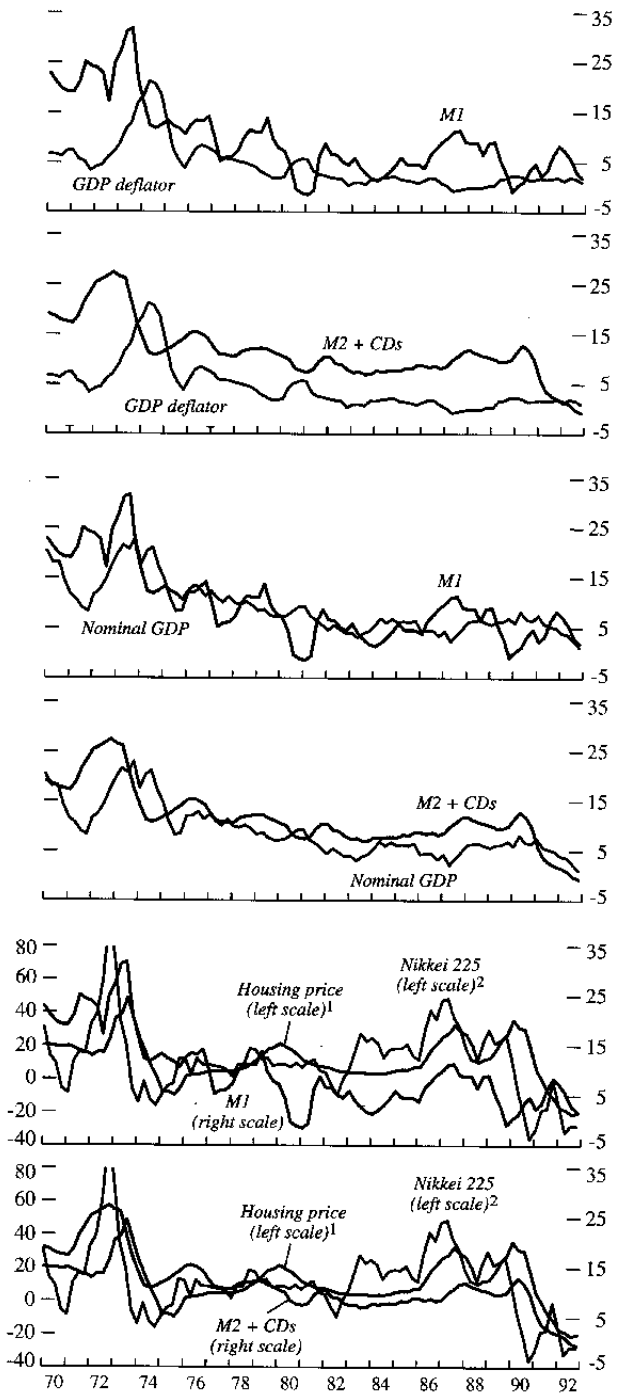
[9]Second quarter to second quarter.

relationships that had prevailed in the 1970s and was associated with changes in the transmission of money and credit growth to goods prices and asset prices. Excess money and credit growth—that is, money and credit growth in excess of growth in real economic activity—increased and remained high during this period (Chart 27). Moreover, the annual gaps between excess money growth and measured inflation (GDP deflator), and between excess credit growth and inflation, averaged 3¼ percentage points and 3¾ percentage points, respectively. By construction, these gaps represent either a sharp change in behavior—in the form of a significant change in the demand for money and credit balances—or a substantial shift in the pattern of transactions toward assets and other markets not captured in national income measures of final goods transactions. Viewed in this way, the money and credit gaps represented inflationary pressures in the economy that were fully consistent with the inflation that occurred in asset markets.

In the United Kingdom, narrow money growth and inflation had been closely linked in the 1970s, and the relationship strengthened in the 1980s (Chart 28). Growth in the broad aggregate remained high and increased in the second half of the decade, but changes in the GDP deflator remained relatively low and even declined, although housing prices increased sharply. Both excess money and excess credit growth emerged in the United Kingdom in the mid-1980s and persisted through the end of the decade (Chart 29). The differences between these measures at potential inflation and actual inflation averaged 5¾ percentage points and 7¾ percentage points, respectively, suggesting the accumulation of strong inflationary pressures.

The case is not as clear in the United States. There had been a fairly close relationship between the growth of narrow money and inflation (as measured by the GDP deflator), and between money growth and nominal GDP growth (Chart 30). After the 1981–82 recession, however, higher growth in both the narrow and broad monetary aggregates was associated with lower or stable inflation and lower growth in nominal GDP.[3] This apparent change in the relationship between money growth and infla-

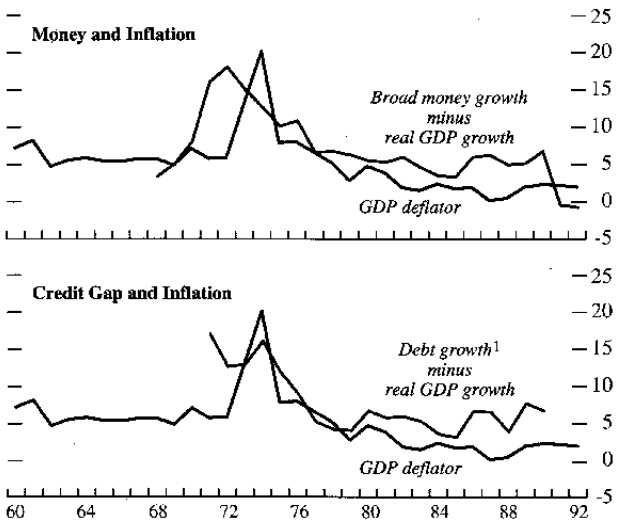
Chart 26. Japan: Money, Incomes, and Prices
(Percent change from four quarters earlier)



[1]Urban residential land price in six largest cities.
[2]In the fourth quarter of 1972, the increase was 95.2 percent.

[3]These visual images are supported by econometric evidence. Inflation (GDP deflator) was regressed on its previous value and past values of narrow money growth (using a polynomial distributed lag) over two time periods in the United States, Japan, and the United Kingdom—1970:Q1 to 1982:Q4 and 1983:Q1 to 1992:Q2. According to this specification, the relationships between money growth and inflation were relatively strong and statistically significant in the 1970s, and, except for the United Kingdom, the relationship was weak and not statistically significant in the 1980s. Supporting evidence for Japan is reported in Guy Meredith, "Japan—Implications of the Recent Slowdown in Broad Money Growth" (unpublished; IMF, 1992); and in Robert Corker, "Wealth, Financial Liberalization, and the Demand for Money in Japan," *Staff Papers* (IMF), Vol. 37 (June 1990), pp. 418–32.

Chart 27. Japan: Money, Debt, and Inflation
(In percent)



[1]Total financial liabilities of the private nonfinancial sectors less trade credits.

tion was in part the result of much higher real economic growth in the United States in 1983–88. Moreover, during this expansionary period, excess money growth in the United States was generally consistent with measured inflation; the gap between excess money growth and inflation was a negligible annual average of ¼ of 1 percentage point (Chart 31, top panel).

The growth of the monetary aggregates in the United States, which were the primary intermediate indicators for monetary policy, did not suggest that general inflationary pressures might be building elsewhere in the economy. In addition, there were reasons to expect higher relative prices in real estate markets. The expansion of credit, however, far exceeded the expansion in the real economy (see Chart 31, bottom panel). Even though money growth was in line with measured inflation, credit growth would have been consistent with much higher inflation (in the GDP deflator), providing some indication that inflationary pressures might be building in the economy. During the 1980s, the annual gap between excess credit growth and actual inflation (in the GDP deflator) averaged 2½ percentage points in the United States. The cumulative effect of this excess credit growth turned out to be considerable, especially in commercial real estate markets.

In retrospect, it would appear that within a broader monetary policy framework—one in which measures of transaction prices were used as complementary indicators along with standard inflation indicators for goods and factor markets—the persistence of growth in money and credit in excess of nominal GDP growth (in Japan and the United Kingdom, especially) would have suggested that inflationary pressures were building. The need for an adjustment, however, was not recognized until the process of debt accumulation and asset price inflation had reached a critical stage.[4]

Concentration of Inflation in Asset Markets

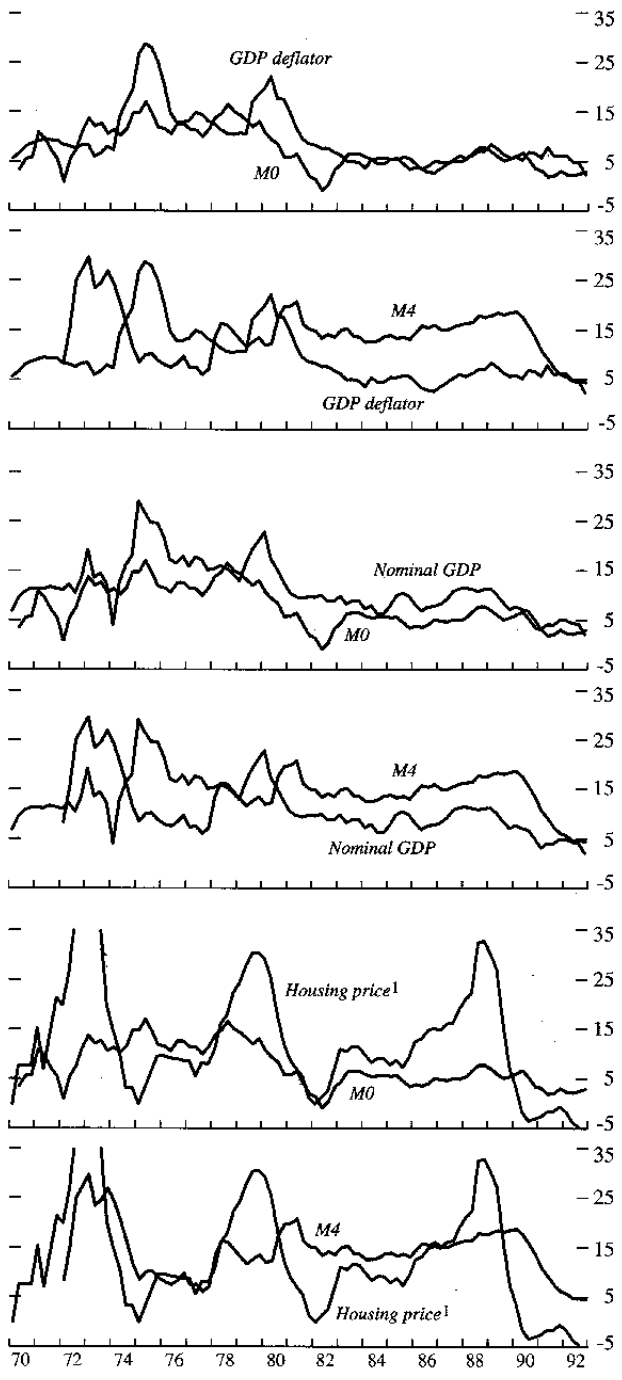
Why did the excess liquidity and credit that was provided in the mid-1980s create excess demand for

[4]Traditional theories of inflation have focused on how excess liquidity leads to an increase in the average price of the *flow* of goods and services in the relevant time period. Wage developments have also played a central role in macroeconomic stabilization strategies and policies. Economic theories have been helpful in monitoring and explaining inflation, ex post, but judging from the inflation record of the postwar era, they have not been effective in anticipating inflationary episodes. Some economists in the early part of this century thought that prices on all types of transactions—both stocks and flows—were important for properly measuring inflationary pressures. See Irving Fisher, *The Purchasing Power of Money* (New York: Macmillan, 1913; A.M. Kelley, 1985). See also Box 2, on price stability, in Chapter III.

assets rather than excess demand for the flow of goods and services? As just described, the transmission from monetary policies to inflationary pressures in the late 1980s was unusual in the sense that inflation, as conventionally measured, did not increase as sharply as it had in other recent episodes of expansionary macroeconomic policies. A possible resolution of this puzzle is that financial liberalization and innovation and other structural changes in the 1980s created an environment in which excess liquidity and credit were channeled to specific groups active in asset markets. These included large institutions, high-income earners, and wealthy individuals, who responded to the economic incentives associated with the structural changes. These groups borrowed to accumulate assets in global markets—such as real estate, corporate equities, art, and commodities such as gold and silver—where the excess credit apparently was recycled several times over.

In the United States, ongoing financial innovations—related to earlier financial deregulation and liberalization—and tax reform provided opportunities and incentives for investment, and these opportunities were particularly significant for the corporate sector and high income earners.[5] The expansion in credit financed, for example, mergers and acquisitions, leveraged buyouts, commercial real estate, and residential real estate. In Japan, tax provisions created incentives for the construction of apartment houses and condominiums, and changes in the capital gains tax treatment of real estate transactions encouraged upgrade purchasing. Spending in the late 1980s shifted significantly toward luxury goods and those components of demand that are typically financed on credit, such as business investment, home construction, and durable goods.[6] By contrast, in the United Kingdom, the increase in borrowing was more broadly based, suggesting that the debt accumulation reflected a backlog of unsatisfied demand for credit that was unleashed after financial liberalization. Although the increase in inflation in the United Kingdom was also more

Chart 28. United Kingdom: Money, Incomes, and Prices
(Percent change from four quarters earlier)

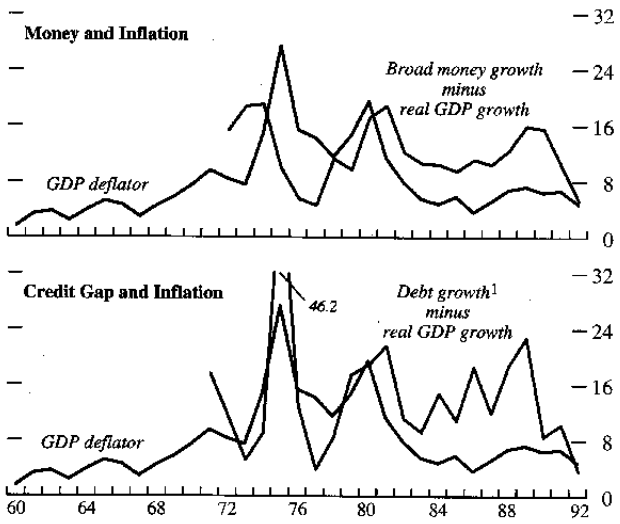


[1]Index of prices on dwellings. In the first quarter of 1973, the increase was 50.0 percent.

[5]In the United States, much of the increase in debt between 1983 and 1989 was concentrated in families reporting the most financial assets. The mean real home value rose much more than the median, and the increase occurred largely in families with incomes above $50,000. The highest income groups increased the median size of their mortgage debt, while the lowest reduced their median value. See Arthur Kennickell and Janice Shack-Marquez, "Changes in Family Finances from 1983 to 1989: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, Vol. 78 (January 1992), pp. 1–18.

[6]See Masahiko Takeda and Philip Turner, "The Liberalisation of Japan's Financial Markets: Some Major Themes," Economic Papers, No. 34 (Basle: Bank for International Settlements, November 1992).

Chart 29. United Kingdom: Money, Debt, and Inflation
(In percent)



[1]Total financial liabilities of the personal and the industrial and commercial sectors less outstanding domestic trade credits and ordinary and preference shares.

broadly based, in that conventional measures of inflation increased, real asset prices rose substantially.

Intense competition among financial intermediaries resulted in high-risk lending in new areas of business, which contributed to increased asset market activity. This increase in the supply of credit to relatively risky asset markets can be directly related to financial liberalization and the subsequent waves of financial innovations, which together led to an erosion in the franchise value of banks, an expanded role for other financial institutions, greater competition and risk taking, and a general squeeze on profit margins.[7] Whereas in the 1970s there was increased lending to developing countries, in the 1980s there was increased lending for highly leveraged transactions and real estate purchases. In the United Kingdom, banks aggressively entered the mortgage market. In Japan, the decline in banks' corporate business, which shifted to securities markets, led city banks to lend for real estate transactions and to small and medium-size businesses. With key safety nets still in place—most notably deposit insurance systems—the removal of earlier restrictions on lending practices (as in the U.S. savings and loan industry, for example) also led to increased risk taking. The increased risk taking suggests that supervisory and oversight systems were not expanded sufficiently to keep pace with deregulation. This institutional inertia may have contributed to an environment that encouraged excessively speculative behavior in asset markets.

There were other, nonfinancial, factors in the late 1980s that tended to restrain demand and inflation pressures in markets for goods and services, thereby making it more likely that excess credit and liquidity would be concentrated in asset markets. Structural reforms, along with a general increase in global competition, created pressures on profit margins and discouraged price increases. Wage increases were restrained by high and rising unemployment—particularly in Europe—by reduced expectations of inflation, and by government wage policies.

Finally, prices for goods and services may have adjusted more slowly to monetary growth in the mid- to late 1980s. Because asset prices depend on expectations of future economic developments—unlike most goods prices, which are mainly determined as a markup over costs—and are determined in deep active auction markets, they often respond

[7]See Steven R. Weisbrod, Howard Lee, and Liliana Rojas-Suarez, "Bank Risk and the Declining Franchise Value of the Banking Systems in the United States and Japan," IMF Working Paper 92/45 (June 1992). This "franchise value" arises from banks' access to funds from the central bank, which gives banks a distinct role as providers of liquidity and payments services.

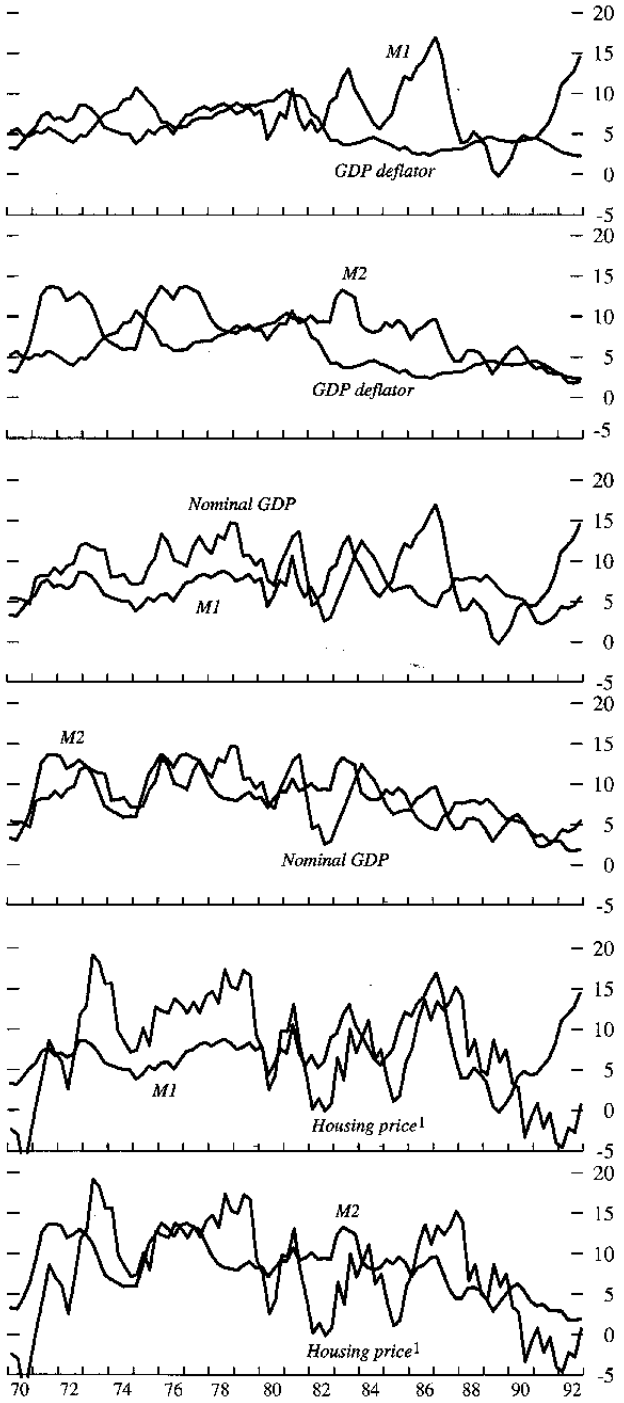
first to monetary stimulus. This was true even before deregulation, but financial liberalization appears to have strengthened the link between money growth and asset prices. Given the expansion in financing possibilities, spending on items that require credit rose more rapidly than spending on other goods, and this shifted the pattern of transactions away from goods and services and toward assets.

Once the process of asset price inflation got started, in the absence of a restrictive monetary policy, expectations of further capital gains apparently became an important aspect of increased demand for assets.[8] To the extent that past price increases determined expectations of future price increases, the real cost of borrowing for investment in asset markets was often negative in the United States, Japan, and the United Kingdom. In 1986–89, for example, building society loan rates in the United Kingdom stayed below 15 percent and were often below 12 percent, while housing prices rose annually by 20 percent on average. In Japan, the average new loan rate was below 6 percent and declined for most of the 1985–89 period, while stock prices increased at an annual rate of 27 percent.

Financial Liberalization and Monetary Policy

Even if broader measures of inflation had been closely monitored in the conduct of monetary policy during the 1980s,[9] inflation is a lagging indicator, and other indicators would have been necessary to assess monetary and financial conditions. The structural factors described earlier—and the evolving responses to financial deregulation, liberalization, and globalization—altered important relationships between monetary instruments and intermediate targets and the impact of monetary policy on the real economy. The difficulties of quantifying the impact of these structural changes in the daily conduct of monetary policy were compounded by uncertainties created by the fundamental changes in the behavior of financial intermediaries, businesses, and households in response to changes in economic incentives.

Chart 30. United States: Money, Incomes, and Prices
(Percent change from four quarters earlier)

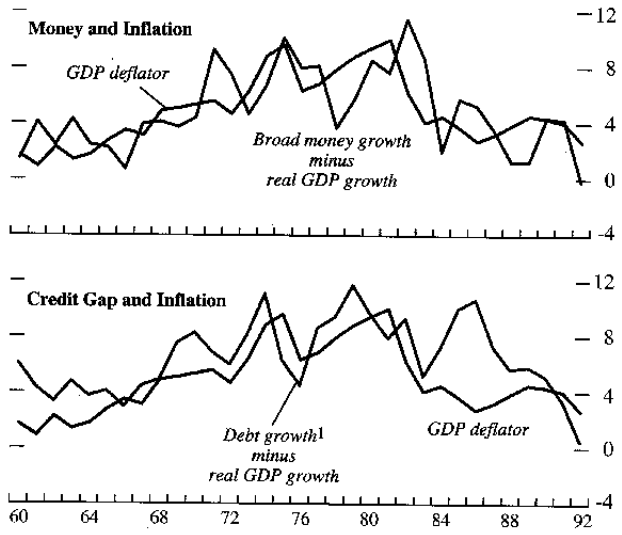


[1]Average price of a new house. In the third quarter of 1970, the decrease was 7.5 percent.

[8]For a detailed analysis of the tendency for persistence in price changes in a broad array of asset markets in a number of countries, see David M. Cutler, James M. Poterba, and Lawrence H. Summers, "Speculative Dynamics," NBER Working Paper 3242 (Cambridge, Massachusetts: National Bureau of Economic Research, January 1990).

[9]During the 1980s, there were several studies of likely consequences of financial deregulation and liberalization for the implementation of monetary policy; see Bank for International Settlements, *Financial Innovation and Monetary Policy* (Basle, March 1984), and *Changes in Money-Market Instruments and Procedures: Objectives and Implications* (Basle, March 1986).

Chart 31. United States: Money, Debt, and Inflation
(In percent)



[1]Total credit market debt outstanding of the private nonfinancial sectors.

Monetary Policy Transmission Before Deregulation

Before deregulation, the conduct of monetary policy in the major industrial countries relied heavily on official interest rates. In the United States, for example, the federal funds rate was a primary policy instrument, but deposit rate ceilings also played a major role in changing the amount of liquidity and credit provided to the private sector. The U.K. authorities conducted open market operations to influence the cash positions of banks and interest rates, but they also relied heavily on changes in the minimum lending rate. Administrative policies, and control of official rates, also played a central role in Japanese monetary policy before the early 1980s.

In addition to interest rate policies, quantity constraints played a significant role in all three financial systems, although Japanese monetary policy was the most explicitly quantity-oriented.[10] In the United States, the tightening effect of an interest rate increase was reinforced in periods when market rates rose above the deposit rate ceilings. Deposit holders shifted their funds out of banks and into accounts earning market rates. This process of disintermediation, prevalent in the 1960s and 1970s, reinforced the contractionary effects of reserve withdrawal on bank balance sheets and forced a further reduction in bank lending. Some borrowers had access to funds from nonbanks, so the initial impact of monetary contraction fell primarily on those sectors without such access, such as mortgage borrowers. The disproportionate burden on the housing loan market was mitigated somewhat by the advent of mortgage securitization and government mortgage assistance agencies in the early 1980s.

In the United Kingdom, where lending restrictions largely kept banks out of the residential mortgage market before 1980, quantity rationing also played a role in the transmission of monetary policy. The market was dominated by building societies, who adopted a collective practice of smoothing the interest rate charged on their variable rate mortgages.[11] Periods of excess demand were

[10]Before the official recognition of the Gensaki market—a market for repurchase agreements for long-term securities, including government bonds—and the deepening of a secondary market for government securities in Japan in the late 1970s and early 1980s, the Bank of Japan relied primarily on credit rationing at the discount window, administrative guidelines on bank loan allocation, and "window guidance," which specified lending limits for individual banks and ensured that the Bank of Japan had extensive influence over all major financial institutions and over corporate spending.

[11]See John S. Flemming, "Financial Innovation: A View from the Bank of England," in *Monetary Policy and Financial Innovations in Five Industrial Countries: the UK, the USA,*

handled by rationing, either in terms of delayed granting of loans or reductions in loan size. This system was a feature of the exclusive role that building societies enjoyed, and it eroded rapidly once banks entered the market.

The real effects of monetary policy were therefore transmitted through two channels: through changes in official interest rates and through changes in the availability of credit. The magnitude of the effects of policy changes depended critically on the sensitivity of foreign and domestic spending decisions to changes in interest rates and any associated changes in the exchange rate. Interest rate changes affect demand through a substitution effect, by changing the relative cost of current and future consumption; through a wealth effect, by changing the current values of long-lived financial and real assets; and through an income or "cash flow" effect as the size of interest payments and receipts move with current rates. The impact of changes in the availability of credit through disintermediation or rationing depended heavily on the existence of alternative sources of funds, including overseas markets, and on the access that different domestic borrowers had to these alternative sources.

Deregulation and the Monetary Policy Transmission Process

Deregulation changed key aspects of the monetary policy transmission process by changing bank activity and behavior, by encouraging the growth of competing nonbank intermediaries and direct securities markets, by altering the financial opportunities available to businesses and households, and by changing international capital flows.[12] One of the most significant effects of liberalization has been the increase in financial activity outside of banks. The growth in commercial paper and money market mutual funds, and declining proportions of household and business assets and liabilities held with banks, attest to the diminished role of traditional financial intermediaries. Because banks are the intermediaries most closely connected (through reserve accounts and regulations) to central banks, this shift in the locus of financing and saving activity changed the linkages between monetary policy and economic activity.

The banking sector's response to liberalization has been, in part, to compete more aggressively for deposits by offering new types of accounts and more accounts with market-determined rates of return. The resulting flexibility of deposit interest rates in the United States has significantly reduced the phenomenon of cyclical disintermediation.[13] This, in turn, has reduced the impact of monetary tightening on the residential housing market. The shift by corporations in Japan from bank-intermediated finance to direct securities markets has led city banks to shift their attention to small and medium-size borrowers, who previously had access only to funds at regional banks. In both of these economies, an additional consequence of heightened competition and the declining franchise value of the banking system has been an increase in off-balance-sheet activities of banks and increased allocation of bank loans to those sectors promising high returns. Bank real estate lending, in particular, increased substantially in the late 1980s, thereby channeling excess liquidity to property markets.[14]

Household financial activity also changed considerably in response to deregulation. Innovation in deposit and loan instruments led households to expand both financial assets and liabilities. As a consequence, net wealth increased in the United States, the United Kingdom, and Japan until the asset market downturns eroded the value of some of the holdings. Studies have found a significant reduction in liquidity constraints in the United States, Japan, France, the United Kingdom, and Canada.[15] Consumption decisions have thus become more responsive to interest rate changes. That is, the substitution effect of interest rate changes strengthened.

Reinforcing this has been a change in the income or "cash flow" effect of interest rate movements. As the proportion of variable rate loans has increased, adjustments in interest payments, and hence spending patterns, have taken place more rapidly. Although households remain net creditors for all debt instruments, in the United Kingdom they have become net debtors in terms of floating-rate instruments. Thus, an increase in interest rates requires that a larger portion of current household income be used to meet the obligations of increased interest payments on floating liabilities. This increased effect of interest rates may be partially offset because with variable rate contracts, the initial level of the interest rate plays a somewhat smaller role in the loan screening process.[16]

West Germany, France and Japan, edited by Stephen F. Frowen and Dietmar Kath (New York: St. Martin's Press, 1992).

[12]See Annex I in the May and October 1992 issues of the *World Economic Outlook* for more detailed discussion of the responses of the financial and nonfinancial sectors to deregulation.

[13]See Adrian W. Throop, "Financial Deregulation, Interest Rates, and the Housing Cycle," *Federal Reserve Bank of San Francisco, Economic Review* (Summer 1986).

[14]For a discussion of increased real estate lending, see Annex I in the October 1992 *World Economic Outlook*.

[15]See Tamim Bayoumi and Pinelopi Koujianou, "The Effects of Financial Deregulation on Consumption," IMF Working Paper 89/88 (October 1989); and Tamim Bayoumi, "Financial Deregulation and Household Saving," Bank of England Working Paper Series, No. 5 (London, October 1992).

[16]In the United States, there is some evidence of reduced

The increased internationalization of financial markets has reduced the control that domestic policy authorities have over the quantity of credit; control of interest rates remains the key policy instrument. An example is the role that foreign bank lending played in offsetting credit shortages to U.S. corporations in the late 1980s.[17] Japanese corporations also have increased their use of foreign financial markets: foreign bond issues as a portion of total corporate bond issues rose from 40 percent in 1980 to 60 percent in 1991. Such increased access to external funds reduces the contractionary effect on domestic spending of central bank tightening, at least among certain sectors of the economy. Moreover, the sensitivity of international capital flows to international interest rate differentials makes it more difficult for monetary authorities to balance domestic and external policy objectives when these conflict.

These changes in behavior and opportunities alter, individually, some component of the monetary policy transmission process. The net effects are manifested in changes in historical macroeconomic relationships. Ongoing problems in defining the monetary aggregates, and apparent shifts in money demand functions, have been features of monetary policy discussions since the onset of deregulation. There was also a change in the relationship between the yield curve and the relative growth of broad and narrow monetary aggregates in the 1980s. Policymakers have responded to these problems in part by reducing their exclusive focus on one monetary aggregate and by broadening the set of indicators used to assess the stance of monetary policy. The U.K. authorities suspended targeting of M3 in 1987 and adopted a more broadly based approach that includes attention to M0, the exchange rate, and other financial indicators.[18] The Bundesbank shifted in 1987 from targeting central bank money to targeting M3. The Federal Reserve Board reduced its emphasis on M1 targeting in 1982 and ceased setting targets for M1 altogether in 1987. The Federal Reserve Board continues to set targets for the broader aggregates, but in recent years it has downplayed strict reliance on monetary aggregates and instead considers a range of indicators. The Bank of Japan has not changed its targeted aggregate, but it was prompted in the mid-1980s to revise substantially its projections for M2 + CDs as deregulation changed the behavior of the aggregate.

The changes go beyond measurement problems, however, and include changes in the relationship between monetary aggregates, inflation, and nominal GDP. Evidence from vector autoregressions of the relations between monetary aggregates and nominal income indicate important changes associated with deregulation.[19] In the United States, M1 and M2 broke down as predictors of income by 1978. In Japan, M1 and M2 + CDs retained a significant relation to income in the 1970s and 1980s, but the underlying directions of causality appear to have shifted. In the United Kingdom, sterling M3 ceased to be a good predictor of income after 1983.

Deregulation has made it more difficult to assess the stance of monetary policy and to forecast future activity. The yield curve has been used increasingly as an indicator of future nominal GNP growth and inflation since the 1980s. In the United States, studies have shown that the best predictor is the spread between the commercial paper rate and the treasury bill rate. Analysis of this relationship in other countries found similar predictive power in Canada and the United Kingdom, but not in Japan, France, or Germany.[20] One explanation for the predictive power of the spread between the commercial paper rate and the treasury bill rate is that monetary tightening curtails bank lending and leads to an increase in commercial paper issuance for those firms that can substitute between bank loans and direct issuance markets. This increase in borrowing in the commercial paper market drives up that interest rate relative to other comparable maturity market rates and signals the upcoming contraction in economic activity induced by monetary policy.[21] As deregulation deepens commercial paper markets and increases substitution between bank loans and market instruments, however, this effect can be expected to weaken. Preliminary evidence of this weakening has already emerged in the United States and may emerge in other economies for similar reasons.

sensitivity of housing starts to interest rate changes, due in part to the increased use of variable rate instruments, which has affected affordability and credit scoring constraints. See Randall J. Pozdena, "Do Interest Rates Still Affect Housing?" *Federal Reserve Bank of San Francisco, Economic Review*, No. 3 (Summer 1990), pp. 3–13.

[17]Robert N. McCauley and Rama Seth, "Foreign Bank Credit to U.S. Corporations: The Implications of Offshore Loans," *Federal Reserve Bank of New York, Quarterly Review*, Vol. 17 (Spring 1992), pp. 52–65.

[18]See "Financial Change and Broad Money," Bank of England, *Quarterly Bulletin* (December 1986), pp. 499–507.

[19]See Adrian Blundell-Wignall, Frank Browne, and Paolo Manasse, "Monetary Policy in the Wake of Financial Liberalisation," Economics and Statistics Department Working Paper 77 (Paris: OECD, April 1990).

[20]See Frank Browne and Warren Tease, "The Information Content of Interest Rate Spreads Across Financial Systems," Economics and Statistics Department Working Paper 109 (Paris: OECD, 1992).

[21]See Anil K. Kashyap, Jeremy C. Stein, and David W. Wilcox, "Monetary Policy and Credit Conditions: Evidence from the Composition of External Finance," *American Economic Review*, Vol. 83 (March 1993), pp. 78–97. For an explanation based on liquidity differences in these instruments, see Peter M. Garber and Steven R. Weisbrod, *The Economics of Banking, Liquidity, and Money* (Lexington, Massachusetts: D.C. Heath, 1992), Chapter 13.

Implications for Monetary Policy

As the preceding section indicates, a wide range of forces has affected the monetary transmission mechanism, and some evidence of these changes is already apparent. This section addresses three policy issues: changes in the nature of the monetary control mechanism, prospective shifts in the sectoral impact of monetary policy actions, and adjustments in the set of information variables that are monitored.

One of the most immediate effects of financial liberalization has been a reduction in the monetary authorities' direct control over the quantity of credit. Without regulated deposit rates, the authorities have much less ability to influence interest rate spreads and, thus, to induce shifts in business and household financing and saving decisions. The extensive development of alternative sources of funds—both domestic and foreign—has reduced the central bank's influence over intermediation. What remains is the central bank's control over certain interest rates. The channel of monetary policy has thus narrowed—from one in which credit supply repercussions reinforced the effects of interest rate changes, to one in which these rationing elements are greatly reduced if not altogether absent.

Several relationships, therefore, have taken on increased importance. The first concerns the ability of central banks to affect market rates, including those on longer-maturity instruments. As markets deepen and innovation proceeds, arbitrage is likely to strengthen the ties among different market rates. At the same time, deregulation has eliminated sources of inflexibility in many rates, so that long-term rates can be expected to respond more freely to expectations of inflation. The central bank's ability to influence a broad array of market interest rates will therefore depend on the state of the economy and on expectations about future policies. In addition, international integration of capital markets has increased the importance of the exchange rate as part of the policy transmission mechanism.

Some aspects of deregulation have tended to diminish the sensitivity of components of demand to interest rates; others have tended to amplify it. Because more loan contracts are arranged on a variable rate basis, borrowers have less need to worry about being locked into high rates prevailing at a particular time, so borrowing may not be reduced as much by an interest rate increase as it would have been when primarily fixed-rate contracts were available. Interest rates play a somewhat smaller role in the loan screening process now, and there are more opportunities for firms to hedge against interest rate changes. But the prevalence of floating-rate contracts also means that interest rate changes are transmitted much more rapidly to loan payments, so that the impact on disposable income and spending is likely to be larger. In addition, the decreased use of nonprice rationing in the loan market means that borrowers will be responding more exclusively and flexibly to interest rate changes. With respect to consumption, a number of studies have found evidence of diminished liquidity constraints in those countries that have experienced extensive deregulation. The response of exchange rates to interest rate differentials, and the elasticities of foreign demand for domestic goods, play a more important role in an environment of increasingly integrated capital and goods markets. The net effect on aggregate demand remains to be determined in empirical studies. Estimates in the United Kingdom, where the proportion of variable rate loans is much higher than elsewhere, have indicated that the interest rate effect on spending is clearly stronger than in the period preceding deregulation.[22]

One consequence of the increased securitization and integration of financial markets—particularly of the mortgage market, but also of markets for corporate financing—is that the impact of monetary policy is likely to be spread more broadly throughout the economy and less concentrated on certain sectors. Monetary policy will continue to have different sectoral impacts, however, because access to, and dependence on, international capital flows differ. In addition, to the extent that central banks can control short-term interest rates to a much greater extent than long-term rates, the impact of policy is likely to be felt in sectors that are sensitive to short-term rates. These effects may be offset by the expanded use of hedging devices, such as swap contracts, that can insulate firms from exchange rate and interest rate changes.

To the extent that aggregates are used as policy guides, greater attention is likely to be paid to the asset side of the balance sheet of financial intermediaries. Changes in bank assets will continue to be important sources of information on borrowing and spending behavior in the household and small business sectors, which will continue to rely heavily on intermediated finance.[23] Broader credit aggregates that include nonbank financial institutions and capture financing activity outside banks will provide information about the financing behavior of larger private sector entities with more direct access to securities markets.

[22]See "The Interest Rate Transmission Mechanism in the United Kingdom and Overseas," Bank of England, *Quarterly Bulletin* (May 1990), pp. 198–214.

[23]For a discussion of the effects of credit supply in the Canadian economy, see William Lee, "Balance Sheet Risk, Credit Supply, and Their Impact on Real Economic Activity," IMF Working Paper (1993, forthcoming).

Because of the decrease in central banks' direct control over the volume of lending, interest rates are likely to become more important indicators of the stance of monetary policies. In addition, because asset prices can convey important information about the supply of liquidity, as they did in the late 1980s, changes in asset prices may be incorporated judgmentally into policy analyses. The U.K. authorities, for example, have announced that they now include asset prices among their indicator variables. The recent episode would suggest that changes in monetary policy will continue to affect asset prices beyond the current adjustment period.

Lessons for the 1990s

In the past it has been sufficient for monetary authorities to concentrate on inflation in consumer prices—or more broadly on the prices of the flow of goods and services—and to consider asset price inflation only insofar as it was a signal of future general inflation. The recent period has demonstrated, however, that inflation in asset prices can occur without significant movement in standard price indices. In retrospect, monetary policy in some countries inadvertently permitted an overly rapid expansion of money and credit during the 1980s, and there was not a full appreciation of the emerging financial imbalances in both the financial and nonfinancial sectors. Policymakers allowed the real cost of credit for real estate and equity purchases to remain too low for too long.

Without the confluence of events—structural changes in financial markets, expansionary fiscal policies, and expansionary monetary policies—the asset price cycle might not have occurred. Although economic policy should not be designed to offset regulatory and structural changes explicitly, dealing with the effects of such changes should be a vital part of the policy strategy. Moreover, experience in many countries clearly suggests that there should be greater coordination of macroeconomic and regulatory policies.

Some of the problems that complicated monetary policy during the 1980s stemmed from the underappreciation of the innovative ability of the private sector and of the effects of competition on the financial sector. In some cases, the speed and scope of deregulation resulted in excessive risk taking or allowed financial institutions to move into new and unfamiliar lines of business. This placed heavy and unexpected demands on supervisory institutions, which were not fully prepared for the consequences of deregulation. Thus, it would appear that supervisory practices need to be strengthened as deregulation proceeds. Prudential regulation, oversight, and increased capital standards are needed in order to ensure that the gains from increased competition in financial markets are not offset by the systemic weaknesses arising from the insolvency of financial institutions. The sequencing and pace of deregulation, and the need for coordination among regulators, are critical components of any deregulation effort.

Many questions remain unanswered, but perhaps the most important is whether the asset price inflation was a temporary development, associated with a particular combination of structural changes in financial markets and expansionary macroeconomic policies, or whether it can be expected to be a permanent feature of the transmission process of monetary policy. Key features of financial liberalization in the 1980s were the expansion of the nonbank financial sector and the increased level of financial activity undertaken by both businesses and households. Policymakers should have expected, as some did, that the components of expenditure that would be most affected would be those that are typically financed with credit, rather than those that are financed out of current income and profits.

Although standard price measures will continue to be the main focus of monetary policy, it is important to realize that these may not adequately identify inflation pressures in all parts of the economy. Perhaps the most dramatic example is what occurred in Japan, where, by conventional measures, price stability was maintained throughout the 1980s, even during the dramatic asset price inflation of 1986–90. The flow of goods and services is only a small part of total transactions that occur during any given period, and focusing on consumer or producer prices discards much of the information available for measuring inflationary pressures. Although asset prices are volatile and are determined by many factors other than monetary policy, they should not be ignored when there is reason to believe that excess liquidity is being channeled into asset markets rather than flow markets.

Another question is whether monetary policy should respond to sharp movements in asset prices. To the extent that asset prices adjust rapidly—because of portfolio adjustments or other fundamental changes in the real economy, for example—monetary policy would have little if any role except to ensure that these adjustments occur in a stable financial environment. To the extent that asset price changes are related to excess liquidity or credit, however, monetary policy should view them as inflation and respond appropriately. There is nothing unique about asset markets that would suggest that asset prices can permanently absorb overly expansionary monetary policies, without ultimately leading to costly real and financial adjustments. One very clear lesson of this experience is that an excessive buildup of private debt to finance asset accumulation in certain sectors can have significant adverse macroeconomic consequences, including

deep recessions, slower economic recoveries from recession, and sharp and costly adjustments in many parts of the private sector.

Although they do not yet generally exist, broadly defined transaction-based price indices could serve as useful complementary indicators for economy-wide inflation.[24] If asset price changes reflect relative price adjustments, the aggregate transaction-based price index would remain unchanged because increases in some asset prices would be offset by decreases in others. Increases in an aggregate transaction-based price index that were large, persistent, and not attributable to special or temporary factors would suggest—as with other price indices and consistent with current monetary policy practices—the need for a tighter monetary policy.

This problem goes beyond that of inadequate price measures, however. Policymakers regularly review a broad set of price indices, including those for commodities and assets. The fundamental problem is that the analytical framework used in most countries to assess the stance of monetary policies was not sufficiently broad and flexible to assess developments in key asset markets properly. In effect, the asset price developments were not viewed as requiring an adjustment in monetary policy. Thus, it would appear that the conventional framework—and more specifically, the class of models—used to formulate monetary policies and targets needs to be re-examined and altered in light of the experience of the late 1980s.

Finally, although international capital flows did not play a prominent role in recent episodes of asset price inflation, they seem likely to become increasingly important features of the global financial environment in the coming years—as they already have in Europe. These developments may require a further shift in the policy framework in the future. As has been clear from recent experience, historical macroeconomic relationships may not be reliable guides, and it may be necessary to evaluate developments from a microeconomic, as well as macroeconomic, perspective. In the asset price inflation episode, for example, greater attention to shifts in the composition of borrowing and the channels of spending might have alerted policymakers to changes in the way monetary policy was being transmitted to inflation. Reliance on the historical links between monetary policy and standard price indices turned out to be misleading.

[24]Irving Fisher discussed the construction of such indices in the *Purchasing Power of Money* (New York: Macmillan, 1913; A.M. Kelley, 1985).

Annex II

Medium-Term Baseline Projections and Alternative Scenarios

The medium-term projections in the *World Economic Outlook* are conditional on several technical assumptions and thus are not necessarily forecasts of most likely outcomes. These assumptions include unchanged policies, except for measures already announced and likely to be implemented; constant real effective exchange rates, except for bilateral rates in the ERM, which are assumed to be constant in nominal terms; and specific projections for interest rates and world oil prices.[1]

Baseline Scenario for Industrial Countries

Annual growth in real GDP in the group of industrial countries is projected to rise from 2 percent in 1993 to an average of 3 percent in the period 1995–98 (Table 24), slightly in excess of potential output growth, allowing slack to be gradually taken up. Further progress in reducing inflation is also expected, owing to the current large margin of unused productive capacity in many countries and the projection of only a modest pickup in activity, especially in Europe and Japan. Inflation is therefore projected to decline gradually to 2½ percent by 1998.

The recovery of output together with continued—and in some cases reinvigorated—efforts toward fiscal consolidation are expected to lead to a significant reduction in general government budget deficits over the medium term. For the industrial countries as a whole, the general government deficit is projected to decline from 4¼ percent of GDP in 1993 to about 3 percent of GDP in 1995–98. Because most industrial countries are expected to be operating near potential levels of output by 1998, the remaining deficits would be structural and would persist in the long term in the absence of further policy action. Substantial deficit reduction is projected in most major industrial countries, particularly in those having the most severe cyclical difficulties—Canada and the United Kingdom—and in Italy. Progress in deficit reduction is also projected for most of the smaller industrial countries, although deficits are expected to remain relatively high in the medium term in Belgium, Greece, Norway, and Sweden.

External imbalances in the major industrial countries narrowed significantly in 1991 and 1992. The slowdown of activity in the United States helped to reduce its deficit, and relatively strong growth in Japan in 1991 narrowed its surplus, whereas the German surplus had become a deficit because of the costs of unification. These factors are expected to unwind, however, and a renewed widening of external imbalances is projected for several large countries in the short term. Given the fiscal policy and the exchange rate assumptions underlying the projections, relatively large imbalances—particularly the deficits in Canada, the United States, and the United Kingdom, and the Japanese surplus—are likely to persist in the medium term.

Alternative Scenario for Industrial Countries

As discussed in Chapters I and III, the prospects for economic recovery and subsequent growth in the industrial countries would be enhanced by the adoption of a strategy of coordinated policy adjustments. To illustrate the possible gains from this approach, MULTIMOD, the IMF's multicountry macroeconometric model, has been used to simulate the economic effects of a cooperative policy package involving credible efforts to reduce structural budget deficits over the medium term in countries where such deficits are projected to be unsustainable, as well as a significant lowering of interest rates in Europe. Policies are assumed to be implemented in the first half of 1993, except in Canada, where fiscal consolidation is assumed to begin in 1994.[2] Compared with a no-policy-change scenario, in the United States the government deficit is assumed to fall by twice as much over the medium term as envisaged in the administration's

This annex was prepared by Robert P. Ford and Manmohan S. Kumar.

[1]For detailed assumptions on oil prices, interest rates, and the reference period for exchange rates, see the introduction to the Statistical Appendix.

[2]Because MULTIMOD is an annual model, the simulation results were adjusted to reflect the assumption that there would be no effects of the policy changes in the first half of the year.

Table 24. Industrial Countries: Selected Indicators of Economic Performance[1]

(Percent change unless otherwise noted)

	1992	1993	1994	Average 1995–98
Major industrial countries				
Real GDP	1.6	1.9	3.0	2.9
Real total domestic demand	1.7	1.9	3.2	2.9
GDP deflator	3.0	2.7	2.8	2.6
General government balance[2]	−3.9	−4.2	−3.3	−2.0
Current account balance[2]	−0.2	−0.3	−0.5	−0.3
United States				
Real GDP	2.1	3.2	3.2	2.5
Real total domestic demand	2.5	3.6	3.4	2.4
GDP deflator	2.6	2.6	2.9	2.8
General government balance[2]	−4.6	−4.1	−3.2	−2.1
Current account balance[2]	−1.0	−1.6	−2.0	−1.6
Unified deficit — current services[3]	4.9	5.2	4.6	4.5
Based on February plan[3]	4.9	5.4	4.0	3.0
Japan				
Real GDP	1.3	1.3	3.5	4.0
Real total domestic demand	0.6	1.3	4.4	4.2
GDP deflator	1.8	1.5	1.6	1.7
General government balance[2]	2.1	0.9	1.3	1.8
Current account balance[2]	3.2	3.4	3.0	2.7
Germany				
Real GDP	2.0	−1.3	1.7	3.0
Real total domestic demand	2.6	−1.0	1.3	2.6
GDP deflator	5.2	4.7	2.8	2.6
General government balance[2]	−2.8	−3.7	−3.0	−2.7
Current account balance[2]	−1.3	−1.4	−1.2	−0.8
Fiscal balance: Territorial authorities	−4.0	−4.8	−4.4	−3.4
France				
Real GDP	1.8	—	2.3	3.1
Real total domestic demand	0.9	—	2.3	3.3
GDP deflator	2.7	2.0	2.5	2.8
General government balance[2]	−3.8	−5.7	−5.1	−2.9
Current account balance[2]	0.2	0.2	0.3	−0.1
Italy				
Real GDP	0.9	0.3	1.9	2.3
Real total domestic demand	1.0	−1.1	1.2	2.1
GDP deflator	4.7	4.7	4.7	3.1
General government balance[2]	−10.2	−10.3	−8.9	−5.5
Current account balance[2]	−2.1	−1.6	−1.3	−0.5
United Kingdom				
Real GDP	−0.6	1.4	3.1	2.8
Real total domestic demand	0.5	1.1	3.0	2.9
GDP deflator	4.6	2.5	4.0	3.0
General government balance[2]	−6.2	−8.8	−7.7	−4.9
Current account balance[2]	−2.0	−2.8	−2.7	−3.3
Canada				
Real GDP	0.9	3.2	4.4	3.9
Real total domestic demand	0.3	2.7	4.4	3.8
GDP deflator	1.0	1.1	2.0	1.8
General government balance[2]	−6.4	−5.9	−4.3	−2.1
Current account balance[2]	−4.2	−3.3	−2.4	−1.7
Other industrial countries				
Real GDP	0.8	0.6	2.1	3.1
Real total domestic demand	0.4	0.3	1.9	3.1
GDP deflator	3.8	3.5	3.3	2.8
General government balance[2]	−5.0	−5.3	−4.7	−3.2
Current account balance[2]	−0.1	0.1	0.3	0.1

Table 24 ***(concluded)***

	1992	1993	1994	Average 1995–98
Memorandum				
European Community				
Real GDP	1.1	0.1	2.2	3.0
Real total domestic demand	1.3	−0.2	1.9	2.9
GDP deflator	4.6	3.6	3.5	2.9
General government balance[2]	−5.5	−6.6	−5.7	−3.8
Current account balance[2]	−1.0	−1.0	−0.8	−0.8
West Germany				
Real GDP	1.5	−2.0	1.2	2.6
Real total domestic demand	1.6	−1.6	1.0	2.5
GDP deflator	4.5	3.9	2.3	2.4
Developing countries				
Real GDP	6.1	5.1	5.1	5.9
Countries in transition				
Real GDP	−15.5	−8.8	−1.6	4.6

[1]Projections are based on the assumptions of unchanged policies and constant real exchange rates and oil prices.

[2]In percent of GDP on a national accounts basis.

[3]Administration projections in percent of GDP for fiscal years.

economic plan presented in February 1993. In Japan, the government is assumed to pursue a somewhat more expansionary financial policy in the short run (in line with the recently announced package), and then to resume progress on fiscal consolidation over the medium term. Fiscal consolidation in Germany is assumed to proceed more rapidly than envisaged in the baseline and, as a result, the government deficit is 1 percent of GDP lower in 1994–97. In addition, the scenario assumes a faster and slightly more pronounced reduction of interest rates in Germany and across Europe than in the baseline. This permits an easing of tensions in exchange markets and, hence, a marked narrowing of interest differentials vis-à-vis Germany. Both Italy and the United Kingdom, as for Germany, are assumed to speed up fiscal consolidation. In Italy, this is assumed to reduce the current risk premium by 200 basis points; in the United Kingdom, it is assumed to reduce the long-term risk premium by about 100 basis points.[3]

The implementation of credible fiscal consolidation packages in the United States and Europe results in an immediate decline in long-term interest rates and a rise in investment in the industrial countries (Table 25). Real investment also rises in Japan in direct response to the monetary and fiscal stimulus. In the EC and Japan, output rises well above the no-policy-change scenario by 1994. In the United States, fiscal consolidation puts downward pressure on interest rates, but this is attenuated by the gradual nature of fiscal consolidation and is offset by the depreciation of the dollar owing to a widening of the risk premium.[4] The depreciation of the exchange rate improves the external position, which essentially offsets the direct effect of the fiscal contraction, leaving little change in output. There is, of course, a marked and increasing improvement in the government fiscal balance.[5] In the medium term, potential output is slightly higher, primarily as a result of the fiscal consolidation in the United States and Europe and the higher investment it induces. In the developing countries, output is somewhat higher owing to lower interest rates and somewhat higher demand in the industrial countries.

Baseline Scenario for Developing Countries

In developing countries with IMF-supported adjustment programs, the medium-term projections

[3]These coordinated policy actions include some measures that have already been announced and, as such, are included in the baseline projections, although not in the notional no-policy-change scenario against which the simulated effects of the coordinated policy package are compared. Specifically, the baseline projections take into account the budget consolidation program announced by the U.S. administration in February 1993 and the expansionary fiscal measures in Japan announced in April 1993, whereas these prospects are not included in the notional no-policy-change scenario.

[4]Specifically, the risk premium between dollar and deutsche mark assets is assumed to be unchanged. As the risk premium between Germany and other European countries falls, however, that between Europe as a whole and the United States rises.

[5]See the October 1992 *World Economic Outlook*, Annex II, for another simulation of the effects of fiscal consolidation in the United States; in that simulation, considerable progress in deficit consolidation is made with relatively little output loss.

assume that the policies underlying the programs will be implemented.[6] More generally, many countries have undertaken or begun to put in place significant structural reforms that are expected to raise long-term growth prospects. The continued success of these reforms underpins the projections, particularly for countries in the Western Hemisphere and Africa.

Nonfuel primary commodity prices are assumed to increase, on average, by 3¾ percent a year in 1995–98, and exchange rates are assumed to remain unchanged in real terms. Given projected price developments in industrial countries and in other traded commodities, these assumptions imply little change in the terms of trade of developing countries in 1995–98 (Table 26). Total financing flows to the net debtor developing countries are expected to increase in the medium term compared with 1983–92 as private capital inflows and commercial bank lending continue to expand in line with recent experience.

On the basis of these assumptions and the medium-term projections for industrial countries, real GDP growth in net debtor developing countries is projected to average 6 percent a year in 1995–98, which is considerably stronger than in 1983–92. This improvement can be traced to a marked strengthening of activity in the countries that had experienced debt-servicing difficulties in the past. Growth in this group is expected to rise to 4¾ percent in 1995–98, compared with only 2 percent in the ten years to 1992, reflecting a significant easing of the debt burden, an improvement in the terms of trade, and a sharp increase in export volumes. Inflation could fall to 11 percent, and investment ratios rise over 4 percentage points, compared with 1982–92 levels. In countries without debt-servicing difficulties, growth is expected to be around 6¾ percent over the medium term, about the same as during 1983–92.

In the *Western Hemisphere*, GDP growth is projected to rise to about 4¾ percent, compared with 2 percent in 1983–92 (Table 27). This would imply annual per capita growth of over 2¾ percent in the medium term, compared with a decline of ¼ of 1 percent a year during 1983–92. Inflation is expected to decline sharply, to just under 10 percent in the medium term. A key factor behind this improvement is the macroeconomic adjustments and the significant structural reforms implemented in several countries in recent years, which have prepared the ground for sustained medium-term growth. A continuation of capital inflows is expected to complement domestic saving and will also be important for the medium-term growth.

[6]As of the end of December 1992, 44 countries had IMF arrangements (excluding central European countries). Of these, 18 had stand-by arrangements, 5 extended arrangements, 6 SAF arrangements, and 15 ESAF arrangements.

Table 25. Industrial Countries: Alternative Projections Assuming Policy Coordination

(Percent deviation from no-policy-change scenario)

	1993	1994	1995
All industrial countries			
Real GDP	0.3	0.5	0.3
Real investment	1.0	2.5	2.7
GDP deflator	0.1	0.5	0.8
Short-term interest rate[1]	−0.6	−0.6	−0.2
Long-term interest rate[1]	−0.5	−0.6	−0.8
Real long-term interest rate[1]	−0.4	−0.4	−0.4
General government balance[2]	−0.1	0.6	1.0
General government debt[2]	−0.3	−1.3	−2.3
United States			
Real GDP	0.1	0.1	−0.2
Real investment	0.1	0.3	0.5
GDP deflator	0.1	0.2	—
Short-term interest rate[1]	0.1	0.3	0.2
Long-term interest rate[1]	—	−0.2	−0.6
Real long-term interest rate[1]	0.3	0.2	−0.1
Real effective exchange rate	−1.1	−2.0	−3.2
Current account balance[3]	4.6	14.8	19.9
General government balance[2]	—	0.7	1.3
General government debt[2]	−0.2	−0.7	−1.8
Japan			
Real GDP	0.4	0.9	0.6
Real investment	1.1	2.9	2.7
GDP deflator	0.3	1.2	2.0
Short-term interest rate[1]	−1.4	−1.2	0.6
Long-term interest rate[1]	−0.4	−0.2	−0.3
Real long-term interest rate[1]	−0.6	−0.2	−0.1
Real effective exchange rate	0.4	1.4	2.3
Current account balance[3]	−0.8	−2.1	−2.0
General government balance[2]	−1.1	−0.3	0.1
General government debt[2]	0.9	0.9	0.8
EC countries			
Real GDP	0.3	0.7	0.7
Real investment	1.6	4.0	4.6
GDP deflator	0.1	0.4	0.9
Short-term interest rate[1]	−1.0	−1.0	−0.9
Long-term interest rate[1]	−1.1	−1.2	−1.2
Real long-term interest rate[1]	−1.1	−1.0	−1.0
Real effective exchange rate	0.4	0.4	0.6
Current account balance[3]	0.5	−6.7	−8.2
General government balance[2]	0.3	0.9	1.3
General government debt[2]	−0.8	−2.0	−3.3
Other industrial countries			
Real GDP	0.2	0.5	0.4
Real investment	1.0	2.5	3.0
GDP deflator	0.2	0.6	0.9
Short-term interest rate[1]	−0.3	−0.8	−0.4
Long-term interest rate[1]	−0.5	−0.7	−0.7
Real long-term interest rate[1]	−0.4	−0.4	−0.4
Real effective exchange rate	−0.3	−0.3	—
Current account balance[3]	−1.8	−3.3	−5.9
General government balance[2]	0.1	0.4	0.4
General government debt[2]	−0.6	−1.3	−1.6
Net debtor countries			
Real GDP	0.1	0.2	0.1
Export volume	0.3	0.4	—
Debt ratio[4]	−3.3	−4.0	−3.6
Debt service ratio[4]	−0.1	−0.1	—
Current account balance[4]	−0.3	−0.2	−0.1

[1]In percentage points.
[2]In percent of GDP.
[3]In billions of U.S. dollars.
[4]In percent of exports of goods and services.

Table 26. Developing Countries: Indicators of Economic Performance

(Annual averages unless otherwise noted)

	1983–92	1993–94	1995–98
All developing countries			
	Percent change or percent of GDP		
Real GDP	4.7	5.1	5.9
Real GDP per capita	2.5	3.0	3.9
Consumer prices	41.6	26.6	8.4
Investment ratio	25.0	26.7	27.6
Export volume	6.5	9.2	9.1
Import volume	4.8	8.2	8.6
Terms of trade	−2.1	−0.7	—
	In billions of U.S. dollars		
Trade balance	26.3	−21.5	−59.5
Current account balance	−41.3	−75.6	−79.8
Non-debt-creating flows, net	6.7	5.2	2.2
Official transfers	7.7	3.4	−5.4
Direct investment, net	6.3	6.0	4.8
Total net external credit	50.2	66.8	70.2
Memorandum			
Net official credit[1]	32.1	32.7	20.2
Net bank credit[2]	13.1	15.1	19.2
	In percent of exports of goods and services		
Total external debt[3]	120.0	105.3	80.1
Debt-service payments	18.1	13.6	11.8
Interest payments	9.5	6.4	5.3
Net debtor countries[4]			
	Percent change or percent of GDP		
Real GDP	4.8	5.1	6.0
Real GDP per capita	2.6	3.1	4.0
Consumer prices	44.8	28.0	8.6
Investment ratio	25.2	27.1	28.0
Export volume	7.5	10.1	9.9
Import volume	5.4	9.6	9.3
Terms of trade	−1.2	−0.5	—
	In billions of U.S. dollars		
Trade balance	−12.6	−62.5	−64.6
Current account balance	−42.4	−68.4	−77.1
Non-debt-creating flows, net	8.7	3.7	2.2
Official transfers	5.8	−3.8	−5.4
Direct investment, net	10.9	7.9	5.3
Total net external credit	47.4	67.7	70.7
Memorandum			
Net official credit[1]	31.2	29.7	21.3
Net bank credit[2]	12.6	17.1	19.3
	In percent of exports of goods and services		
Total external debt[3]	142.0	123.0	91.6
Debt-service payments	21.9	15.5	13.3
Interest payments	11.5	7.4	6.1

Table 26 ***(concluded)***

	1983–92	1993–94	1995–98
Countries with debt-servicing difficulties			
	Percent change or percent of GDP		
Real GDP	2.0	2.9	4.7
Real GDP per capita	−0.3	0.7	2.4
Consumer prices	107.8	67.5	11.5
Investment ratio	19.5	21.4	23.3
Export volume	3.5	7.2	6.9
Import volume	−0.2	6.3	6.4
Terms of trade	−2.9	−0.1	0.5
	In billions of U.S. dollars		
Trade balance	13.7	−15.2	−11.1
Current account balance	−27.6	−44.4	−51.7
Non-debt-creating flows, net	6.2	2.7	−0.4
Official transfers	3.8	−5.2	−14.5
Direct investment, net	7.8	7.0	4.3
Total net external credit	23.8	27.3	28.7
Memorandum			
Net official credit[1]	21.3	17.6	10.5
Net bank credit[2]	3.4	8.7	11.4
	In percent of exports of goods and services		
Total external debt[3]	280.5	245.4	193.6
Debt-service payments	32.2	28.5	26.1
Interest payments	19.0	15.1	12.3
Countries without debt-servicing difficulties			
	Percent change or percent of GDP		
Real GDP	6.9	6.3	6.7
Real GDP per capita	4.9	4.5	5.0
Consumer prices	10.6	8.9	7.0
Investment ratio	29.5	30.4	30.6
Export volume	10.1	11.3	11.0
Import volume	8.8	10.9	10.3
Terms of trade	−0.1	−0.6	−0.1
	In billions of U.S. dollars		
Trade balance	−26.3	−47.3	−53.5
Current account balance	−14.7	−24.0	−25.5
Non-debt-creating flows, net	11.6	4.5	4.3
Official transfers	7.9	−2.5	0.3
Direct investment, net	14.9	8.7	6.1
Total net external credit	23.6	40.4	42.0
Memorandum			
Net official credit[1]	9.9	12.1	10.8
Net bank credit[2]	9.2	8.4	8.0
	In percent of exports of goods and services		
Total external debt[3]	83.0	73.4	55.1
Debt-service payments	15.4	10.1	8.5
Interest payments	6.7	4.2	3.8

[1]Estimate of long-term borrowing from official creditors. See footnotes to Table A32 in the Statistical Appendix.

[2]Estimate of net lending from commercial banks. See footnotes to Table A32 in the Statistical Appendix.

[3]End of period, excluding liabilities to the IMF.

[4]Excludes eight net creditor countries from all developing countries. See the introduction to the Statistical Appendix for definition of net creditor countries.

Table 27. Net Debtor Developing Countries: Indicators of Economic Performance

(Annual averages unless otherwise noted)

	1983–92	1993–94	1995–98
Africa			
	Percent change or percent of GDP		
Real GDP	2.1	3.3	4.4
Real GDP per capita	−0.8	0.5	1.6
Consumer prices	21.2	13.3	8.8
Investment ratio	21.2	22.2	23.5
Export volume	3.4	3.5	3.7
Import volume	−1.5	3.3	4.7
Terms of trade	−3.7	−1.8	0.4
	In billions of U.S. dollars		
Trade balance	5.4	0.7	−1.1
Current account balance	−6.3	−7.7	−8.2
Non-debt-creating flows, net	6.8	2.3	3.6
Official transfers	9.5	0.3	2.6
Direct investment, net	−0.6	10.8	7.4
Total net external credit	7.5	9.0	9.5
Memorandum			
Net official credit[1]	7.2	10.5	8.1
Net bank credit[2]	−0.6	−1.9	0.1
	In percent of exports of goods and services		
Total external debt[3]	228.9	226.1	199.8
Debt-service payments	25.2	29.3	21.8
Interest payments	10.7	12.8	9.1
Asia[4]			
	Percent change or percent of GDP		
Real GDP	7.2	6.6	7.0
Real GDP per capita	5.3	4.9	5.3
Consumer prices	9.0	7.1	5.3
Investment ratio	30.0	30.9	31.2
Export volume	10.7	11.9	11.6
Import volume	9.9	11.8	10.8
Terms of trade	0.3	−0.6	−0.2
	In billions of U.S. dollars		
Trade balance	−17.4	−34.9	−39.0
Current account balance	−14.5	−24.7	−27.2
Non-debt-creating flows, net	12.8	7.3	4.9
Official transfers	4.7	−1.8	−6.3
Direct investment, net	16.4	9.3	6.7
Total net external credit	22.0	36.5	38.0
Memorandum			
Net official credit[1]	9.2	8.7	8.2
Net bank credit[2]	7.8	8.7	7.7
	In percent of exports of goods and services		
Total external debt[3]	76.2	66.8	49.5
Debt-service payments	12.7	8.0	7.0
Interest payments	5.7	3.5	3.1

Table 27 *(concluded)*

	1983–92	1993–94	1995–98
Middle East and Europe[5]			
	Percent change or percent of GDP		
Real GDP	3.7	4.2	4.5
Real GDP per capita	1.2	1.7	2.0
Consumer prices	33.8	31.9	31.0
Investment ratio	21.4	20.7	21.2
Export volume	3.3	14.5	8.9
Import volume	−1.2	9.7	6.4
Terms of trade	−2.1	0.8	0.5
	In billions of U.S. dollars		
Trade balance	−21.7	−23.3	−22.6
Current account balance	−8.9	−1.1	−0.9
Non-debt-creating flows, net	4.0	−12.0	−24.8
Official transfers	3.7	−15.1	−41.6
Direct investment, net	6.2	4.7	2.8
Total net external credit	5.0	7.3	4.1
Memorandum			
Net official credit[1]	5.0	2.7	0.3
Net bank credit[2]	1.5	0.9	0.7
	In percent of exports of goods and services		
Total external debt[3]	260.3	211.9	153.4
Debt-service payments	26.6	19.7	16.3
Interest payments	14.0	10.4	8.9
Western Hemisphere			
	Percent change or percent of GDP		
Real GDP	2.0	2.5	4.8
Real GDP per capita	−0.1	0.5	2.8
Consumer prices	176.3	105.3	9.8
Investment ratio	19.6	22.4	24.6
Export volume	4.4	5.9	6.9
Import volume	3.0	5.2	6.7
Terms of trade	−2.6	0.3	0.5
	In billions of U.S. dollars		
Trade balance	21.1	−4.9	−2.0
Current account balance	−12.6	−34.9	−40.8
Non-debt-creating flows, net	8.8	7.6	4.2
Official transfers	4.4	25.3	11.2
Direct investment, net	9.2	6.0	3.4
Total net external credit	13.0	14.9	18.9
Memorandum			
Net official credit[1]	9.8	7.9	4.6
Net bank credit[2]	4.0	9.3	10.8
	In percent of exports of goods and services		
Total external debt[3]	249.6	220.3	178.6
Debt-service payments	38.1	31.2	31.3
Interest payments	23.2	16.4	14.5

[1]Estimate of long-term borrowing from official creditors. See footnotes to Table A32 in the Statistical Appendix.

[2]Estimate of net lending from commercial banks. See footnotes to Table A32 in the Statistical Appendix.

[3]End of period, excluding liabilities to the IMF.

[4]Excludes Taiwan Province of China.

[5]Excludes Islamic Republic of Iran, Kuwait, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

Table 28. Developing Countries: Alternative Projections Assuming Policy Slippages[1]

(Annual percent change unless otherwise noted)

	Inflation		Investment Ratio[2]		Growth of Total Factor Productivity		Growth of Export Volume		Growth of Total Potential Output	
	Baseline	Alternative	Baseline	Alternative	Baseline	Alternative	Baseline	Alternative	Baseline	Alternative
Net debtor countries[3]	**7.6**	**39.7**	**25.0**	**24.7**	**3.0**	**1.5**	**7.2**	**6.5**	**4.9**	**3.4**
By region										
Africa	3.7	13.2	24.1	24.0	3.7	2.2	4.1	3.6	5.5	4.0
Asia	4.3	8.0	25.9	25.5	2.8	1.4	9.5	9.0	6.0	4.5
Middle East and Europe	4.7	17.1	22.1	22.0	1.9	0.9	0.6	0.4	3.6	2.7
Western Hemisphere	9.0	53.7	24.9	24.7	3.0	1.5	7.1	6.3	4.6	3.0
By analytical criteria										
Countries with recent debt-servicing problems	8.4	48.3	24.9	24.6	3.0	1.6	6.8	6.1	4.6	3.0
Countries without recent debt-servicing problems	4.4	7.6	25.4	25.1	2.8	1.5	8.6	8.0	6.2	4.7
Fifteen heavily indebted countries	8.8	51.6	25.3	25.0	3.1	1.6	7.4	6.7	4.6	3.0

[1]The alternative scenario assumes that adjustment programs and structural reforms are not fully implemented in a number of countries.
[2]Percent of GDP.
[3]Based on the developing country scenario and adjustment models for the 44 countries with IMF programs at the end of 1992.

Growth in *Africa* is projected to increase to 4¼ percent in 1995–98, assuming success in structural reforms in many countries, reductions in civil strife, and a small improvement in the region's terms of trade. As noted in Chapter IV, projections for Africa are subject to higher downside risks than those for other regions. A decisive improvement in prospects will require continuation of reform policies accompanied by political stability, institution building, and adequate financial and technical assistance. In the net debtor developing countries of the *Middle East and Europe* region, medium-term growth is expected to average around 4½ percent, somewhat higher than in the recent past. Several countries are likely to benefit from significant structural reforms and stabilization programs. Real output in *Asia* is projected to increase by about 7 percent on average in 1995–98, somewhat higher than in 1993–94. The high growth rates in Asia reflect the successful implementation of policies to liberalize trade and the financial system and the continuation of macroeconomic stability and very high investment rates.

The combined current account deficit of the net debtor countries is projected to average $77 billion a year in 1995–98, about $8½ billion higher than the average during 1993–94. The deficit of countries with recent debt-servicing difficulties would increase by about $7 billion, reflecting some increase in capital flows, and there would be an increase of around $1½ billion in countries without debt-servicing difficulties. These trends imply a marked decline in the deficit as a percentage of export receipts and suggest some tapering off of the rapid rate of growth of capital goods imports into Asia and Latin America in recent years.

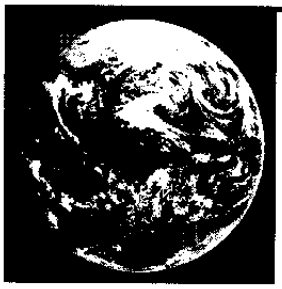
The aggregate debt-export ratio of the net debtor developing countries is projected to decline to an average of about 92 percent in 1998, about half its 1986 peak, because of debt restructurings and better export performance. Debt-service payments—including interest payments on total debt plus amortization payments on long-term debt—are expected to decline to around 13 percent of export receipts, the lowest since the start of the debt crisis in 1982. This reduction in debt and debt-service ratios would support increased macroeconomic stability and stronger growth in debtor countries.

Alternative Scenario for Developing Countries

As emphasized above, the medium-term projections for the developing countries assume that reform efforts and adjustment policies remain on track. If the momentum for structural reforms is not sustained and policy slippages emerge, however, fiscal deficits and monetary growth would be higher than envisaged under the adjustment programs. This would mean that inflation would fall more slowly than in the baseline, with detrimental effects on investment and growth. To illustrate how such policy slippages might affect the medium-term projections, it is assumed that, in countries with IMF programs and very high inflation during 1989–91, higher fiscal deficits would result in inflation falling only to its 1986–90 level, rather than to the much lower levels projected in the baseline. For countries that had relatively low inflation over the 1989–91 period, inflation is assumed to remain at the average during the two years before program implementation, which is about 5 percentage points higher than in the baseline. It is also assumed that higher inflation and slippages in other aspects of IMF programs result in an increase in investment ratios and total factor productivity between 1988–91 and 1995–98 that is only half as large as in the baseline.

The consequences of policy slippages for the medium-term outlook are illustrated in Table 28.[7] For net debtor countries with adjustment programs, average inflation in 1995–98 would be about 30 percentage points higher than in the baseline, with particularly sharp differences in the Western Hemisphere and in the 15 heavily indebted countries. Investment ratios would be only marginally lower than in the baseline (in part because the denominator would now be lower, reflecting weaker activity), but annual total factor productivity growth in 1995–98 would fall from 3 percent to 1½ percent for the net debtor program countries as a group. The annual average growth of potential output would fall from 4¾ percent to about 3¼ percent for these countries. These results probably understate the effect of policy slippages on growth because indirect effects of lower investment on aggregate demand are not taken into account.

[7]The policy-slippage scenario was carried out using a disaggregated model system for developing countries. For a description, see Charles Adams and Claire Hughes Adams, "A Scenario and Forecast Adjustment Model for Developing Countries," *Staff Studies for the World Economic Outlook*, World Economic and Financial Survey (IMF, August 1989).



Annex III

Regional Trading Arrangements

The growth of regional trading arrangements in the postwar period, on balance, has been accompanied by multilateral and unilateral reductions in trade barriers, which may have helped pave the way for global trade liberalization. But such arrangements also could lead to trading blocs that might pose a threat to multilateral trading relations and jeopardize global free trade. The stakes have increased with regionalization in developing countries, the creation of the EC single market, the formation of the Canada-United States Free Trade Area (CUSTA), which may now be extended to include Mexico in the North American Free Trade Agreement (NAFTA), and the uncertainty over the Uruguay Round. Empirical evidence suggests that regional trading arrangements in industrial countries have generally increased members' welfare, although the record with regard to developing countries has been less encouraging. The longer-term effect of regional trade arrangements on global multilateral trade relations remains to be seen.[1]

Evolution of Regional Arrangements

From the time of its establishment in 1947 until end-1992, over 20 regional arrangements have been notified to the GATT, mainly in Africa, the Americas, and Europe (Table 29).[2] There are four types of regional trading arrangements: free trade areas, where member countries reduce or abolish intra-area restrictions on trade while maintaining differential protection against nonmembers; customs unions, where, in addition to liberalizing intra-area trade, the members also establish a common external tariff; common markets, where the customs union is extended to factor movements; and economic union, where in a common market national economic policies are also harmonized.

The first major regional trading arrangement was the European Economic Community, established by the Treaty of Rome (1957) and initially comprising six members.[3] The EEC began as a customs union, with a gradual elimination of all tariffs among members, and included a common agricultural policy. It was first enlarged in 1973, with the addition of Ireland, Denmark, and the United Kingdom, and again in the 1980s, with the addition of Greece in 1981 and Portugal and Spain in 1986, and now is known as the European Community (EC). The single market program ("Europe 1992"), launched in 1985, set out to remove all remaining obstacles to the free movement of goods, services, capital, and labor by January 1, 1993; that is, to complete a common market. Indeed, with the harmonization of product standards, competition policies, and indirect taxes, the EC has moved toward economic and monetary union (EMU) and surpasses by far the integration achieved by other regional trading arrangements.

The European Free Trade Association (EFTA) was formed in 1960 and, unlike the EC, is a free trade area.[4] In recent years, despite their own arrangements and bilateral agreements with the EC, there had been a concern among EFTA members that the abolition of remaining barriers within the EC could lead to a deterioration in EFTA members' competitive positions because of greater efficiency of EC firms following an increase in the size of the market.[5] Moreover, there were fears in some quarters that for certain products or services, the EC single market would result in increased barriers to

This annex was prepared by Manmohan S. Kumar.

[1]For a detailed discussion of the experience of regional integration in industrial and developing countries, and its implications for the multilateral systems, see Augusto de la Torre and Margaret R. Kelly, *Regional Trade Arrangements*, Occasional Paper 93 (IMF, March 1992).

[2]In addition, over 60 preference schemes and association agreements have been notified to the GATT. Preference schemes are nonreciprocal arrangements, usually providing for a reduction in tariff rates, and are available only to developing countries. Association agreements are usually reciprocal, but are limited in commodity coverage and are available to all countries. The GATT is based on the principle of nondiscrimination among the Contracting Parties, but Article 24 allows for regional trade arrangements provided that they do not restrict trade with other countries.

[3]Belgium, France, Italy, Luxembourg, the Netherlands, and west Germany.

[4]The original seven members of EFTA were Austria, Denmark, Norway, Portugal, Sweden, Switzerland, and the United Kingdom. Denmark, Portugal, and the United Kingdom subsequently joined the EC.

[5]See Paul R. Krugman, "EFTA and 1992," EFTA Occasional Paper 23 (Geneva: European Free Trade Association, June 1988).

Table 29. Membership of Selected Regional Trade Arrangements

	Date Signed	Description and Membership
Africa		
CEAO	1973	Communauté Economique de l'Afrique de l'Ouest (West African Economic Community) Members (7): Bénin, Burkina Faso, Côte d'Ivoire, Mali, Mauritania, Niger, and Sénégal
CEPGL	1976	Communauté Economique des Pays des Grands Lacs (Economic Community of the Great Lakes Countries) Members (3): Burundi, Rwanda, and Zaïre
EAEC[1]	1967	East African Economic Community Members (3): Tanzania, Kenya, and Uganda
ECOWAS	1975	Economic Community of West African States Members (16): Bénin, Burkina Faso, Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sénégal, Sierra Leone, and Togo (Integrates the members of the CEAO, MRU, Gabon, The Gambia, Ghana, Guinea-Bissau, Nigeria, and Togo)
IOC	1982	Indian Ocean Commission Members (5): Comoros, France, Madagascar, Mauritius, and Seychelles
MRU	1973	Mano River Union Members (3): Guinea (1980), Liberia, and Sierra Leone
PTA	1981	Preferential Trade Area for Eastern and Southern Africa Members (19): Angola, Burundi, Comoros, Djibouti, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia (1993), Rwanda, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe
SACU	1910	Southern African Customs Union Members (4): Botswana, Lesotho, South Africa, and Swaziland
UDEAC	1964	Union Douanière et Economique de l'Afrique Centrale (Central African Customs and Economic Union) Members (6): Cameroon, Central African Republic, Congo, Gabon, Chad, and Equatorial Guinea
Asia and the Pacific		
ANZCERTA	1983	Australia-New Zealand Closer Economic Relations Trade Agreement (Free Trade Area formed in 1965) Members (2): Australia and New Zealand
ASEAN	1967	Association of South East Asian Nations Members (6): Brunei (1988), Indonesia, Malaysia, the Philippines, Singapore, and Thailand
Europe		
Benelux Union	1948	Belgium-Netherlands-Luxembourg Economic Union Members (3): Belgium, the Netherlands, and Luxembourg
EC	1957	The European Communities Members (12): Belgium, Denmark (1973), France, Germany, Greece (1981), Ireland (1973), Italy, Luxembourg, the Netherlands, Portugal (1986), Spain (1986), and the United Kingdom (1973)
EFTA	1960	European Free Trade Association Members (7): Austria, Finland (1961), Iceland (1970), Liechtenstein (1991), Norway, Sweden, and Switzerland

Table 29 *(concluded)*

	Date Signed	Description and Membership
Middle East		
ACM	1964	The Arab Common Market Members (7): Egypt, Iraq, Jordan, Libya, Mauritania, Syria, and Yemen
ECO	1985	Economic Cooperation Organization (formerly the Regional Cooperation for Development) Members (3): Islamic Republic of Iran, Pakistan, and Turkey; recently several states of the former Soviet Union and Afghanistan have become members (1992)
GCC	1981	Cooperation Council for the Arab States of the Gulf (also known as the Gulf Cooperation Council) Members (6): Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates
Western Hemisphere		
Andean Pact	1969	Andean Subregional Integration Agreement Members (5): Bolivia, Ecuador, Colombia, Peru, and Venezuela (Chile withdrew in 1976)
CACM	1960	Central American Common Market Members (5): Costa Rica (1962), El Salvador, Guatemala, Honduras, and Nicaragua
CARICOM	1973	Caribbean Community Members (13): Antigua and Barbuda, The Bahamas (1983), Barbados, Belize (1974), Dominica (1974), Grenada (1974), Guyana, Jamaica, Montserrat (1974), St. Kitts and Nevis, St. Lucia (1974), St. Vincent and the Grenadines (1974), and Trinidad and Tobago
LAIA	1980	Latin American Integration Association (superseded Latin American Free Trade Association, LAFTA, signed in 1960) Members (11): Mexico and all South American countries, except Guyana, French Guiana, and Suriname
U.S.-Canada FTA[2]	1988	United States-Canada Free Trade Agreement (also known as Canada-U.S. Free Trade Agreement, CUSTA) Members (2): The United States and Canada
U.S.-Israel FTA	1975	United States-Israel Free Trade Agreement Members (2): The United States and Israel

Source: Augusto de la Torre and Margaret R. Kelly, *Regional Trade Arrangements*, Occasional Paper 93 (IMF, March 1992); and IMF staff.

[1]Stopped operating in 1977, but some of the institutions established by it, such as the East African Development Bank, are still functional.

[2]May be extended to include Mexico in the North American Free Trade Agreement (NAFTA).

nonmembers, resulting in part from administrative mechanisms. These factors led to negotiations for a closer relationship with the EC, culminating in the agreement on the European Economic Area (or EEA) in 1991. This agreement extends most of the benefits and some major obligations of the EC to EFTA members (except Switzerland, where voters rejected the agreement in late 1992) but excludes monetary and political union.[6] Notwithstanding these benefits, the EFTA countries would have little influence on EC policies; four EFTA countries have applied for full EC membership, and two others are seriously considering doing so.[7]

The Australia-New Zealand Free Trade Area (ANZCERTA) was formed in 1965. It was succeeded in 1983 by the "Closer Economic Relations" agreement, under which all tariffs between the two countries were to be removed by January 1, 1988, and all nontariff barriers by 1995. Other trade-distorting practices, such as government procurement preferences and export incentives, were also addressed. In 1988 a new set of agreements, including those concerning macroeconomic policy

[6]See Miranda Xafa, Roger P. Kronenberg, and Joslin Landell-Mills, "The European Community's Trade and Trade-Related Industrial Policies," IMF Working Paper 92/94 (November 1992).

[7]In addition, the EC has association agreements with a number of countries, including Cyprus and Turkey.

harmonization, brought forward the elimination of all quantitative restrictions to July 1990.

The Canada-United States Free Trade Agreement (CUSTA), ratified in 1989, formed a free trade area entailing bilateral elimination of tariffs in several industrial sectors over ten years, a specific set of agreements concerning trade in agricultural products and automobiles, and procedures for settling disputes concerning antidumping policies and countervailing duties.[8] NAFTA, the recently negotiated North American Free Trade Agreement, would cover Canada, the United States, and Mexico. It amends some of the provisions of CUSTA and provides for separate agreements on agriculture. NAFTA would entail the eventual elimination of both tariff barriers—which are already low between the United States and Mexico—and the high nontariff barriers between its members. If ratified, NAFTA will represent the first major regional arrangement to include a combination of industrial and developing countries in the Americas.

During the past three decades there have been many regional agreements among developing countries. In sub-Saharan Africa, all countries after independence entered into one or more regional agreements from the late 1960s to the early 1980s. Very few of these were fully implemented, however, and in general they have not attained their original goals. One of the most extensive agreements in West Africa is the Economic Community of Western African States (ECOWAS)—formed in 1975—with 16 members, the largest being Nigeria. It envisaged the creation of a common market with a phased reduction of trade barriers and their complete elimination by 1989, the establishment of a common external tariff by 1994, and fiscal and monetary harmonization. Because of significant economic and political differences, however, even basic trade liberalization has not occurred. A second arrangement in West Africa, the Communauté Economique de L'Afrique de l'Ouest (CEAO, or West African Economic Community), was negotiated in 1973 to maintain the monetary and economic cooperation already established. A unique feature of this arrangement was a community development fund created to compensate members for the loss of tariff revenues arising from tariff preferences among members. The CEAO made only limited headway in removing restrictions on intraregional trade, although the members continued to operate under the CFA franc zone monetary arrangement.

In central Africa, the Central African Customs and Economic Union (UDEAC) was created in 1964 and modified in 1974. It envisaged an economic union with a common external tariff and no intra-union trade barriers. The effectiveness of the union has been reduced, however, by the persistence of country-specific levies and by the proliferation of measures that have effectively increased tariff differentiation. In East and southern Africa, the most important arrangement is the Preferential Trade Area for Eastern and Southern African States (PTA), which was founded in 1981 and now comprises 19 countries. Its original goal was the ultimate establishment of an economic union, with the creation of a preferential trade area by 1992 as a first step toward that goal. The negotiations, however, stalled owing to lack of agreement about products to be selected for preferential treatment, rules of origin, and other issues. As a result, the target date for effective liberalization has been shifted to the year 2000.

Finally, the Southern African Customs Union (SACU), comprising South Africa, Botswana, Lesotho, Swaziland, and Namibia, is the oldest and broadest customs union in Africa. Goods and factor markets are well integrated within SACU, and there is a common external tariff. All SACU members, except Botswana, are also members of the Rand Monetary Area, with the South African central bank acting as the central bank for the whole area.

In Latin America, the Latin American Free Trade Association (LAFTA) and the Central American Common Market (CACM) were both initiated in 1960. LAFTA's goal of establishing a free trade area within twelve years was not achieved, mainly because the then import-substitution model of development was not conducive to the regional trade arrangement's goals. In 1980 LAFTA was superseded by the Latin American Integration Association (LAIA), which provided for a greater possibility of partial agreements among some of the members; there have been several of these in recent years (Table 30). The CACM had among its objectives the establishment of a common external tariff within five years, followed by convergence to a common market and, eventually, cooperation in monetary and fiscal policies. Only very limited progress was made in this direction because of problems associated with different economic conditions in the member countries, leading in 1980 to the organization becoming a political rather than an economic forum. The Andean Pact in 1969 and the Caribbean Common Market (CARICOM) in 1973[9] also envisaged the eventual elimination of

[8]These are extensively discussed in John Whalley, "Regional Trade Arrangements in North America: CUSTA and NAFTA," in *New Dimensions in Regional Integration*, edited by Jaime de Melo and Arvind Panagariya (Cambridge and New York: Cambridge University Press, 1993, forthcoming).

[9]The CARICOM agreement was signed by Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Monserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

Table 30. Recent Initiatives in Regional Trade Arrangements

	Objectives
EC Single Market Program (1986)	Common market by January 1993
EC Maastricht Treaty (1991)	Closer economic integration and eventual monetary and political union
European Economic Area (1992)	To extend most provisions of EC single market to EFTA by summer 1993
Turkey-EFTA (1992)	Free trade area by 1995; subject to discussion
Chile-Mexico (1991)	Free trade area by 1996
Argentina-Brazil-Paraguay-Uruguay (MERCOSUR, 1991)	Common market by 1995
Mexico-Central America (1991)	Free trade area by 1996
Colombia-Mexico-Venezuela (1991)	Free trade area by 1995
Southern African Development Community (1992)	Free trade area and sector cooperation; protocol for cooperation to be finalized
EFTA-Czech Republic (1992) -Slovak Republic (1992) -Poland (1992) -Romania (1992) -Hungary (1993)	Bilateral free trade agreements providing for progressive trade liberalization during the next decade
EC-Czech Republic (1991) -Slovak Republic (1991) -Hungary (1991) -Poland (1991) -Romania (1993) -Bulgaria (1993)	Bilateral association agreements providing for trade liberalization during the next decade
Czech Republic-Slovak Republic-Hungary-Poland (1992)	Free trade area by 2001

Source: OECD, "Regional Trade Agreements," Annex to *The Implications of Growing Regional Integration* (Paris: September 1992); and IMF staff.

tariff barriers, the harmonization of economic policies, and, in the case of CARICOM, the establishment of a common market. The implementation of the requisite measures was modest, and—like the LAFTA and CACM—these agreements were substantially revised in the 1980s.[10]

In 1991, two agreements were reached in Latin America that promise more substantial trade liberalization than has occurred under previous regional trading arrangements. These are the Southern Cone Common Market (MERCOSUR), comprising Argentina, Brazil, Paraguay, and Uruguay, and the renewal of the Andean Pact. MERCOSUR's main goal is to establish a common market by the end of 1994. The reduction of intraregional tariffs has progressed as planned, although the structure of external tariffs has not yet been defined. The revival of the Andean Pact started with a free trade area among Bolivia, Colombia, and Venezuela and was later expanded to include Ecuador and Peru. It has since been extended to a customs union.

The only formal arrangement in the Asian region is the Association of South East Asian Nations (ASEAN), originally (1967) comprising Indonesia, Malaysia, the Philippines, Singapore, and Thailand, and later extended to Brunei. Some preferential tariffs were implemented, but considerable trade barriers still remain because of limited concessions by its member countries, and intra-ASEAN trade as a share of the total trade of its members has remained virtually constant, although recently intra-trade has been a growing factor in total ASEAN trade. A number of other arrangements, including the East Asian Economic Group, have been proposed in recent years, but there have been no formal agreements.

[10]See Julio Nogues and Rosalinda Quintanilla, "Latin America's Integration and the Multilateral Trading System," in *New Dimensions in Regional Integration*, edited by Jaime de Melo and Arvind Panagariya (Cambridge and New York: Cambridge University Press, 1993, forthcoming).

Economic Effects of Regional Arrangements

The formation of a regional trading arrangement alters tariffs and trade preferences and thereby changes relative prices and patterns of consumption and production. There are two main effects of such an arrangement.[11] The lowering of barriers among members leads to the substitution of inefficient domestic production by efficient (regional) partner country production; this "trade creation" raises the welfare of the members and of the world as a whole. However, lowering intraregional barriers leaves relatively high barriers on nonmembers, which leads to a substitution of efficient third-party production by inefficient (regional) partner country production; this "trade diversion" reduces the welfare of members and nonmembers.[12] Whether the net effect is a gain or loss depends on the size of trade creation relative to trade diversion. Trade creation can in general be expected to be high when the regional trade arrangement is characterized by members at similar levels of development, low transport costs, an already high share of intraregional trade, and low common external protection.[13]

Regional arrangements can also improve welfare by increasing the size of the market, which allows economies of scale to be exploited and increases competition. There may also be welfare gains from terms of trade improvements arising from increased market power vis-à-vis nonmembers. The cost reductions among member countries can, however, aggravate the diversion of trade from nonmember countries.[14] There is also the possibility of initially higher unemployment during trade liberalization as resources are reallocated.

In addition to the above static effects, such arrangements can also have important dynamic effects on the growth of output.[15] These arise from the expansion of investment, increased expenditures on research and development, and technological innovations that follow increased trade flows. Higher capital investment also boosts the returns to skilled labor by improving productivity, which in turn increases accumulation of human capital, thus raising growth further. In common markets, labor mobility also increases productivity and growth. Regional arrangements between developing and industrial countries may benefit the former by improving the credibility of policies, thereby fostering a more stable macroeconomic environment, as well as by encouraging reforms that would be politically difficult to carry out unilaterally. These factors would both enhance the growth prospects of developing countries and aid development efforts more generally.

Performance of Regional Trade Arrangements

A large number of studies have attempted to estimate the economic effects of major regional trading arrangements. For the EC, trade creation—as measured by the decline in the share of consumption from domestic production and the rise in that from partner country production—has been significant. Intra-EC exports relative to total EC exports rose from 35 percent in 1960 to 60 percent in 1990 (Table 31), whereas the share for imports rose from 35 percent to 59 percent. This was partially offset by a decline in the share of imports from nonmember countries: the share of developing countries declined from 19 percent to 8 percent in 1990, and the share of other industrial countries dropped from 22 percent to 15 percent. Of course, only part of this is the result of the growing integration of EC economies; a significant part was the result of the reestablishment of pre-World War II European trading patterns. With this proviso, the extent of external trade barriers seems to have been important in this regard—the sectors in which barriers to nonmembers were lowered the most—chiefly manufacturing—were also those in which trade creation was most apparent. However, protected sectors have experienced trade diversion. (Marked regionalization of trade can occur, however, even without any formal regional arrangement, as shown by the rapid growth of trade in East Asia in the 1980s; Table 32.)[16] In the case of agriculture, intra-EC prices have been set far above world prices, imposing costs on domestic consumers. In addition,

[11]See the classic study by Jacob Viner, *The Customs Union Issue* (New York: Carnegie Endowment for International Peace, 1950).

[12]Welfare is also adversely affected by arrangements that enable the protection of uncompetitive sectors (agriculture, steel) under the guise of industry harmonization, by guaranteeing markets, and by allocating resources for subsidies and other support.

[13]For a detailed discussion of the economic costs and benefits, see de la Torre and Kelly, *Regional Trade Arrangements*. See also Andre Sapir, "Regional Integration in Europe," *Economic Journal*, Vol. 102 (November 1992), pp. 1491–1506.

[14]See W. Max Corden, "Economies of Scale and Customs Union Theory," *Journal of Political Economy*, Vol. 80 (1972), who refers to this as trade suppression.

[15]Richard E. Baldwin, "Measurable Dynamic Gains from Trade," *Journal of Political Economy*, Vol. 100 (February 1992), pp. 162–74.

[16]Japan has served as an important market for East Asian exports, especially from the four newly industrializing economies (NIEs; Korea, Taiwan Province of China, Hong Kong, and Singapore) and China, and has increased its exports to them. The NIEs, in turn, have sharply increased their trade with China; production has shifted from Japan and the NIEs to other East Asian countries and China to take advantage of low labor costs.

Table 31. Intraregional Exports and Share in World Exports of Regional Trade Arrangements[1]
(In percent)

	Founded	1960	1970	1975	1980	1985	1990
ANZCERTA	1983	5.7	6.1	6.2	6.4	7.0	7.6
		(2.4)	(2.1)	(1.7)	(1.4)	(1.6)	(1.5)
EC	1957	34.5	51.0	50.0	54.0	54.5	60.4
		(24.9)	(39.0)	(35.9)	(34.9)	(35.6)	(41.4)
EFTA	1960	21.1	28.0	35.2	32.6	31.2	28.2
		(14.9)	(14.9)	(6.3)	(6.1)	(6.3)	(6.8)
Canada-U.S. FTA (CUSTA)	1989	26.5	32.8	30.6	26.5	38.0	34.0
		(21.9)	(20.5)	(16.8)	(15.1)	(16.7)	(15.8)
ASEAN	1967	4.4	20.7	15.9	16.9	18.4	18.4
		(2.6)	(2.1)	(2.6)	(3.7)	(3.9)	(4.3)
Andean Pact	1969	0.7	2.0	3.7	3.8	3.4	4.6
		(2.9)	(1.6)	(1.6)	(1.6)	(1.2)	(0.9)
CACM	1961	7.0	25.7	23.3	24.1	14.7	14.8
		(0.4)	(0.4)	(0.3)	(0.2)	(0.2)	(0.1)
LAFTA/LAIA	1960/1980	7.9	9.9	13.6	13.7	8.3	10.6
		(6.0)	(4.4)	(3.5)	(4.2)	(4.7)	(3.4)
ECOWAS	1975	. . .	3.0	4.2	3.5	5.3	6.0
		. . .	(1.0)	(1.4)	(1.7)	(1.1)	(0.6)
PTA	1987	. . .	8.4	9.4	8.9	7.0	8.5
		. . .	(1.1)	(0.5)	(0.4)	(0.3)	(0.2)

Source: Jaime de Melo and Arvind Panagariya, *The New Regionalism in Trade Policy* (Washington: World Bank and Centre for Economic Policy Research, December 1992).

[1]Share of intraregional exports in total regional exports; share of regional exports in total world exports is shown in parentheses.

the heavy subsidization of exports under the common agricultural policy has depressed world prices and driven efficient producers (including those in developing countries) out of business.

The consensus is that, overall, trade creation effects have been much greater than trade diversion effects.[17] Integration has led to significant economies of scale, an improvement in the rate of investment, greater capital and labor productivity, and some terms of trade gains. With the static and dynamic effects taken into account, it has been estimated that during 1961–72 EC integration contributed to higher growth in nearly all member countries—particularly in Belgium, Luxembourg, and the Netherlands, where integration may have accounted for nearly half the growth during this period. During the 1970s, these effects continued to be substantial and positive and may have boosted growth by over ½ of 1 percentage point a year in several EC countries. These estimates imply that, for the EC as a whole, the level of real GDP was around 6 percent higher in 1981 than it would have been without integration.[18] The completion of the single market may further raise growth in the medium term, by between ¼ of 1 percentage point and 1 percentage point a year according to one estimate.[19] These benefits are broadly consistent with the Cecchini Report, which estimated that, in the medium term, increased integration might raise GDP in the EC by nearly 5 percent and boost employment by about 1.8 million jobs.[20]

[17]See Bela Balassa, "Trade Creation and Diversion in the European Common Market," in *European Economic Integration*, edited by Bela Belassa (Amsterdam and New York: North-Holland, 1975); and A. Jacquemin and A. Sapir, "European Integration or World Integration?" *Weltwirtschaftliches Archiv*, Vol. 124, No. 1 (1988), pp. 127–39.

[18]These estimates are drawn from A.J. Marques Mendes, *Economic Integration and Growth in Europe* (London and Wolfeboro, New Hampshire: Croom Helm, 1987).

[19]Richard E. Baldwin, "The Growth Effects of 1992," *Economic Policy*, Vol. 4 (October 1989), pp. 248–81; see also David T. Coe and Thomas Krueger, "Why Is Unemployment So High at Full Capacity? The Persistence of Unemployment, the Natural Rate, and Potential Output in the Federal Republic of Germany," IMF Working Paper 90/101 (October 1990); and David T. Coe and Reza Moghadam, "Capital and Trade as Engines of Growth in France: An Application of Johansen's Cointegration Methodology," IMF Working Paper 93/11 (February 1993).

[20]Pablo Cecchini, with Michel Catinat and Alexis Jacquemin, *The European Challenge, 1992: The Benefits of a Single Market* (Aldershot, Hants, England and Brookfield, Vermont: Wildwood House, 1988).

Table 32. East Asia: Intraregional Trade
(In percent)

Exports as a Share of Total Exports	Japan	NIEs[1]	ASEAN	China	Total to East Asia
From/to					
Japan					
1980	. . .	11.9	14.7	3.9	30.5
1990	. . .	16.2	11.2	2.1	29.5
NIEs					
1980	10.7	5.8	8.6	2.2	27.3
1990	12.2	8.5	8.0	9.7	38.4
ASEAN					
1980	29.6	7.0	18.2	—	54.8
1990	19.6	10.5	19.9	—	50.0
China					
1980	23.9	24.3	0.1	. . .	48.3
1990	14.0	39.5	0.1	. . .	53.6
Total East Asia					
1980	11.4	10.2	11.8	2.6	36.0
1990	8.8	15.0	11.4	4.1	39.3
Imports as a Share of Total Imports	**Japan**	**NIEs[1]**	**ASEAN**	**China**	**Total from East Asia**
To/from					
Japan					
1980	. . .	4.4	15.0	3.1	22.5
1990	. . .	10.9	11.5	4.0	26.4
NIEs					
1980	24.2	5.2	7.8	6.9	44.1
1990	22.7	8.7	7.1	12.8	51.3
ASEAN					
1980	29.9	7.7	20.3	2.7	60.6
1990	20.1	10.5	17.3	2.2	50.1
China					
1980	25.4	6.3	3.5	—	35.2
1990	11.1	36.7	4.1	—	51.9
Total East Asia					
1980	11.7	5.4	13.8	3.6	34.5
1990	12.9	9.2	10.9	6.0	42.1

Source: Ippei Yamazawa, "On Pacific Economic Integration," *Economic Journal*, Vol. 102 (November 1992), pp. 1519–29.
[1]Newly industrializing economies (excluding Singapore).

In the case of EFTA, there was a dramatic increase in intra-area trade between 1963 and 1972, reflecting the removal both of impediments to trade between members and of the barriers on exports to the EC.[21] The positive welfare effects of trade creation in this period, however, may have been substantially attenuated by the negative effects of trade diversion (mainly affecting trade with the EC). In the period between 1975 and 1990, with changed EFTA membership, there was a significant decline in the intra-EFTA trade share (see Table 31). Although the share of imports from the EC also continued to decline in all EFTA countries, there was a sharp expansion in exports to the EC. While the formal trade barriers on EFTA-EC trade are quite low already, the move to the European Economic Area may considerably enhance competitive forces. It has been suggested that this could lead to a one-time gain of around 3/4 of 1 percent of 1992 GDP.[22]

[21]Emil Ems, "The Role of EFTA in European Economic Integration," *EFTA Occasional Paper* 40 (Geneva: European Free Trade Association, 1992). These conclusions are, however, sensitive to the precise data used. For instance, IMF World Trade System data suggest no significant trade creation or diversion effects from integration.

[22]Jan I. Haaland and Victor D. Norman, "Global Production Effects of European Integration," CEPR Discussion Paper 669 (London: Centre for Economic Policy Research, March 1992).

In the case of CUSTA, estimates had suggested that Canada's real GDP might rise by as much as 9 percent in the long run, in part because of sharp productivity gains arising from economies of scale.[23] This is now regarded as optimistic, given the already low tariffs on U.S.-Canadian trade and the exclusion of some key sectors. Growth of U.S.-Canadian trade and investment actually slowed since completion of the CUSTA negotiations in 1987, because the Canadian economy was more strongly affected by macroeconomic fluctuations than by bilateral tariff removal.[24] The liberalization of trade under NAFTA will probably confer net welfare gains on all three members, although the main beneficiary is likely to be Mexico, which is expected to gain by about 3½ percentage points of GNP in the medium term (allowing for capital inflows, this gain may rise to over 5 percent).[25]

Regional arrangements among developing countries have generally been less successful, in part because the promised liberalizations were not carried out. Even when they were, trading arrangements often involved relatively undiversified economies dominated by resource-based production, limited intraregional trade before the formation of the trade agreement, and high external protection. These factors led to limited trade creation and high trade diversion, resulting in small welfare gains or even losses. It is therefore not surprising that the agreements were often abandoned, although cultural and political differences between members also played a role.

In Africa, none of the arrangements except SACU has achieved any noticeable degree of trade integration; the share of intragroup trade in almost all groupings has been both very small and either stagnant or actually falling between 1970 and 1990. There were several reasons why trade barriers proved so difficult to remove. First, there was a reliance on import substitution policies, which often led to the creation of inefficient industries behind high protective barriers and overvalued exchange rates. Since adoption of realistic exchange rates was resisted because of potential short-term inflationary effects, trade liberalization, including intraregional trade liberalization, appeared even less viable. Second, tariff revenues formed an important part of government budgets in Africa, and, in general, it was considered difficult to replace them. Third, given that the costs and benefits of regional integration differed markedly for different member countries, successful schemes required a satisfactory compensation mechanism, which proved difficult to negotiate.

The experience in Latin America has been broadly similar. The original Andean Pact pursued a strategy of import substitution, and industries were allocated to different members in an effort to exploit economies of scale. However, intraregional trade did not grow appreciably and, in common with the CACM, disagreements over the broad orientation of the organization led to its abandonment. Chile withdrew in 1976 largely because of political factors. (Chile's liberalization started in 1973.)

Despite these failures, many developing countries remain interested in forming regional trading arrangements or in joining existing ones. For instance, there is considerable enthusiasm for further regional integration in Africa. Properly structured, and in conjunction with supportive domestic economic policies, such initiatives could prove beneficial, given the problem of small and fragmented domestic markets and the need to promote efficient industrialization. But, in part because of differing economic conditions among members and disagreements about objectives, regionalism remains an attractive, albeit elusive, option for many countries.

In Latin America the circumstances appear to be somewhat different. As the United States was negotiating the NAFTA with Mexico, it signaled its readiness to negotiate a similar agreement with Chile. The United States also sent a strong signal to other countries in the region that it would prefer to enter free trade agreements with groups of countries already organized to remove trade barriers among themselves. This position implies encouragement for those countries to enter outward-oriented arrangements with other countries in the region.

In East Asia, which has benefited far more from an open global trading system than it could have done from a world divided into regional blocs, there is a concern that, as NAFTA and the EC continue to enlarge, countries in the region may be adversely affected through terms of trade deterioration and a loss of markets. This concern has led to suggestions of an Asian regional trading bloc, based in part on existing agreements among some of the countries, but most of the countries in the region continue to emphasize their commitment to a nondiscriminatory multilateral trading system.

Regional Arrangements and Multilateral Trade

Regardless of the benefits and costs of regional trading arrangements to their members, it is clear that, from a global perspective, full multilateral free trade would be preferable. This raises the

[23]Richard G. Harris, *Trade, Industrial Policy, and Canadian Manufacturing* (Toronto and Buffalo, New York: University of Toronto Press, 1984).

[24]Canada, Department of Finance, "The Canada-U.S. Free Trade Agreement: An Economic Assessment" (Ottawa, 1988).

[25]Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern, "North American Integration," *Economic Journal*, Vol. 102 (November 1992), pp. 1507–18.

longer-term issue of how the establishment of regional arrangements is likely to affect progress toward global trade liberalization. On the one hand, regional arrangements may prove to be a steppingstone to global free trade. By reducing trade barriers among members, successful trade arrangements have already generated the sort of structural change that would follow from multilateral free trade. Indeed, some regional agreements have gone well beyond the tariff-cutting exercises of multilateral negotiations, incorporating agreements in other areas, such as product standards that may also improve chances of a global agreement.

On the other hand, there is a distinct risk that regional trading blocs may imperil multilateral free trade. They may cause a shift in priorities from multilateralism to narrower regional concerns, divert skills and resources, and are likely to harm smaller countries outside the regional agreements. The economic gains already captured from regional arrangements may be deemed sufficient, reducing the incentive to negotiate with members of other trading blocs and increasing the danger of trade frictions. This prospect seems all the more likely during a period of sluggish growth and rising unemployment, and to the extent that regional arrangements are viewed by their members as increasing their collective clout in world economic affairs. Moreover, special interest groups (in agriculture and textiles, for instance) may find it easier to justify protection in the context of a regional arrangement than they would under multilateral rules of the sort promoted by the GATT. Historical experience with the beggar-thy-neighbor policies of the 1930s and the import substitution strategy of regional arrangements in Latin America in the 1960s suggests precedents for regional blocs to become inward looking.

A number of mechanisms have been suggested to ensure that regionalism complements rather than substitutes for multilateralism.[26] First, there have been suggestions that Article 24 of the GATT, which sets the rules for the creation of regional arrangements, could be modified to allow only customs unions, which require a common external tariff, and to rule out free trade areas, which allow countries to retain national tariffs vis-à-vis outside countries. Because many tariffs are "bound" in the GATT—that is, they are locked in, and cannot be raised without offsetting compensation—this could mean that if more liberal members can force others to lower their tariffs, all tariffs could come down to the lowest level prevailing in the union at the time of its formation and, if then bound, create a greater presumption that there will be net trade creation upon formation of the customs union.[27] A lowering of tariffs, in fact, occurred when Greece, Portugal, and Spain joined the EC. There is, however, the risk that liberal members would be forced to raised tariffs, leading to trade diversion. A common external tariff also eliminates the need for rules of origin, which are often complex and can become instruments of protection. Moreover, under a customs union, special interests would have to appeal to the union as a whole, rather than to national authorities.

A second mechanism that has been suggested to ensure the outward orientation of regional trade arrangements is to strengthen GATT Article 6 and Article 19 to minimize the risk of recourse to nontariff barriers, including antidumping actions and voluntary export restraints, against countries outside the regional arrangement. Finally, the contribution of regional trade arrangements to multilateral liberalization will be considerably enhanced if multilateral rules are strengthened, especially in new areas such as investment and services, to anchor regional arrangements and minimize their incompatibility with open, nondiscriminatory trade.

[26]See Jaime de Melo, Arvind Panagariya, and Dani Rodrik, "The New Regionalism in Trade Policy: A Country Perspective," in *New Dimensions in Regional Integration*, edited by Jaime de Melo and Arvind Panagariya (Cambridge and New York: Cambridge University Press, 1993, forthcoming).

[27]It could be argued, however, that as long as enforcement is less than perfect, imports into a free trade area are likely to come through the country with the lowest tariff level, thus exerting pressure on countries with higher tariffs to lower their tariffs.

Annex IV

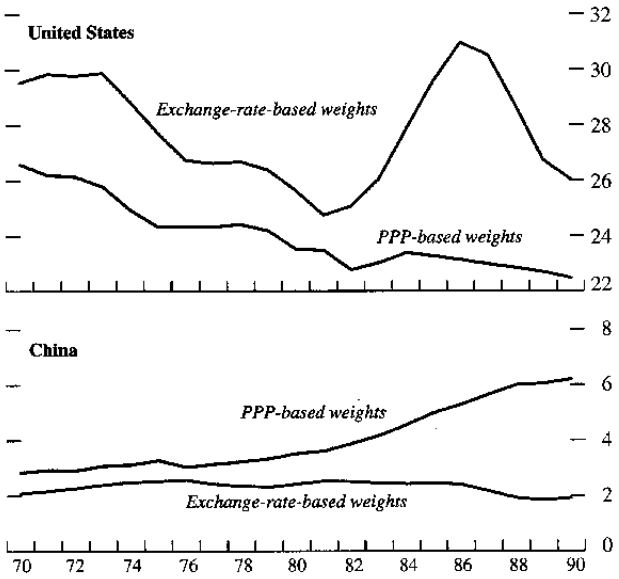
Revised Weights for the *World Economic Outlook*

The weights used in the *World Economic Outlook* to aggregate output growth and other economic indicators for individual countries into regional or group aggregates are the individual country's GDP as a share of world, regional, or group GDP.[1] To calculate these weights, it is necessary first to convert each country's GDP into a common currency. In the past, market exchange rates have been used to convert individual country GDPs into U.S. dollars. But because market exchange rates may deviate significantly from their purchasing power parity (PPP) equivalents—and there is considerable evidence that this is the case[2]—these weights may not be accurate measures of the relative economic size of countries.

Market-Exchange-Rate-Based Weights Versus PPP-Based Weights

Market exchange rates may not reflect their PPP equivalents for a variety of reasons. For example, market rates may be distorted by speculative bubbles, exchange market intervention, asymmetric speed of adjustment in goods and asset markets, or macroeconomic shocks. These factors can explain why currencies may exhibit short deviations or long swings away from their PPP values. In the case of developing countries, market exchange rates may deviate from their PPP values because of differences in the relative price of traded versus nontraded output.[3] For example, the price of services in

Chart 32. Exchange-Rate-Based and PPP-Based Weights
(In percent of world GDP)



This annex was prepared by David T. Coe.

[1]Except for unemployment rates and employment growth, which use labor force weights. The weighting conventions are described in the introduction to the Statistical Appendix.

[2]See, for example, Jacob A. Frenkel and Michael L. Mussa, "The Efficiency of Foreign Exchange Markets and Measures of Turbulence," *American Economic Review*, Vol. 70 (May 1980), pp. 374–81; and Ronald MacDonald, "Floating Exchange Rates," in *The New Palgrave Dictionary of Money and Finance*, edited by Peter Newman, Murray Milgate, and John Eatwell (London: Macmillan, 1992; New York: Stockton, 1992).

[3]This is the Balassa-Samuelson thesis of biased productivity growth, which states that developing countries—because of productivity differences in the tradables and nontradables sectors, and because of larger nontradable sectors compared with industrial countries—tend to have exchange rates that are

developing countries is typically very low in foreign currency terms, and this implies a negative bias in exchange-rate-based estimates of living standards. In some countries, of course, market-determined exchange rates may not even exist.

To the extent that market exchange rates deviate from PPPs, estimates of regional and world growth calculated with exchange-rate-based weights can be misleading. The difference between exchange-rate-based weights and PPP-based weights for the United States and China is shown in Chart 32. As a result of the large changes in exchange rates during the 1980s, the exchange-rate-based weight for the United States increases from about 25 percent in 1981 to 31 percent in 1985 and then falls back to 25 percent in 1990. The PPP-based weight, by contrast, shows a slight decline because average growth in the United States was slightly less than in the rest of the world over this period. For China, despite the fact that average real growth in China during 1970–90 was more than double average growth of the world economy—7½ percent compared with 3¼ percent—the 1990 exchange-rate-based weight is smaller than it was in 1970 because of the substantial depreciation of the yuan over this period.[4] The estimated PPP-based weight, however, shows a steady increase in China's weight, reflecting China's relatively rapid growth.

Implications of PPP-Based Weights

To obtain a more accurate measure of the relative sizes of economies, it has been decided to adopt PPP-based weights for the purpose of aggregating individual country data in the *World Economic Outlook*.[5] The exchange-rate-based weights and the PPP-based weights are compared in Table 33. The most important difference is the substantial increase in the weight of the developing countries as a group and the corresponding adjustment in the weight of the industrial countries.[6] Given that the developing

Table 33. Comparison of Exchange-Rate-Based Weights and PPP-Based Weights[1]
(In percent of world GDP)

	Exchange-Rate-Based Weights	PPP-Based Weights
World	**100.00**	**100.00**
Industrial countries	**73.21**	**54.44**
Major industrial countries	63.06	46.86
United States	26.07	22.47
Japan	14.61	7.63
Germany[2]	6.23	4.26
France	4.99	3.50
Italy	4.38	3.39
United Kingdom	4.19	3.45
Canada	2.58	2.16
Other industrial countries	10.15	7.58
Memorandum		
European Community	24.81	18.51
Developing countries	**17.71**	**34.38**
By region		
Africa	1.72	4.05
Asia	7.29	17.67
Middle East and Europe	4.28	4.46
Western Hemisphere	4.42	8.21
Memorandum		
Four newly industrializing Asian economies (NIEs)	2.00	2.39
By analytical group		
Fuel exporters	5.26	8.04
Nonfuel exporters	12.45	26.35
Net creditors	3.33	2.39
Net debtors	14.38	31.99
Countries in transition	**9.07**	**11.18**
Former Soviet Union[3]	7.53	8.31
Central Europe	1.53	2.85

[1]The exchange-rate-based GDP weights are a three-year moving average for 1987–89; the PPP-based weights are for 1990.

[2]Exchange-rate-based weights for west Germany only; PPP-based weights are for unified Germany.

[3]The exchange-rate-based weights are derived from estimates of approximate PPP exchange rates.

undervalued relative to their PPP equivalents. See Paul Hallwood and Ronald MacDonald, *International Money: Theory, Evidence, and Institutions* (Oxford and New York: Blackwell, 1986); and Anne-Marie Gulde and Marianne Schultze-Ghattas, "Aggregation of Economic Indicators Across Countries: Exchange Rate Versus PPP-Based GDP Weights," IMF Working Paper 92/36 (May 1992).

[4]This point was noted in a November 28, 1992 survey of China in *The Economist*.

[5]The PPP-based weights are derived from PPP estimates of GDP from the International Comparison Program (ICP), supplemented by World Bank and IMF staff estimates for the countries not covered by the ICP. The PPP weight for China is not taken from the ICP but is based on the estimate by J.S. Taylor, "Dollar GNP Estimates for China," (unpublished; Washington: United States Bureau of the Census, Center for International Research, 1990). The ICP is coordinated by the United Nations and is supported by the World Bank, the OECD, and other international agencies; estimates of PPP estimates of per capita GDP are regularly published in the World Bank's *World Development Report* (New York: Oxford University Press). Professors Robert Summers and Alan Heston have been associated with the ICP for nearly two decades; see their paper, "The Penn World Tables (Mark 5): An Expanded Set of International Comparisons, 1950–88," *Quarterly Journal of Economics*, Vol. 106 (May 1991), pp. 327–68.

[6]The relatively small change in the weight for the countries in transition reflects the fact that, because it was not possible to

Table 34. Differences Between Aggregate Real GDP Growth Rates: PPP-Based Weights Versus Exchange-Rate-Based Weights
(In percentage points)

	Average 1983–92	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
World	**0.4**	**0.3**	**0.3**	**0.3**	**0.5**	**0.5**	**0.4**	**0.1**	**−0.1**	**0.5**	**1.0**
Industrial countries	**−0.1**	**0.1**	—	—	—	—	**−0.1**	**−0.1**	**−0.3**	**−0.3**	—
Seven major industrial countries	−0.1	0.1	—	—	—	—	−0.1	−0.2	−0.3	−0.3	—
Other industrial countries	0.1	−0.1	−0.2	—	0.1	0.1	0.1	0.1	—	0.1	0.1
European Community	—	—	—	—	—	0.1	—	—	−0.1	—	—
Developing countries	**0.8**	**0.9**	**1.0**	**0.7**	**1.1**	**0.9**	**1.5**	**0.3**	—	**1.0**	**0.4**
Africa	0.3	0.9	0.9	−0.5	0.1	0.5	0.5	0.2	0.7	0.1	−0.2
Asia	0.1	−0.3	−0.1	0.3	−0.1	−0.1	0.1	−0.1	−0.1	—	1.1
Middle East and Europe	1.4	1.4	1.7	1.0	3.2	2.7	2.6	−0.4	−1.2	1.6	0.9
Western Hemisphere	0.4	−0.2	0.2	0.4	0.3	0.3	0.2	0.6	0.6	0.2	0.5
Four NIEs	—	0.1	—	—	—	—	0.2	−0.1	0.2	—	−0.1
Fuel exporters	1.0	0.7	1.6	0.4	1.6	1.0	2.1	0.5	−0.8	2.6	−0.7
Nonfuel exporters	0.4	0.4	0.2	0.4	0.1	0.1	0.6	0.3	0.4	0.2	1.2
Net creditors	0.5	1.9	1.7	0.4	2.9	1.2	2.9	0.5	−1.3	0.7	3.8
Net debtors	0.6	0.9	0.5	0.4	0.2	0.4	0.8	0.4	0.8	1.4	0.5
Countries in transition	**0.1**	—	—	—	—	—	**−0.3**	**−0.2**	**−0.5**	**−0.3**	**1.5**
Former Soviet Union	0.1	—	—	—	—	—	—	—	—	0.1	0.6
Central Europe	0.6	0.2	—	—	—	0.1	0.2	0.4	−0.2	0.4	4.0

countries account for about 77 percent of world population, the exchange-rate-based weights imply a tremendous inequality in the distribution of world per capita income.[7] The PPP estimates of per capita income, and hence the PPP-based weights, more accurately measure the true distribution of real world income, in part because they incorporate a more realistic valuation of nontraded output. Among the industrial countries, the countries in transition, and each of the developing country regions, the rankings of the exchange-rate-based weights and the PPP-based weights are broadly similar.

The implications for the growth of world output, regional output, and the output of other groups of countries are shown in Table 34. In general, the PPP-based weights imply somewhat stronger growth of the world economy—an average of almost ½ of 1 percent a year over the 1983–92 period—reflecting generally faster growth in the developing countries than in the industrial countries. Growth in the Middle East and Europe region is markedly higher with the PPP-based weights mainly because the weight of Turkey, which has grown rapidly, increases. The stronger growth in Asia in 1992 mainly reflects a substantially higher PPP-based weight for China.[8]

Although there is broad consensus in the economic profession about the appropriateness of using PPP-based weights to aggregate individual country estimates for growth and some other economic indicators, there are clearly purposes for which PPP-based weights or PPP exchange rates would not necessarily be appropriate.[9] It would not be appropriate, for example, to use PPP-based weights to aggregate measures of international trade and capital movements, which are transacted at market exchange rates, or data for external debt and debt service. Similarly, because of currency substitution, the growth of monetary aggregates and other financial variables will continue to be aggregated across countries using exchange-rate-based weights.[10] No single method of aggregating data to construct economic indicators across countries will be appropriate in all circumstances. There may be some types of economic analyses for which

calculate credible exchange-rate-based weights for the former Soviet Union, the previous weight was already based on approximate estimates of PPP exchange rates.

[7]Robert Lucas has argued that this inequality is "literally too great to be believed," see "On The Mechanics of Economic Development," *Journal of Monetary Economics*, Vol. 22 (July 1988), pp. 3–42.

[8]The substantial changes in the growth of the countries in transition in 1992 reflect the very large differences in growth rather than large changes in weights.

[9]A number of international organizations, including the OECD, use PPP-based weights in their statistical publications; although as yet none uses PPP-based weights in forecasting work, several organizations are considering doing so.

[10]The weighting conventions discussed in the introduction to the Statistical Appendix indicate which weights are used for specific variables.

aggregation of world income based on market exchange rates is appropriate.

One drawback to using PPP-based weights is that PPP surveys are done only every three to five years and do not cover all developing countries.[11] It is therefore necessary to extend the available PPP estimates over time, which is a fairly straightforward procedure, and also to estimate approximate PPP values for nonsurvey countries. Because PPP-based weights are derived from *estimates* of PPP rather than from *data* for exchange rates, currently available estimates—although acceptable for purposes of aggregation—may not necessarily be appropriate for country-specific operational purposes of, for example, the IMF or World Bank. Although the available PPP estimates can, inevitably, be criticized on a number of technical grounds, this is not an argument for continuing to use the highly volatile and potentially misleading exchange-rate-based weights. On the basis of considerable research and discussion, the IMF staff considers that any bias imparted by using the available estimates of PPP-based weights for the purposes of the *World Economic Outlook* is less than the bias resulting from using exchange-rate-based weights.[12] As better and more complete PPP estimates become available, they will, of course, be incorporated in the PPP-based weights used in the *World Economic Outlook*.

[11]Current plans envisage the inclusion in the 1993 ICP survey of more developing countries, including those in central Europe and some in the former Soviet Union.

[12]Various research projects have been undertaken, starting in 1989, to examine these issues: see Anne-Marie Gulde and Marianne Schulze-Ghattas, "Aggregation of Economic Indicators," and a forthcoming update of that paper in *Staff Studies for the World Economic Outlook*, World Economic and Financial Survey (IMF, 1993, forthcoming), which will present a detailed discussion of the weights used in the *World Economic Outlook*. See also Sultan Ahmad, "Regression Estimates of Per Capita GDP Based on Purchasing Power Parities," Policy Research Working Paper WPS 956 (Washington: World Bank, August 1992).