

German Monetary History in the Second Half of the Twentieth Century: From the Deutsche Mark to the Euro

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Starting in January 2002, citizens of the European Monetary Union (EMU) replaced their national currencies with the Euro, issued by the European Central Bank (ECB). Europeans created a new pan-European central bank as a symbol of a future united Europe. However, what historical process explains the broad monetary policy of the ECB, that is, its objective of price stability and its strategy for achieving that objective? The short answer is that its founders designed the ECB to look like the Bundesbank. How then did the Bundesbank evolve? To answer that question, I survey German monetary policy in the second half of the twentieth century.

I divide this history into three main sections.¹ The first treats the Bretton Woods system of fixed exchange rates. The second treats the floating exchange rate period that began in 1973. It chronicles the Bundesbank's ultimate decision to accord primacy to reducing inflation rather than unemployment. The last explains how the Bundesbank dealt with the pressures created by movement toward a single European currency.

The evolution of the Bundesbank into an institution now identified as a modern central bank is fundamental to the article. A modern central bank

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¹ An examination of the monetary policies that central banks pursue requires a framework for understanding their choice of objectives and the way that they achieve those objectives. The

determines the behavior of the price level exclusively through (indirect) control over the liabilities on its balance sheet (the monetary base). Conversely, a modern central bank eschews control over the price level through interference with price setting in individual markets. Specifically, modern central banks avoid controls such as exchange and capital controls, tiered exchange rates, quantitative credit controls, moral suasion directed at the price setting of private parties, direct wage and price controls, and so on.

Another theme of the article is how free markets restrict a country's choice of monetary arrangements. The system of fixed exchange rates required disruptive changes in the price level. Political pressures to avoid those changes in turn produced pressures for exchange controls. Ultimately, Germany's commitment to a free market economy pushed it to reject fixed exchange rates and adopt floating exchange rates. The Bundesbank came to embody the modern conception of a central bank when, in the 1980s, it demonstrated how to achieve price stability in a free market economy. That outcome contrasted starkly with German monetary experience in the first half of the twentieth century (Hetzel 2002).

To create the Bundesbank that came to epitomize a modern central bank, Germany had to travel a long road. When West Germany came into existence in 1949, the intellectual consensus in the West held that the depression arose out of a grand failure of the free market model (Hetzel 2002). Similarly, very few economists understood the price level as a monetary phenomenon, that is, something under the control of the central bank. Instead, professional and private opinion held that powerful labor unions and large corporations determined prices through their monopoly power. In this intellectual environment and against the backdrop of staggeringly high unemployment during the depression, there was unanimous political opposition within postwar Germany to an independent central bank (Buchheim 2002).

At the same time, there was a demand for monetary stability. That demand arose out of the prewar experience of inflation, first hyperinflation and then the suppressed inflation of the Third Reich. The memory was still recent of the 1948 currency reform that extinguished most of the savings held by Germans in currency and bank deposits. In between inflations was the deflation of the

quantity theory provides such a framework. Modern central banks create only paper money, not wealth. For that reason, ultimately all they can control is the price level—the money price of goods. The quantity theory explains the behavior of the price level based on the way that central banks create and destroy money.

A core implication of the quantity theory is that a central bank must choose between two roles for the price level. With a system of fixed exchange rates, the central bank must allow the price level to vary to produce the real terms of trade that equilibrates the balance of payments. That is, the internal price level must vary to price the country's exports in a way that achieves balance of its international payments. Alternatively, with a system of floating exchange rates, the price level varies to endow the nominal money stock with the real purchasing power the public desires. The rate of inflation then depends upon the trend rate of growth of money the central bank chooses.

depression. Germany accepted the postwar policy consensus that monetary stability required pegged, infrequently adjusted exchange rates. Policymakers attributed the depression in part to the competitive devaluations that countries imposed to stimulate their economies and to the associated financial instability arising from the speculative capital flows those devaluations engendered (Yeager 1976, 375). In response, the Western world designed the Bretton Woods system.

1. THE BRETTON WOODS SYSTEM OF PEGGED EXCHANGE RATES

In July 1944 at Bretton Woods, the victorious West designed a monetary system intended to substitute stable exchange rates for the disruptive changes in exchange rates that characterized the depression. However, in time that system itself became a source of instability. The system became a dollar standard in which U.S. monetary policy determined the inflation rates of the other member countries. Also, the system of pegged but adjustable exchange rates allowed those rates to move far from equilibrium. The resulting one-way bets on exchange rate changes recreated the hot money flows that the designers of the Bretton Woods system had hoped to banish. This section explains how, over a two-decade period, Germany went from a pegged to a floating exchange rate regime.

How Did the System Work?

With the end of price controls in June 1948, Germany moved dramatically toward an internal free market. However, Germany continued to manage its foreign trade through trade deals arranged bilaterally with foreign governments. In an open economy, managed trade requires significant government control of economic activity. In order to move toward free trade, Germany needed to abandon achievement of balance-of-payments equilibrium through managed trade and restrictions on trade and capital controls.

Once Germany adopted the pegged exchange rates of Bretton Woods, free trade required it to adjust its internal price level to price its export goods at competitive international levels. After the war, like other European countries, Germany experienced chronic trade deficits with the United States. Commentators assumed an indefinite dollar shortage. External trade balance with unchanged exchange rates would have required deflation by Germany.

The postwar assumption that governments had a responsibility to manage the economy to prevent high unemployment made such deflation impossible. A major point of discussion below is how the Bretton Woods system worked in the postwar period without forcing deflation on countries with trade deficits.

Faced with a requirement to deflate in order to achieve external balance, countries would undoubtedly have resorted to trade restrictions and capital controls. Such recourse would have made impossible the postwar trade liberalization that actually occurred.

The Bretton Woods system worked because of the behavior of its two largest members, the United States and Germany. With its extraordinarily large gold reserves, the United States could maintain an overvalued exchange rate and lose gold for a long period without reacting.² At the same time, Germany maintained an undervalued exchange rate by recycling its trade surpluses to its neighbors through capital exports and foreign aid. Not until the early 1970s did the inherent instability of the Bretton Woods system and conflicting domestic policies of its member countries cause the pegged exchange rate system to collapse.

A New Central Bank

After the war, Germany had no central bank.³ In its Western zones, the offices of the former Reichsbank assumed some of the responsibilities of a central bank. However, these banks could not issue currency and therefore constituted only the empty shell of a central bank. The political objective of preventing a return to a centrally organized banking system with interlocking links to large corporations motivated U.S. policy exclusively. The British had a more realistic attitude. They emphasized that economic integration required the existence of a note-issuing bank that could assure settlement of transactions on an economywide basis.

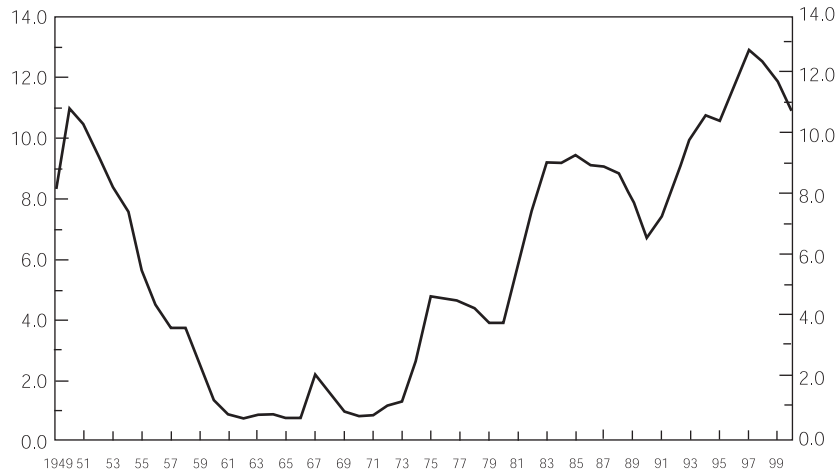
When the American and British occupation zones merged, British pragmatism prevailed. In March 1948, the Allies created the Bank deutscher Länder (BdL) to oversee the regional offices of the former Bundesbank. It possessed the power to issue currency. With the replacement of barter with monetary transactions after the June 1948 currency reform, the BdL became West Germany's central bank. The BdL possessed a governing structure modeled after the U.S. Federal Reserve System. The precedent of central bank independence set by this structure became impossible to reverse when Germany reorganized its central bank in 1957 to put it on a firm legal footing.

The Allied decree that established the BdL on 1 March 1948 required it "to stabilize the currency."⁴ The Bank emphasized that priority despite the rise in

² Given domestic price levels, an overvalued exchange rate yields an excess demand for imports relative to exports. Similarly, an undervalued exchange rate yields an excess of exports over imports. In the first case, a country with a fixed exchange rate loses official reserve balances. In the second case, it gains reserves.

³ The material in this and the following paragraph is from Buchheim (1999, Sections 3 and 4).

⁴ Holtfrerich (1999, 318). This paragraph draws on Holtfrerich (1999, Section 4).

Figure 1 German Unemployment Rate

Notes: Data are from “Bevölkerung und Erwerbstätigkeit im Deutschen Reich und in der Bundesrepublik Deutschland” *Bundesarbeitsblatt 7–8/1997*, pages 110–11, Bundesanstalt für Arbeit, Ministerium für Arbeit und Sozialordnung und eigene Berechnungen.

the unemployment rate from 4.2 percent in 1948 (Holtfrerich 1999, 328) to 11 percent in 1950 (Figure 1).⁵ From June 1948, the date of the currency reform, to October 1948, the cost of living rose by 14 percent.⁶ The BdL responded strongly to the inflation.⁷ The price level began to decline in 1949 and by June 1949 had reached its June 1948 level.

⁵ Giersch et al. (1992, Chapter 3) argue that the rise resulted from an influx of refugees from former German territories and from increases in worker productivity.

⁶ The inflation indicated the continued presence of a monetary overhang despite the drastic reduction in the units of circulating money. The inflation occurred despite the increase in demand for money implied by the more than 50 percent increase from June through December 1948 in the Allied index of bizonal industrial production (Buchheim 1999, 96).

⁷ It did so in a way determined by its quantitative (as opposed to interest rate) procedures for the control of bank deposits and credit. The need for quantitative procedures came from the fact that the discount rate of 5 percent set in June 1948 did not bind, as it was 2 percentage points above market rates (Holtfrerich 1999, Figure 3). Commercial banks possessed large amounts of excess reserves and did not borrow significantly from the BdL.

In fall 1948, the BdL tightened restrictions on credit extension by banks. The Allies wrote off 80 percent of the deposits that remained frozen after the June reform but had been designated for ultimate one-to-one conversion to deutsche marks (DMs). (They amounted to 50 percent of the former bank deposits.) Government surpluses also reduced bank reserves.

By the end of 1949, reductions in banks' excess reserves and in the discount rate to 4 percent put banks into the BdL's discount window. The resulting change in procedures from quantitative credit controls to indirect control through the bank rate marked an important step toward market rather than administrative rationing of credit.

Integrating Germany into the World Economy

The Allies maintained the old dollar-reichsmark exchange rate of 0.30, which overvalued the deutsche mark (DM). Similar overvaluations of other currencies relative to the dollar resulted in an autarkic system of international trade after World War II.⁸ Because their currencies were overvalued, the countries of Europe managed the trading of their residents so that transactions would balance bilaterally. By spring 1947, there were 200 bilateral agreements controlling trade in Europe alone. Importers had to obtain licenses, which limited total imports country by country. Governments made their imports conditional on another country's acceptance of their exports because they feared running short of the dollar reserves needed for essential food and fuel imports.

As a condition for aid, the United States insisted that European countries replace bilateral trade deals with free trade and multilateral clearing arrangements. Backed by \$350 million of Marshall Plan money, Western European countries agreed in September 1950 to create the European Payments Union (EPU).⁹ However, the EPU created no mechanism for eliminating overall payments imbalances.

Very quickly, the arrangements for the EPU came close to collapse because of German balance-of-payments deficits. With the outbreak of the Korean War in 1950, Germans, like Americans, tried to buy goods for fear inflation would resurge (Hetzel 2001; Holtfrerich 1999, 334; Yeager 1976, 413). Germany came under both foreign and domestic political pressure to control its imports of raw materials through a system of central administration and to reimpose price controls. "This was the last time that the essence of the liberal economic system which West Germany had adopted in mid 1948 was actually put in jeopardy" (Giersch et al. 1992, 101).

Germany's Minister of Economics, Ludwig Erhard, refused to abandon his free market reforms and predicted that his country's trade deficit would disappear. Despite opposition from Chancellor Adenauer, the Bundesbank raised interest rates (Marsh 1992, 152). Erhard's prediction came true. By spring 1951, Germany began to run trade surpluses with the EPU. Germany's

⁸ This paragraph and the next two summarize material in Yeager (1976, Chapter 21).

⁹ The multilateral clearing of EPU achieved a great simplification by removing the detailed government interventions necessary for bilateral clearing. By making the members jointly responsible for the credit of each member, the EPU allowed consolidation of a member's transactions into a single overall net claim on the EPU.

Whether overall the Marshall Plan encouraged free trade is unclear. Its dollar payments, most of which went to Britain, allowed countries to maintain overvalued exchange rates. Governments possessed an incentive to maintain overvalued exchange rates because they lowered the cost of food imports. In the post-depression intellectual environment of the time, "elasticity pessimism" implied that devaluation would work only very slowly to reduce a trade imbalance. The trade deficits created by overvalued currencies also provided European governments with the economically perverse but politically attractive incentive to retain restrictions on trade (see Giersch et al. [1992, 94-95]).

free market reforms endured. German economic growth in the 1950s earned the name of *Wirtschaftswunder* (economic miracle).

Maintaining Balance-of-Payments Equilibrium

The West succeeded in establishing a peaceful Europe after World War II, where it had failed after World War I. Its success depended in part on the establishment of a monetary system that did not entail the deflation of the late 1920s and early 1930s. German and U.S. behavior allowed movement toward free trade with a system of pegged exchange rates while avoiding deflation.¹⁰

Immediately after the war, an undervalued dollar created a dollar shortage, and the United States ran a huge balance of trade surplus. In part, the United States recycled the resulting reserve inflows through unilateral transfers to the rest of the world.¹¹ Equally important, in 1949, the United States encouraged its trading partners to devalue their currencies (revalue the dollar).¹² By ceasing to overvalue their currencies, these countries eliminated pressures to either deflate or resort to protectionism.

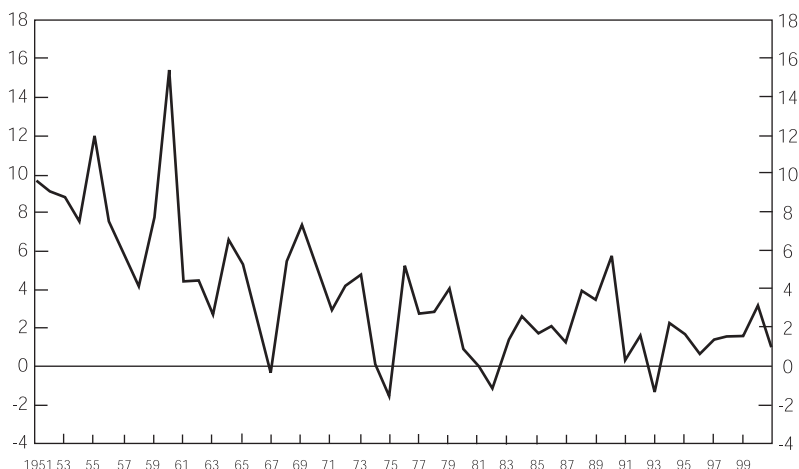
After a small deficit in 1951 and surplus in 1952, Germany began to run persistent current account surpluses (Giersch et al. 1992, Table 28). Left alone, the surpluses would have widened because of the increasing competitiveness of German industry. After the war, Western European countries purchased their capital goods exclusively from the United States. However, in the 1950s, Germany replaced the United States as the major exporter of capital goods to European countries (Giersch et al. 1992, 88–89; Yeager 1976, 486). Germany

¹⁰ The rejection of isolationism by the United States was also of central importance. U.S. aid replaced punitive reparations. The resulting cooperation between European countries in the form of the Organization for European Economic Cooperation (OEEC) facilitated the re-entry of Germany into the European community. With the establishment of GATT, the United States encouraged an open, multilateral trading system.

¹¹ The sum of government and private unilateral transfers and capital outflows was \$6.8 billion in 1949. The figure fell to around \$4 billion in the mid-1950s, but rose again to almost \$7 billion in 1957 (U.S. Historical Statistics, Part 2, Series U 1-25, “Balance of International Payments: 1790 to 1970”).

¹² On 18 September 1949, after a sterling crisis and with U.S. encouragement, Britain devalued the pound by 30.5 percent. Thirty other countries, accounting for approximately two-thirds of all world trade, followed in devaluing relative to the dollar (Yeager 1976, 444–45). Those devaluations left the dollar somewhat overvalued for most of the 1950s. Giersch et al. (1992, 93) present a graph of the difference between the free market DM exchange rate on the Zürich market and the official exchange rate. According to this measure, the DM was about 20 percent overvalued in early 1950. By the end of 1953, the overvaluation disappeared.

Starting in 1950 and for the remainder of that decade, the United States incurred a deficit on current account (with the exception of 1956 and 1957, when the United States benefited from special factors related to the Suez crisis). From 1950 through the end of the Bretton Woods system in 1973, the United States persistently lost gold. (In 1949, the U.S. gold stock was \$24.6 billion. It declined steadily and reached \$10.5 billion in 1972, the last full year of the Bretton Woods system.) The willingness of the United States to allow reductions in its gold stock allowed other countries to rebuild their reserves.

Figure 2 German Real GDP Growth

Notes: Data are from Ritschel and Spoerer (1997), Tables A.1, A.2, and A.3.

responded to balance-of-payments surpluses by liberalizing its trade faster than other countries (Holtfrerich 1999, 331).¹³

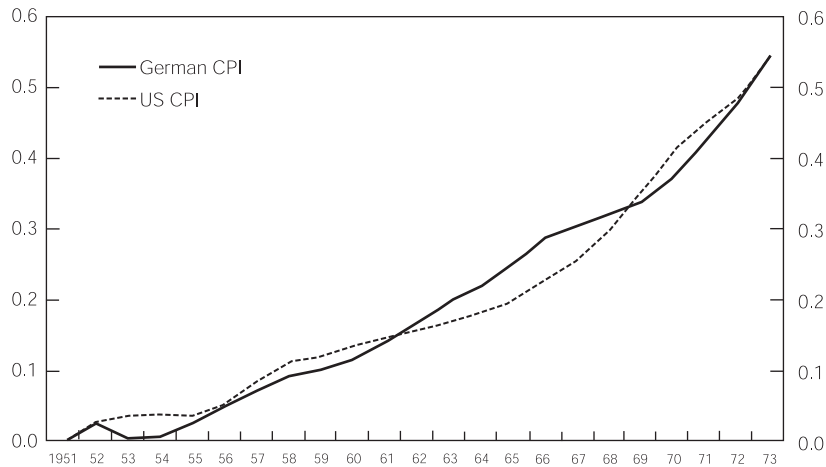
After 1955, liberalization of its capital controls allowed Germany to become a significant exporter of capital (Yeager 1976, 490–96; Giersch et al. 1992, Table 28). When the EPU disbanded in December 1958, Germany was granting it significant amounts of credit to cover the deficits of other countries (Yeager 1976, 412). In the 1960s, Germany pursued a large-scale foreign aid program and capital exports (Holtfrerich 1999, 377, 393).

An Independent Bundesbank

Although the system of pegged exchange rates left the BdL without goal independence, it still had to establish credibility for instrument independence.¹⁴

¹³ Germany became a “pioneer of European [trade] liberalization” in an effort to “become a respected member of the Western world” (Giersch et al. 1992, 108–09). If Germany enjoyed monopoly power in its exports of capital goods, reducing tariffs would reduce balance-of-payments surpluses by weakening its terms of trade.

¹⁴ For a bank that needs to establish credibility, an exchange rate peg serves as a clear objective, the accomplishment of which is evident to everyone. Because of the random variability that relative price changes impart to short-term movements in the price level and the long lags with which money affects the price level, central bank control of a price level objective becomes evident only over a long period of time. There are then reasons for a new central bank to peg its currency to that of a stable currency.

Figure 3 Price Levels

Notes: Annual observations of the natural logarithm with 1951 as the base. The source of the data is Deutsche Bundesbank, ed. *Geld und Bankwesen 1876–1975* (1976).

It had to do so despite the fact that “the Allies had established a totally independent central bank contrary to German wishes” (Buchheim 2002, 10). The success of the BdL in maintaining the pegged exchange rate in an environment of falling unemployment, strong real growth, and price stability created public support for independence (Figures 1, 2, and 3). When in 1956 the Bundesbank increased its discount rate by 1 percentage point, Chancellor Adenauer challenged the BdL publicly. He stated that “it is the little ones who will suffer most. . . . [T]he guillotine falls on the man in the street, and that is what grieves me so much” (Neumann 1999, 291). Public reaction, however, supported the BdL.

When in 1957 Germany replaced the Allied promulgation establishing the BdL with the law establishing the Bundesbank, it had to respect public support for an independent central bank (Buchheim 2002, 11ff).¹⁵ The 1957 Bundesbank Act created the Bundesbank and instructed it to “regulate the amount of money in circulation and of credit supplied to the economy with

¹⁵ The Bundesbank also demonstrated its (instrument) independence later, in 1966 when output stopped growing and the unemployment rate rose (Figures 2 and 3). Despite a public attack by the Erhard government, the Bundesbank refused to lower its discount rate. Chancellor Erhard’s government fell in November 1966. Because of the unsatisfactory behavior of wage growth and the government budget, the Bundesbank then refused the demands of the new government of Chancellor Kiesinger to cut interest rates (Holtfrerich 1999, 380–81).

the aim of safeguarding the currency” (Holtfrerich 1999, 318). The written report of the Chairman of the Committee for Money and Credit of the German parliament stated:¹⁶

The security of the currency... is the highest precondition for the retention of a market economy, and hence in the final analysis that of a free constitution for society and the state... [T]he note-issuing bank must be independent of these [political bodies] and subject only to the law.

However, the Act’s mandate for “safeguarding the currency” left unstated whether the Bundesbank should stabilize the internal or external value of the DM.

U.S. Inflation Destroys Bretton Woods

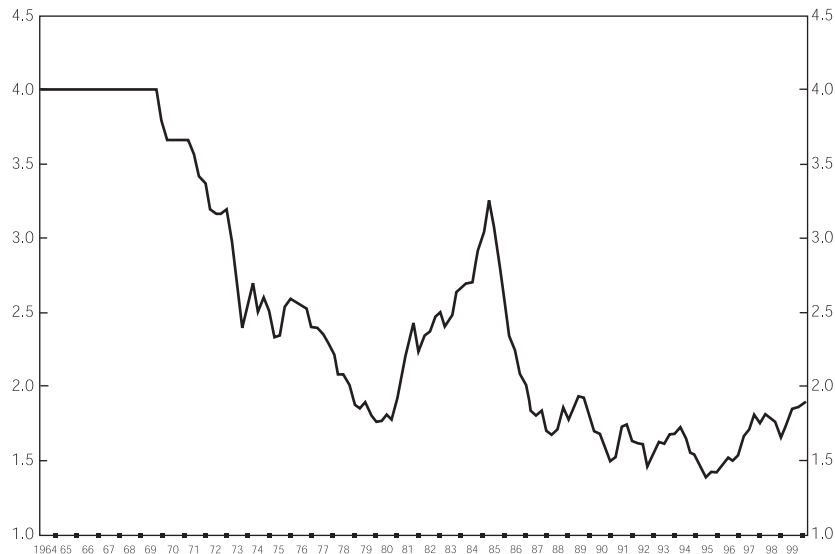
Germany had strong reasons for maintaining the peg of its currency with the dollar at a fixed rate. The United States’ technological and manufacturing supremacy coming out of World War II had made the dollar a symbol of strength. A stable exchange rate with the dollar gave prestige to the mark. Later, Germans associated exchange rate stability with the export boom that powered postwar economic recovery. The export industries that benefited did not want a revalued mark that would erode their profits.

However, the inflationary monetary policy the United States began in the mid-1960s forced fundamental change on Germany both in its monetary arrangements and in its intellectual environment. Maintenance of a fixed exchange rate required Germany to match U.S. inflation. Initially, Germany resorted to capital controls in a futile attempt to retain fixed exchange rates and to avoid imported inflation. Eventually, Germany chose floating exchange rates. Ten years of intellectual ferment then passed before the Bundesbank used its newfound freedom to make price stability its overriding objective.

Like other countries in the 1970s, Germany experimented with aggregate demand policies aimed at controlling inflation. In Germany, the unemployment rate rose far above the levels of the 1960s (Figure 1). Despite this fact, inflation reached peaks of 7 percent in 1974 and 1982. Two results became apparent. First, to control inflation, the central bank had to control money growth. Second, high rates of money growth produced inflation, not low unemployment.

The Bretton Woods system of pegged exchange rates required Germany to allow its price level to rise along with that of the United States. Figure 3 shows that over the period of the Bretton Woods system, U.S. and German price levels

¹⁶ Quoted in Stern (1999, 149).

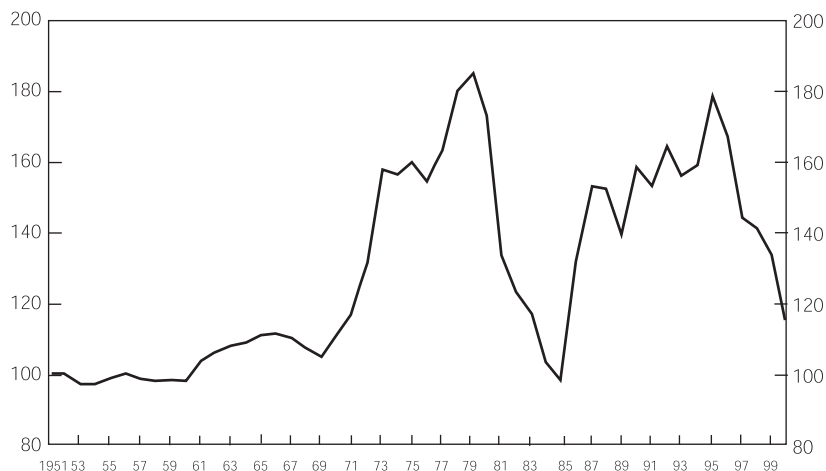
Figure 4 Deutsche Mark–Dollar Exchange Rate

Notes: The source of the data is DRI-WEFA.

rose by the same amount.¹⁷ The increase in the rate at which prices rose in the United States, beginning in 1965, ultimately destroyed the Bretton Woods system. Germany was willing to accept 3 percent “adjustment inflation” as a cost of the system (Holtfrerich 1999, 383). Moderate inflation was less costly to the government than a confrontation with the export industries over a revaluation of the DM. However, in the early 1970s, U.S. inflation pushed the Bundesbank beyond its limit. Even so, abandonment of an exchange rate peg and the move to a floating exchange rate came only after bitter debate and a wave of inflation.

Figures 6 and 7 display graphically the dilemma Germany faced. The high rates of money growth created by the Bundesbank’s defense of the mark-dollar

¹⁷ Given the similar rise in price levels, Germany’s terms of trade relative to the United States rose by the amount of its revaluations. Germany revalued its currency relative to the dollar by 5 percent in March 1961. Germany let the mark float upward in September 1969 and then set a peg at a rate that revalued the mark by 9.3 percent (Figure 4). It again let the mark float upward in May 1971. In December 1971 as part of the Smithsonian accords, Germany pegged to the dollar at a rate that revalued the mark by 13.6 percent relative to its prior Bretton Woods parity. Despite these revaluations, Germany’s terms of trade rose with the breakdown of Bretton Woods in 1973 (Figure 5). That fact suggests that the capital controls imposed by the United States in the 1960s kept the mark from becoming more undervalued (the dollar from becoming more overvalued).

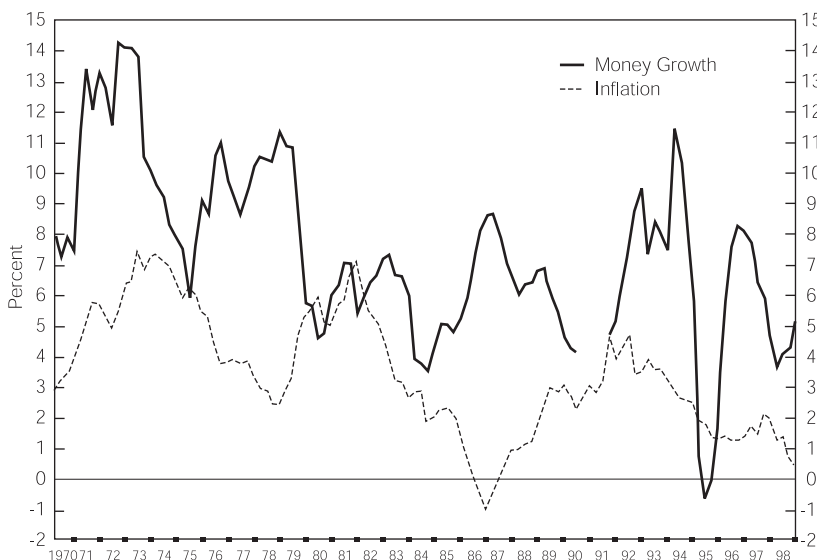
Figure 5 Real Exchange Rate

Notes: The real exchange rate is the ratio of the DM to dollar exchange rate multiplied by the ratio of the U.S. CPI to the German CPI. 1951 equals 100.

exchange rate in the early 1970s produced high rates of inflation. Figure 6 plots quarterly observations of four-quarter growth rates of money and prices. Figure 7 fits a step function to annualized quarterly growth rates of money and prices. It highlights the lagged relationship between changes in money growth and inflation through arrows that connect steps in money growth to subsequent steps in inflation (see also Table 1).

In response to recession, in 1970 the Federal Reserve pushed down U.S. short-term interest rates. Germany, with strong real output growth, maintained a high level of short-term rates (Figure 2; von Hagen 1999, Figure 4). As a result, large amounts of short-term capital flowed into Germany, while its significant export of long-term capital ceased (Giersch et al. 1992, Table 28). Net capital inflows forced the Bundesbank in May 1971 to buy large amounts of dollars, including \$1 billion in the last 40 minutes of trading on 5 May. Germany let the mark float and then revalued it as part of the December 1971 Smithsonian agreement.

Opposing camps within the Bundesbank and the government debated whether to stabilize the external or the internal value of the DM. Johnson (1998, 70) quotes a Bundesbank official who characterized this debate as “a Glaubenskrieg (religious war) of Wagnerian proportions.” Karl Klasen became Bundesbank president in January 1970. He favored capital controls to preserve the foreign exchange value of the mark and credit controls to limit

Figure 6 Money Growth and Inflation in Germany

Notes: Quarterly observations of four-quarter growth rates of the CPI and M3. Data are from DRI-WEFA. Heavy tick marks indicate fourth quarter. The gap in the money growth series arises from deletion of the observations distorted by the discrete jump in money that occurred with German unification in 1990.

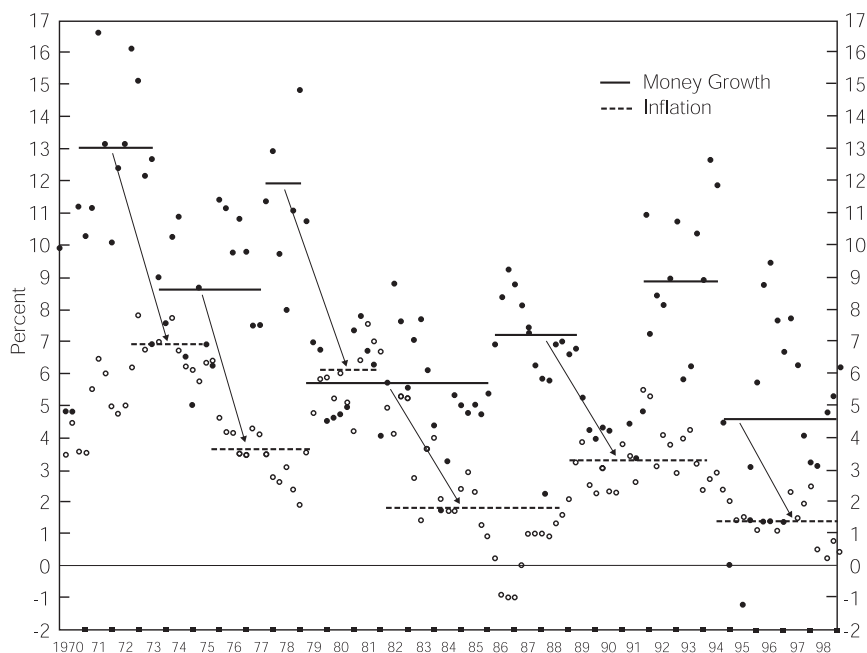
the credit extension of German banks (Johnson 1998, 70–84; Solomon 1982, 178–80).¹⁸

In April 1972, in an arrangement called the Snake, most European countries agreed to limit fluctuations in their exchange rates more strictly than provided for by the Bretton Woods system. When Britain abandoned the Snake in June, speculators attacked the mark. Germany responded by adopting capital controls (Yeager 1976, 514).¹⁹ Again, as in 1950, Germany had to

¹⁸ In 1961, Bundesbank President Blessing had strongly opposed revaluation. It was Ludwig Erhard, Minister of Economics and author of Germany's free market reforms, who understood that revaluation would allow Germany to maintain internal stability without external controls (Holtfrerich 1999, 375).

The essence of such controls is the implicit taxation of international investment flows, that is, fiscal policy. Fiscal policy is properly the province of the government not the central bank. Capital and credit controls are ultimately incompatible with central bank independence and with free markets.

¹⁹ The Federal Reserve encouraged the Bundesbank ("Memorandum for the President," Herbert Stein, 11 July 1972, Stein Box 49, "Nixon Presidential Materials Project" National Archives

Figure 7 Money Growth and Inflation in Germany

Notes: The dots are two-quarter moving averages of the current and preceding quarters' annualized M3 growth. The solid line is a step function fitted to the quarterly growth rates. Observations are omitted for M3 from 1990Q3 through 1991Q2. 1990Q3 includes the discrete jump in M3 of 15 percent. The circles are two-quarter moving averages of the current and preceding quarters' annualized quarterly growth of the CPI. The dashed line is a step function fitted to the quarterly growth rates. The arrows connect the money step to the subsequent inflation step. Heavy tick marks indicate fourth quarter. See Table 1.

decide whether to adopt monetary arrangements that would require a retreat from free markets.

Overwhelmed by an inflationary American monetary policy, the Bretton Woods system collapsed definitively in early March 1973. In February 1973, the Bundesbank monetized foreign exchange inflows equal to 15 percent of

and Records Administration in College Park, MD): "In his letter of July 8 to you, Arthur Burns describes the circumstances surrounding the German decision to impose exchange controls rather than allow the mark to rise relative to the dollar. The German cabinet was apparently motivated by the desire to minimize political difficulties—including difficulties for us in November. Dr. Burns congratulated Dr. Klasen, head of the German Central Bank, on his victory in behalf of international monetary stability."

Table 1 Money and Inflation Steps

| Time Period | Averages of Annualized M3 Growth | Time Period | Averages of Annualized CPI Inflation |
|--------------------|-----------------------------------------|--------------------|---------------------------------------------|
| 70Q3–73Q2 | 13.0 | 72Q3–75Q2 | 6.9 |
| 73Q3–77Q2 | 8.6 | 75Q3–79Q2 | 3.6 |
| 77Q3–78Q4 | 11.9 | 78Q3–81Q4 | 6.1 |
| 79Q1–85Q4 | 5.7 | 82Q1–88Q3 | 1.8 |
| 86Q1–89Q1 | 7.2 | 88Q4–94Q1 | 3.3 |
| 91Q3–94Q2 | 8.9 | | |
| 94Q3–98Q4 | 4.6 | 94Q2–98Q4 | 1.4 |

its monetary base (von Hagen 1999, 686). The Bundesbank's purchase of 2.7 billion dollars on a single day, 1 March (3 percent of its monetary base), forced a reluctant German government to float (Marsh 1992, 165).²⁰ Henceforth, the mark floated against the dollar (Figure 4). Although Germany finally chose free markets and a floating exchange rate, its stubborn defense of pegged exchange rates allowed the Bretton Woods system to continue long enough to turn U.S. inflation into a worldwide economic boom and inflation.²¹

This experience made clear to the Bundesbank that a system of pegged exchange rates had stolen its independence. An exchange rate peg meant that the Federal Reserve determined German monetary policy. Loss of independence came from loss of control over money creation. Members of the Bundesbank Council in their meetings described the Bundesbank as a “self-service store for central bank money” (von Hagen 1999, 686).

Pegged Exchange Rates and Price Fixing

The Bretton Woods system contained an inherent contradiction: the attempt to combine stable and adjustable exchange rates. Its architects wanted stable

²⁰ For a fuller account, see Yeager (1976, 515–16) and Solomon (1982, Chapter XIII). Johnson (1998, 82–83) contains an account of the drama. Otmar Emminger, the Bank's vice-president, led the free market camp that favored a floating exchange rate and the indirect control of inflation through monetary control. Helmut Schlesinger, a newly appointed Bundesbank Council member, supported Emminger. By law, the German government set the external value of the mark. Backed by an implicit threat of resignation by the Bundesbank's Directorate, Emminger issued a challenge to the government's policy of exchange rate pegging. In the climactic meeting with Willy Brandt, both Bundesbank President Klasen and Finance Minister Schmidt, who opposed floating, were in the hospital and Emminger prevailed.

²¹ The economic boom and strong demand for energy made possible the sharp rise in oil prices engineered by OPEC in 1973 and 1974. Hetzel (1999, Section 3) argues that excessive money growth, not oil price shocks, caused the inflation of the 1970s and early 1980s.

exchange rates to eliminate what they saw as the destructive, competitive devaluations of the 1930s. The supposed failure of markets in the depression led policymakers to believe that floating exchange rates would be destabilizing. At the same time, its architects wanted adjustable exchange rates so that individual countries could equilibrate their balance of payments without recourse to deflation or inflation. The resulting system delayed changes to maladjusted exchange rates until a speculative crisis forced a large change.

Independent central banks that could sterilize international reserve flows robbed the Bretton Woods system of an automatic market mechanism for equilibrating the balance of payments. Governments faced an incentive to use capital controls to reconcile the conflicting demands of external and internal stability of their currency. Central bank discretion in a system of pegged exchange rates created all the problems associated with government price fixing. The pressure on government to impose capital controls politicized monetary policy. Consider the 1969 revaluation of the DM.

In May 1968, the attempt to defuse riots in France led the French government to grant large wage increases to workers.²² De Gaulle's refusal to devalue the franc then set up a one-way bet for speculators: Although Germany would not devalue the DM, it could well revalue it relative to the franc. In November 1968, large inflows of foreign currency into the Bundesbank prompted Germany to enact a "pseudo-revaluation" with a special tax on exports and tax allowance on imports. When a leaked Bundesbank memorandum showed that the Bundesbank had in fact not supported the measure, the head of the SPD party accused it of having "stabbed its own government in the back."

The Bundesbank imposed a non-interest-bearing reserve requirement of 100 percent on the growth of foreign deposits. In early May 1969, despite heavy inflows of foreign exchange, the government, which had authority over the foreign exchange parity of the DM, again decided against revaluation, "finally, unequivocally and eternally" as a government spokesman put it (Holtfrerich 1999, 388; Yeager 1976, 509). The issue of whether to revalue dominated the September 1969 elections. The new government of Willy Brandt revalued the DM. Speculative capital flows then reversed as more than DM 20 billion in hot money flowed out of Germany.

2. CHOOSING THE GOAL OF MONETARY POLICY

The March 1973 float of the mark gave the Bundesbank goal independence. However, in the 1970s, the Bundesbank remained divided over how to exercise that independence. The 1957 law that created the Bundesbank required it to "safeguard the value of the currency." A history of inflation leading to

²² This paragraph and the next draw on Holtfrerich (1999, 384–89).

social discontent encouraged Germany to interpret that phrase to mean that the Bundesbank had to safeguard the internal value of the mark. However, Germany also had a history of unemployment leading to social discontent. That history encouraged a monetary policy directed at holding down unemployment. In the 1970s, the Bundesbank had to contend with pressure from the governments of Willy Brandt and Helmut Schmidt, which made unemployment the top priority.²³

The Indecision of the 1970s

After the 1973 float of the mark, the Bundesbank concentrated on lowering inflation and money growth fell (Figure 6). However, by the end of 1974, the unemployment rate had risen significantly (Figure 1). Some Bundesbank council members supported the Brandt government's policy goal of full employment. Others, including Helmut Schlesinger and Otmar Emminger, opposed an activist stabilization policy.²⁴

This division appeared in a disagreement over how to use the newly invented money target. In 1973, the Bundesbank had adopted a target for "central bank money."²⁵ In December 1974, it began annual public announcements of the target. The hawks wanted to use money targets to ratchet down money growth and inflation over time. The doves wanted to use them to reassure the public that temporarily expansionary monetary policy would not become inflationary (von Hagen 1999, 425).

In a victory for the doves, toward the end of 1974, the Bundesbank began to lower interest rates. It also announced a generous target of 8 percent for money growth. Beginning in 1977, the mark began to appreciate strongly against the dollar. That appreciation made the Bundesbank unwilling to raise interest rates (von Hagen 1999, 423; Baltensperger 1992, 442). Monetary policy remained inflationary throughout the remainder of the 1970s (Figures 6 and 7). The Bundesbank regularly overshot its already expansionary money targets. In 1978, growth of central bank money exceeded its average target of 8 percent by 3 percentage points.

The decision made in March 1973 to float the mark gave the Bundesbank goal independence and made possible the path that would lead to the Bundesbank of the 1980s: the independent, monetarist pillar of West German society.

²³ Finance minister Karl Schiller resigned in June 1972 over the refusal of the government to allow a float of the mark against the dollar. Willy Brandt replaced him with Helmut Schmidt, who later replaced Brandt as Chancellor. Schmidt used the slogan, "Five percent inflation is better than five percent unemployment" (Johnson 1998, 78).

²⁴ This paragraph and the following one draw on von Hagen (1999, 686) and Johnson (1998, 90–95).

²⁵ This monetary aggregate was akin to the monetary base adjusted for changes in reserve requirements.

However, in the 1970s, other paths beckoned. Germany and other Western countries undertook the Keynesian experiment of aggregate demand management. The failure of such policies to “buy” low unemployment through high inflation changed the intellectual and political environment.

In that new environment, countries were willing to assign the control of inflation to their central banks. Japan had steadily pursued a policy of a gradual return to price stability since 1974. In 1979, with the election of Margaret Thatcher as prime minister, Britain began to disinflate. In that same year, Federal Reserve Chairman Paul Volcker led the United States down the path of disinflation. The stagflation of the 1970s also made Germany willing to forswear activist macroeconomic policies and to assign to the Bundesbank the goal of price stability (Dyson and Featherstone 1999, 747, 752).

The EMS Threatens Bundesbank Independence

In the postwar period, European economic integration became a strategy for anchoring Germany within a democratic Europe (Arestis, McCauley, and Sawyer 1999, 1–4). Wim Duisenberg (1999, 4), first head of the European Central Bank, expressed the goal using Thomas Mann’s phrase: “A European Germany, rather than a German Europe.”

In December 1969 at a conference at The Hague, governments of the European Economic Community (EEC) agreed on European monetary union as a goal. After the breakdown of Bretton Woods in 1973, Germany wanted to make the Snake into a joint float of European currencies against the dollar. One reason was that when capital flowed out of the United States in response to inflationary worries, it primarily went to Germany. The mark then appreciated not only relative to the dollar but also relative to Germany’s major European trading partners, and German exports suffered. However, European countries were not ready to sacrifice independent national monetary policies. In 1977 and 1978, the dollar again depreciated strongly (Figure 4). The corresponding appreciation of the mark gave Germany an incentive to revive the Snake once again.

In summer 1978, Germany’s Chancellor Helmut Schmidt and France’s President Valéry Giscard d’Estaing agreed to link their currencies within a European Monetary System (EMS).²⁶ Their motivations foreshadowed those that would later lead to the EMU. Germany needed its foreign policy interests to be identified with an aspiration to build a united Europe. Other countries would then be more receptive to German diplomatic initiatives, especially

²⁶ The EMS’s “exchange rate mechanism” of fixed parities is referred to as ERM.

toward Eastern Europe.²⁷ Schmidt said later that the EMS was part of a “grand strategy for integrating Europe” (Marsh 1992, 202).

France wanted to build pan-European institutions to ensure that its influence within Europe would remain on par with that of an economically dominant Germany. France was confident that its civil servants would assure attention to French interests within such institutions. However, because the EMS did not create a single central bank for all of Europe, it left unanswered the roles of the Bundesbank and the Banque de France in maintaining the exchange rate peg. The Bundesbank, however, did not wait for Bonn and Paris to define its role.

The Bundesbank Defines Itself

The launch of the EMS in March 1979 initiated the Bundesbank policy of setting money targets to achieve price stability (von Hagen 1999, 433–36). The EMS had the potential to recreate the experience of Bretton Woods, with the Bundesbank forced to create money and inflation by supporting a weak franc instead of a weak dollar. If France wanted the EMS, the Banque de France would have to subordinate its monetary policy to pegging the franc to the mark. Karl Otto Pöhl, Bundesbank president from 1979 to 1991, said, “The Bundesbank turned the original concept [of the EMS] on its head by making the strongest currency the yardstick for the system” (Marsh 1992, 203).

Starting in 1979, the Bundesbank began to pursue the goal of price stability. Not only the EMS, but also inflation motivated the change in policy. From a low of 2.7 percent in 1978, CPI inflation rose to 6.3 percent in 1981 (Figure 6). The Bundesbank lowered its monetary target range from 1979 (6 to 9 percent) through 1985 (3 to 5 percent). Only in one year of this period, 1983, did money growth slightly exceed the target range. Money (M3) growth fell from 10 percent in the 1970s to 6 percent in the 1980s. By retaining price stability as its primary objective despite the high unemployment rates of the 1980s, the Bundesbank gained credibility for its policy of price stability.

The Bundesbank as Guarantor of Stability

From modern Germany’s postwar inception in 1949, its polity has been corporatist: the major organized groups—political parties, corporations, and trade unions—determine the economic and political consensus. By the 1980s, this

²⁷ The most complete account of the history of European monetary union is in Dyson and Featherstone (1999) and Connolly (1995).

framework for achieving consensus had lost its balance. The Bundesbank restored balance by joining that framework as the representative of stability.

The German corporate consensus exercised a dramatic effect on the labor market in the 1950s and 1960s (Giersch et al. 1992, Chapter 4, Section A). The labor unions kept real wages below their market clearing value to help Germany regain its prominence as one of the world's great exporters of manufactured goods. An influx of foreign workers met the resulting labor shortage. In the early 1950s, the unemployment rate fell slowly because of the problems in absorbing German-speaking immigrants. In the 1960s, however, it generally remained well below 1.5 percent (Figure 1).

As described above, in the latter part of the 1960s under the Bretton Woods system, the rise in inflation in the United States rendered the dollar overvalued (the mark undervalued).²⁸ The profits of German corporations soared because of the export boom set off by the undervalued mark. At the same time, imported inflation eroded the real value of nominal wage contracts. CPI inflation, which had averaged 1.6 percent in 1967, 1968, and 1969, rose steadily until it reached 7 percent in the early 1970s. In response, labor unions broke the corporatist social contract and launched a wave of wildcat strikes in autumn 1969.²⁹ Pushed by "shop floor radicals," major unions like chemicals and autos went on strike in the early 1970s (Johnson 1998, 72–73, 90–95).

The postwar German consensus that had produced the *Wirtschaftswunder* continued to erode in the 1970s. In 1978, the printers' union went on strike to prevent the introduction of labor-saving technology. Also in the late 1970s, the Social Democratic Party began to identify with the program of labor. This identification "endangered the consensual pillars of corporatism" (Giersch et al. 1992, 214–16).

With the full-employment pledges by the Brandt and Schmidt governments, with labor unions desirous of large wage increases, and with corporations reluctant to allow appreciation of the mark, the Bundesbank became the member of the corporatist framework defending "stability"—price stability and balanced budgets. Moreover, when the Bundesbank agreed on the primacy of maintaining the DM's internal value, it could represent the general public desire for economic stability. As Otmar Emminger said in his inaugural speech upon becoming Bundesbank president in 1977, "Monetary stability is linked up with general social stability—and with political stability" (Marsh 1992, 37).

²⁸ Giersch et al. (1992, 164–66) document the sharp rise in the German trade surplus.

²⁹ Giersch et al. (1992, 154–58) discuss reasons for the "sudden switch of union behavior from moderation to aggressiveness in the late 1960s and early 1970s." Holtfrerich (1999, 387) quotes Schiller (Minister of Economics) as arguing for a DM revaluation in 1969 to eliminate the threat to "social symmetry" produced by the surge in corporate profits. Rising inflation that eroded the value of collective wage agreements was a social "bomb."

Marsh (1992, 145) writes, “If it [the Bundesbank] feels inflationary pressures are getting out of hand, the central bank reserves the right to confront the politicians, industrialists, and trade unionists who exert the main influence on corporate Germany.” However, the Bundesbank could not confront the unions directly. To do so would come “dangerously close to compromising their constitutionally guaranteed right to autonomous wage negotiations” (Marsh 1992, 145). The Bundesbank could not on its own conduct a “disguised incomes policy,” that is, tell the unions what wage increases to negotiate (Johnson 1992, 92, 94). The Bundesbank could, however, use its money targets to make its objective of price stability credible and thus exercise indirect influence over wage negotiations. Those procedures became “an integral component of German ‘stability culture.’” (Schmid 1996, 42).³⁰

The Bundesbank’s stability policy succeeded because of widespread public support.³¹ Capie and Woods (2001), in their review of *Fifty Years of the Deutsche Mark*, cite Richter (1999, 562):

³⁰ The Bundesbank used a quantity theory framework to derive a target for money growth. There are many descriptions of these procedures. See, for example, Schlesinger (1984) and Schmid (1996). The Bundesbank began by setting a target for growth in nominal aggregate demand (nominal output). The target for growth in nominal demand had two components. One was an estimate of the trend rate of growth of real output. (By using trend growth, the Bundesbank sent the message that monetary policy was not an appropriate instrument for countercyclical aggregate demand management.) The other component was “unavoidable” inflation.

In 1986, the Bundesbank restored price stability and discarded the idea of “unavoidable inflation” for an inflation target of 2 percent or less. The Bundesbank worked hard to achieve a consensus for its inflation target from government, labor, and business (Schlesinger 1984). The Bundesbank then set a money growth target equal to the target for nominal output growth minus estimated growth of monetary velocity. Clarida, Gali, and Gertler (1998) estimate a monetary policy reaction function for Germany, which they interpret as evidence of inflation targeting.

³¹ Baltensperger (1999, 462–63) reviews “the often highly controversial and turbulent debate” over monetary policy in the early 1980s, but concludes, “all in all, Bundesbank policy enjoyed broad public support.” Why this support despite the sustained rise in the unemployment rate over the period from 1973 through 1983 (Figure 1)? Connolly (1995, 33, 301) contends that Germans liked making the EMS into an “undeclared DM-zone” and having other currencies devalue relative to the DM. More important, the willingness of most major countries to assign to their central banks primacy for a price stability objective attests to the importance of a fundamental change in the political and intellectual environment. Kitterer (1999, 192) points to the “failure of demand management despite a sharp rise in the public sector deficits” and to “the simultaneous sluggish growth and high inflation of the period.” Countries became disillusioned with the ultimate ineffectiveness and the inflationary consequences of the aggregate demand policies of the 1970s. Within Germany, the more conservative environment appeared with the program of fiscal consolidation of the CDU/CSU and FDP coalition of Helmut Kohl that replaced the SPD/FDP coalition of Helmut Schmidt in October 1982 (Giersch et al. 1992, 192–96).

In the postwar period, the German government had become increasingly leftist and interventionist (Giersch et al. 1992, 125). Although the government had always regulated the economy, “public subsidization and heavy legal regulation of economic activity...took on a new qualitative dimension in the 1970s and 1980s” (Giersch et al. 1992, 216). For a while in the 1970s, Keynesian aggregate-demand policies had offset the rise in unemployment produced by the resulting increased inflexibility in labor markets. However, inflation vitiated the effectiveness of those policies. By the 1980s, “public opinion and the vast majority of academic economists...supported the Bundesbank’s line, if only because there seemed to be no realistic alternative” (Giersch et al. 1992, 193).

The German public...after having lost their savings twice within 25 years [1923 and 1948], definitely wanted a stable currency....No Bonn government in its right mind would have...put the Bundesbank under pressure.

The Bundesbank as European Central Bank

By 1980, almost all the major industrial countries had rejected the activist policies of the 1970s that had led to inflation. France alone retained expansionary fiscal and monetary policies. In May 1981, François Mitterand became president of France. He pursued a program of government intervention in the economy and expansion of aggregate demand. Capital flowed out of France and the franc weakened. When the Bundesbank refused to lower interest rates and inflate to support a weakened franc, France had to devalue. In a series of devaluations ending March 1983, the value of the French franc fell by 30 percent against the DM.

With inflation and a weak currency, France could not exercise the same leadership within Europe as Germany.³² After March 1983, France followed conservative fiscal policies, and the Banque de France gave priority to preserving the parity of the franc with the DM. The combination of Bundesbank commitment to internal price stability and the peg of the franc to the DM determined the character of the EMS. Continental Europe gained a central bank—the Bundesbank—when other countries chose to peg to the DM even at the expense of their own domestic monetary policies (Baltensperger 1999, 440). A stability-oriented Bundesbank policy of monetary targeting designed to achieve price stability provided a nominal anchor for the EMS. At the same time, de facto establishment of the Bundesbank as the European central bank gave France an incentive to regain influence over monetary policy by creating a de jure European central bank.

Backsliding with the Louvre Accord

In 1987, the Louvre Accord initiated expansionary and ultimately inflationary monetary policies among the world's major industrial countries.³³ The Louvre Accord and simultaneous EMS problems due to weakness in the franc pushed the Bundesbank away from its stability-oriented policy (Baltensperger 1999, 466–75). In January 1987, labor unrest in France weakened the franc, and the Bundesbank intervened in the foreign exchange market to prop up the franc.

³² Comments on French politics reflect the themes developed in de Boissieu and Pisani-Ferry (1999).

³³ The political problem was the rise in U.S. protectionism produced by a large U.S. current account deficit. The Plaza Accord of September 1985 had attempted to use coordinated intervention

Already by 1986 the Bundesbank had significantly overshot its target range for money. Nevertheless, in early 1987, the Bundesbank reduced the repurchase rate. France still had to devalue the franc.

The German money stock continued to overshoot its target range through 1987. In response, early in October, the Bundesbank nudged its repurchase rate up slightly. On Friday 16 October, U.S. Treasury Secretary James Baker criticized Germany for backing off its pledge to stimulate its economy (Conolly 1995, 40). On Monday 19 October, the U.S. stock market crashed.³⁴

Concerned that the fall in stock prices would depress economic activity, central banks lowered interest rates. In 1988 in Germany, money again overshot the top of its target range. The CPI, which had remained basically unchanged from 1985 through 1988, began to rise sharply in 1989. The Bundesbank's attempt to resist an appreciation of the mark led to excessive money growth and inflation just as it had in the early and the late 1970s. The Bundesbank kept its repurchase rate basically steady in 1986 and lowered it in 1987 despite significant overshoots in its money targets in both years. German CPI inflation climbed steadily from -0.1 percent in 1986 to 4 percent in 1992 (Figure 6).

3. EUROPEAN MONETARY UNION

German Chancellor Kohl and French Prime Minister Mitterand put the EMU on the agenda for discussion in 1988 and 1989. "But, once German unification was set under way, the EMU became endowed with a new significance: as a test of the political resolve of a unified Germany to bind itself into Europe" (Dyson and Featherstone 1999, 369). The Bundesbank accepted the decision

in the foreign exchange market to depress the value of the dollar. Policymakers hoped that a depreciated dollar would lower the U.S. deficit by stimulating U.S. exports. However, a steady depreciation of the dollar (Figure 4), which had already begun in early 1985, failed to lower the U.S. current account deficit.

The U.S. Treasury then lobbied other countries to expand domestic demand as a way to reduce their trade surpluses and lower the U.S. trade deficit. The agreement reached at Paris in February 1987 required Japan and Germany to stimulate their economies to increase imports while the United States reduced its fiscal deficit. Other countries saw the U.S. fiscal deficit as the cause of the U.S. current account deficit. The Gramm-Rudman-Hollings agreement to balance the U.S. budget gave credibility to the U.S. side of the Louvre agreement.

At the time, worldwide stimulus appeared acceptable. The disinflationary monetary policies of the first half of the 1980s had tamed inflation everywhere. Together with the transitory effect of the fall in oil prices, virtual price stability had emerged in 1986. Also, the desire of Japan and Germany to prevent further appreciation of their currencies against the dollar encouraged them to reduce interest rates. For a discussion of this period, see James (1996, 433–53), Solomon (1999, 21–29), and Volcker and Gyohten (1992, 248–58).

³⁴ Consensus is difficult to establish over the causes of a one-time event like the crash, but the Louvre Accord must have been one of them. It promised an end to dollar depreciation through coordinated government policies. The public rift between the U.S. Treasury and the Bundesbank cast doubt on the viability of that coordination and, therefore, on the value of the dollar. With the value of the dollar suddenly open to question, foreign investment in the United States became less attractive. The fall in the U.S. stock market quickly spread to foreign markets.

to replace it with a European central bank. At the same time, the Bundesbank worked to ensure that its successor would continue its policy of price stability. That continuity required an explicit mandate for price stability with the force of a treaty among countries. To bequeath the Bundesbank's credibility to the new ECB, the Bundesbank also lobbied for the replication of its own institutional structure. Finally, the Bundesbank pursued a monetary policy that would enable the new central bank to begin operation in an environment of price stability. To do so, it had to undo the post-Louvre inflation of about 5 percent (Figure 6). That task, which took place in an extremely difficult political environment, constituted one of the great successes of central banking.

German Reunification

The Berlin Wall fell in November 1989. On 6 February 1990, Chancellor Kohl decreed that West Germany would exchange the DM for the ostmark at a ratio of one to one, which compared with a free market exchange rate of 7 to 1 (Marsh 1992, 178). Monetary union on 1 July 1990 came before reunification on 3 October 1990.

The decision to reunify required immediate monetary reform. East Germany knew that West Germany would exchange ostmarks for DMs not at their black market rate, but rather at a politically determined rate. Chancellor Kohl, mindful of the symbolism of the one-for-one exchange in 1948 between the old reichsmarks and the new DMs, decided to exchange East for West German currency at a one-for-one rate.³⁵ East Germany could therefore obtain resources just by printing ostmarks.³⁶

³⁵ However, while the 1948 reforms had allowed the market to determine relative prices, the 1990 reform superseded the market. To avoid an inflow of East German workers into West Germany, Chancellor Kohl decided to raise real wages in East Germany to move them toward parity with those of West Germany (Marsh 1992, 183, 187). The West German government converted East German wage rates one for one into DM wage rates, despite the argument of the Bundesbank for a two-to-one conversion (Streit 1999, 660–62). Moreover, Germany granted East German workers large pay raises after unification. “Following monetary union with West Germany in 1990, the real wage of East German workers rose 83%” (Hunt 2001, 190).

The attempt to move toward real wage parity with West German workers conflicted with economic reality. East German workers were less productive than West German workers. In 1991, productivity in East Germany (output per worker) was only 30 percent of the West German level (Marsh 1992, 171). The economics of that political decision meant that Germany had to raise the capital-labor ratio in East Germany. However, the effort to make East Germany into a capital-intensive economy like West Germany, when the low productivity of its workers demanded a labor-intensive economy, created large-scale unemployment in East Germany.

³⁶ In March 1991, Kohl faulted Bundesbank president Pöhl publicly for the latter's criticism of the terms of monetary union with East Germany. Marsh (1992, 147) commented on the relationship between the Chancellor and the Bundesbank president: “Bound by the common desire to maintain confidence in the conduct of state affairs, the two are condemned to harmonious coexistence.” Lacking a harmonious working relationship with Kohl, Pöhl resigned on 15 May 1991.

Maastricht and the Birth of the Euro

The same political forces that had brought about the EMS now led to the EMU. In the early 1980s, Germany wanted to undertake its diplomatic initiatives within the context of building a united, democratic Europe, thereby lessening other countries' fears of a Europe dominated by Germany.³⁷ France wanted to constrain future German influence within Europe through pan-European organizations (Marsh 1992, 198).

After the EMS crisis of March 1983, France abandoned its policy of aggregate demand expansion to lower unemployment in an attempt to remain within EMS with no further devaluations. France thus fulfilled a condition necessary for movement toward monetary union with Germany. These actions required a prior fundamental decision by President Mitterrand to reshape his presidency by abandoning the agenda to substitute socialism for a free market economy and replacing that agenda with *construction européenne* (*Le Monde*, 19 May 2001, 1; Dyson and Featherstone 1999, 199).³⁸

In 1986, Europe moved closer to economic integration when it passed the Single European Act, which required the abolition of all remaining trade impediments within the European Union. Supporters of the European Union wanted Europe to possess an economic and political stature comparable to that of the United States. They talked of Eurosclerosis and believed that European integration would make European firms competitive with American firms. France especially wanted to create a European economic bloc that would rival the United States in economic influence (Boissieu and Pisani-Ferry 1999, 68).

In 1988, Hans-Dietrich Genscher, the German foreign minister; Edouard Balladur, the French Finance Minister; and Jacques Delors, the president of the European Commission (EC), began the process that would lead to the creation of a European central bank. Behind them stood Chancellor Kohl and President Mitterrand. The European Council met in Hanover in June 1988 and set up the Delors Committee to devise a plan for a single currency. The Committee delivered its report at the Madrid European Council Meeting in June 1989.³⁹

³⁷ For example, *Le Monde* (1 May 2001, 8) wrote: "It is for Germany to regain the power that it lost in 1945. However, because of its past, in order not to scare its partners, it can only do so through Europe."

³⁸ "When President François Mitterrand opted in 1983 for what came to be called the franc fort policy, he was effectively discarding most of his election commitments to old-fashioned socialism in France" (*Financial Times* 31 July–1 August 1993, 2). (Note that in French the pronunciation of the term "franc fort" is the same as "Frankfurt," the home of the Bundesbank.)

The extraordinary depth of this commitment appeared in France's willingness to alter fundamentally the dirigiste character of its economy. At the beginning of Mitterrand's presidency, nationalized firms made up a quarter of the French economy, with the remainder heavily regulated or subsidized. France was protectionist and retained capital controls. European integration required economic and financial liberalization. Within a decade, France moved dramatically away from its traditional interventionist model of government control (de Boissieu and Pisani-Ferry 1999, 56–57).

³⁹ Connolly (1995) and Vanthoor (1999) provide this chronology. The most detailed account is in the early chapters of Dyson and Featherstone (1999).

The conviction that the EMU would advance the political unification of Europe united the participants (Dyson and Featherstone 1999, 273).

The unification of Germany provided the impetus for governments to make the hard political decisions necessary for the realization of the EMU. A reunified Germany would not only be stronger economically, but also would lie in the center of a Europe rejuvenated by the fall of communism. Possessed of a sense of history, Chancellor Kohl wanted to shape two great historical movements: German reunification and European federation. With the fall of the Berlin Wall in November 1989, those movements came together.

Kohl wanted a reunified Germany, but not a Germany that Europe would fear as a bully. For Kohl, European monetary union was the instrument that would bring reunification and European federation together.⁴⁰ He said, “Political union and economic and monetary union are inseparably linked. The one is the unconditional complement of the other” (Marsh 1992, 211).

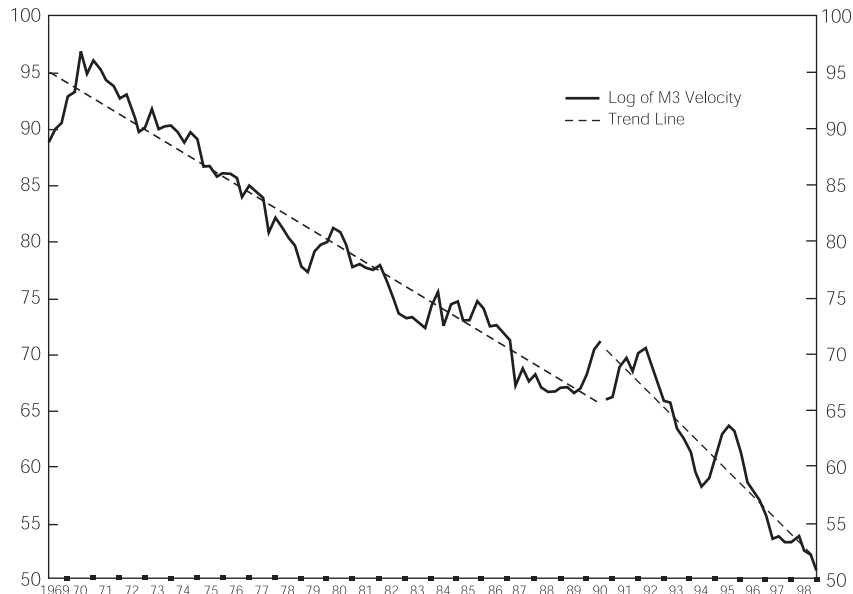
At Maastricht in December 1991, members of the European Union signed the Treaty on European Union, which laid down conditions for membership in the EMU. Monetary union required that Germany forsake the DM—the symbol of everything that it had done right after World War II. German public opinion could accept such a sacrifice only if EMU members adopted the German model of stability symbolized by the Bundesbank (*New York Times* 15 March 2000, C1). France acceded for the sake of its foreign policy objectives of countering U.S. worldwide hegemonic influence and German European hegemonic influence (Dyson and Featherstone 1999, 252; Marsh 1992, 204).

In 1990, Bundesbank president Pöhl chaired the Committee of EC Central Bank Governors that drafted the ECB statute, and the Bundesbank prepared the single draft for negotiations. The Bundesbank worked to preserve its *Stabilitätspolitik*.⁴¹ It replaced the ambiguous reference in the Bundesbank Law of 1957 to “safeguarding the currency” with the explicit language, “the primary objective of the ESCB shall be to maintain price stability.”⁴² Furthermore, it included the statement that “the ESCB shall act in accordance

⁴⁰ Dyson and Featherstone (1999, 307–08) write that German unification provided Kohl with “an opportunity to make an historic contribution to unifying Europe and to reinvent himself as an historic Chancellor. . . . His European vision was a generational as well as personal matter. It was bound up with a notion of a special historical responsibility to create a Europe that would never again experience the horrors of 1914–18 and 1933–45.”

⁴¹ Realization of the EMU required convincing Germans that its members would accept the German stability culture of fiscal responsibility. To be eligible to join the EMU, countries had to meet convergence criteria that included guidelines on inflation and budget deficits (Connolly 1995, 79; Vanthoor 1999, 131; Dyson and Featherstone 1999, 3). By making the EMU potentially into a club of outsiders and insiders, Maastricht created an enormous incentive to meet these criteria. The Bundesbank’s role was then to make certain that governments did not relax the convergence criteria.

⁴² The ESCB is the European System of Central Banks. All members of the EU belong to it. The ECB is the European Central Bank, and only a subset of EU countries are members.

Figure 8 M3 Velocity

Notes: Observations are quarterly values of the logarithm of German velocity. Velocity is the ratio of nominal GDP to M3. Until 1990Q2, figures are for West Germany. Thereafter, they are for unified Germany. The slope of the trend line fitted from 1969Q1 through 1990Q2 is -1.4 . From 1990Q3 through 1998Q4, the slope is -2.3 . Heavy tick marks indicate fourth quarter.

with the principle of an open market economy with free competition, favoring efficient allocation of resources” (Dyson and Featherstone 1999, 387–89).⁴³

The Breakdown of the EMS

German reunification created economic as well as political shock waves. The increased demand for capital investment in a united Germany required Germany to change from a capital exporter into a capital importer. To provide the additional resources needed in Germany, Germans would have to buy more from foreigners, who would in turn have to buy less from Germans. In 1989,

⁴³ This statement required monetary arrangements compatible with free markets. Such arrangements imply control of the price level through monetary control rather than through government intervention in the marketplace in the form of incomes policies. Monetary control cannot come from selected credit control and government credit rationing. Such arrangements require freely floating exchange rates rather than pegged exchange rates maintained by capital controls.

Germany's current account surplus was almost 5 percent of GDP. In 1991, Germany moved to a current account deficit equal to 1 percent of GDP (Whitt 1994, 23). This reversal required that prices in Germany rise more than the prices of its trading partners. The required relative change in international price levels could have happened automatically through a revaluation of the DM, as desired by the Bundesbank; however, France refused the required mirror devaluation of the franc. Why?

The enhanced role of a reunified Germany in Europe made the French objective of intertwining the destinies of Germany and a united Europe all the more pressing. Accordingly, the goal of European monetary union took on greater urgency. France wanted the same prestige as Germany in negotiations over the design of the ECB, not to be treated as a weak currency country (de Boissieu and Pisani-Ferry 1999, 63–64). Monetary union would also be less palatable in Germany if the most important currency after the DM, the franc, was seen as weak. Moreover, at considerable political cost, France had pursued restrictive economic policies since 1983 to prevent franc devaluations, and it did not want its sacrifice to have been in vain.

The alternative to revaluing the mark was either inflation in Germany or disinflation by Germany's EMS partners. In the event, both occurred to some extent, along with devaluations by some EMS members. The initial unwillingness of other countries to devalue required them to disinflate. Immediately following reunification, this bitter medicine appeared to work and the currency parities of the EMS held. However, the EMS came apart in 1992 and 1993.

In 1992, German money growth exceeded the 5 1/2 percent top of the Bundesbank target range, and in July the Bundesbank raised its discount rate. The discount rate did not affect the money market rate, which was determined by the repurchase rate. However, the rise was enough to make the financial markets doubt the ability of other EMS countries to maintain the punishing level of interest rates necessary to prevent the depreciation of their currencies. In September 1992, the markets forced Britain and Italy out of the EMS, and Spain, Portugal, and Ireland devalued.⁴⁴

One can understand the unyielding actions of the Bundesbank in this period in the context of the decision taken at Maastricht the previous December to proceed with monetary union. In 1992, CPI inflation in Germany was 4 percent (Figure 6). Although the Bundesbank might have to relinquish control over monetary policy to the new ECB, it was going to do so in a way that preserved its stability culture. The convergence criteria for joining the EMU, which enshrined fiscal rectitude and price stability, would mean little

⁴⁴ Estimates put the Bank of England's losses from intervention in the foreign exchange market at approximately six billion dollars. George Soros gained one billion dollars. The figures are, respectively, from Pringle (1996, 123) and Hanke and Walters (1994, 141).

The name given to the day Britain left the ERM, Black Wednesday, reveals the drama of the events. *The Financial Times* (9–10 March 1996) wrote later: “[John] Major [British Prime

if Germany itself did not itself enter into monetary union with price stability (Marsh 1992, 217). In 1992, the Bundesbank could not ignore the significant overshoot in its money target, regardless of the consequences for the EMS.

During the fall 1992 exchange rate crisis, the franc held. Michel Sapin, the French finance minister, reminded the markets that speculators had been beheaded during the French Revolution. More important, the Banque de France followed a highly restrictive monetary policy. (The degree of restriction appears in Figure 9 in the sharp increase in the interest rate difference between France and Germany.) Restrictive monetary policy in France led to weakness in the French economy in 1993.⁴⁵

In July 1993, financial markets forced France to allow the franc to depreciate by 6 percent relative to the central rate within the EMS exchange rate system. Speculators assumed that France and the other countries forced to devalue would lower interest rates to stimulate their economies. However, France, Denmark, and Belgium maintained the existing high level of interest rates. These countries feared that a “competitive devaluation” would split Europe into weak and strong currency blocks and create protectionist pressures (*Financial Times* 3 August 1993, 2; Boissieu and Pisani-Ferry 1999, 78). By maintaining a restrictive monetary policy, France returned the franc in 1996 close to the central EMS rate of 3.35 francs to the mark. The small difference between French and German interest rates showed that the mark/franc peg had become credible (Figure 9).

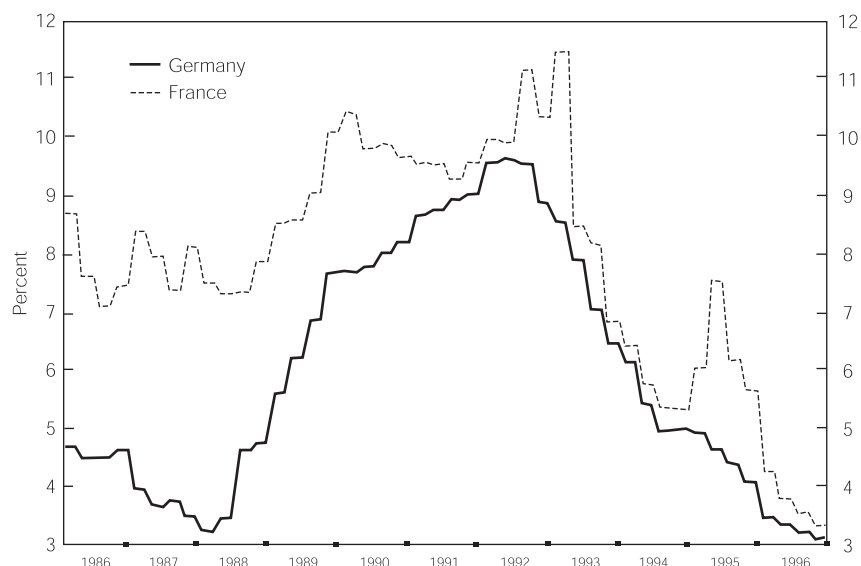
France restored the external value of the franc by maintaining a lower inflation rate than Germany. Through 1990, France had higher inflation. In

Minister] now fell into a perilous trap. Like Winston Churchill and Harold Wilson before him, he treated sterling's exchange rate as a badge of national pride....Interest rates had been raised to 15 percent. More than \$30 billion had been thrown in vain at the markets, all but exhausting the reserves. The government's economic policy lay in ruins. Major's political reputation was in shreds, his party torn asunder. The failure robbed the Prime Minister of the authority of his office.”

Norman Lamont, Chancellor of the Exchequer during the ERM crisis, blamed the Bundesbank for Britain's forced departure. He believed that the Bundesbank should have lowered German interest rates to help defend the pound (Lamont 1999–2000). England's Prime Minister Major and Chancellor Lamont were especially unhappy over an interview in the German newspaper *Handelsblatt* reporting a statement by Helmut Schlesinger, Bundesbank president, that “further devaluations are not excluded.” That newspaper article precipitated the final crisis (Frowen 1999–2000).

⁴⁵ In response to this weakness, the French lowered interest rates. Initially, the franc held against the mark. However, in July, the French economic institute, INSEE, predicted that in 1993 French GDP would fall 0.7 percent (Stanley 1993, 3). Speculators bet that a weak French economy would force the Banque de France to lower rates further and abandon the franc-mark parity. At the same time, the Bundesbank, concerned about a pickup in money growth, refused to cut its discount rate. The unwillingness of the Bundesbank to lower rates to defend the EMS weakened the credibility of the EMS and speculators attacked the franc.

The *New York Times* (31 July 1993, 47) wrote: “The attack on the franc came after a decision Thursday by the Bundesbank to fight German inflation by refraining from a cut in its discount rate....For France and Mr. Balladur [French Prime Minister], the options look bleak: either devalue, which would amount to a political humiliation after vows of resistance, or try to hang on, at potentially devastating further cost to the economy....Already last week, the Bank of France was obliged to raise overnight rates to 10 percent from 7.75 percent.”

Figure 9 German and French Money Market Rates

Notes: Observations are monthly averages of money market rates on day-to-day money for Germany and France. Heavy tick marks indicate December observations.

the subsequent four years, it maintained an inflation rate somewhat more than 1 percentage point lower than Germany. By 1995, France had come close to achieving price stability with an inflation rate of about 1.5 percent. In contrast, from 1991 to 1994, Germany had an inflation rate of about 3.5 percent.

Was Bundesbank Policy Inflationary or Disinflationary?

A characterization of German monetary policy in the early 1990s turns on whether the Bundesbank pursued an expansionary policy to relieve the exchange rate stresses in the EMS. Alternatively, did it attempt to reestablish price stability in an effort to help the new ECB begin operation in an environment conducive to the establishment of credibility? The answer depends upon how one assesses the high rates of money growth in the years 1992, 1993, and 1994 (Figures 6 and 7).

To begin, the inflation of the early 1990s derived from the expansionary character of earlier monetary policy. On 1 July 1990, monetary union increased the monetary aggregate M3 by 15 percent. However, unified German

GDP increased only 8 percent. At the time, the Bundesbank put the resulting monetary overhang at 5 percent (Baltensperger 1999, 479). This increase in M3 combined with the earlier rapid increases begun in 1987 explains the inflation rates of the early 1990s.

The Bundesbank did not pursue a stimulative monetary policy as it would have had to do in order to prevent the depreciation of the franc. In August 1992, in response to strong economic growth, the Bundesbank had raised the repurchase rate to almost 10 percent. Only when signs of recession began to appear did it lower rates significantly. When in July 1993 the franc fell to the level requiring central bank intervention, the Bundesbank did not lower its rates. Newly appointed Bundesbank president Hans Tietmeyer rejected the demand “that Germany must immediately abandon its monetary sovereignty” (Connolly 1995, 324).⁴⁶

Low real growth accompanied restrictive monetary policy. Annualized real GDP growth in Germany averaged only 0.8 percent over the years 1992 through 1997. In return, by 1998, German CPI inflation averaged less than 1 percent. French CPI inflation was also less than 1 percent in 1998. The social cost was high. In France, the unemployment rate was 9 percent in 1990 and 12 percent in 1993. In Germany, the unemployment rate reached 12 percent in 1998 (Figure 1).

Nevertheless, together, the Bundesbank and the Banque de France bequeathed a priceless gift to the new ECB. They created virtual price stability. If in 1999 the new ECB had put Europe through a recession in order to lower inflation, it might not have survived as an institution.

4. CAN THE ECB BECOME THE BUNDESBANK AND THE EURO THE MARK?

Can the ECB summon wide support for a policy of price stability? An affirmative answer will require that Europeans accept the ECB and its objective

⁴⁶ Figures 6 and 7 reveal high money growth in the early 1990s. However, that money growth corresponded to an unusually high demand for money associated with turbulence in currency markets and the view that the mark was immune from devaluation. It seems likely that the probable division of Europe into strong and weak currency blocks after the breakup of the ERM led to a general substitution into the DM. The DM also became a “parallel currency” in some East European countries (Baltensperger 1999, 482). Figure 8 shows the behavior of M3 velocity. Adjusted for trend, the demand for M3 (measured by the inverse of velocity) was reasonably stable through mid-1989. Velocity rose after unification. However, as indicated by the more steeply sloped trend line, money demand grew unusually fast beginning in 1992.

The high money growth step from 1991Q3 through 1994Q2 does not lead to a subsequent high inflation step—the only exception in the figure (Figure 7). Instead, inflation fell steadily beginning in 1993. Although the Bundesbank allowed M3 growth to exceed its target range in 1992 and 1993, the overshoot failed to compensate for the increased money demand. Starting in 1994Q3, the Bundesbank maintained trend M3 growth below 5 percent—a historically low rate.

of price stability as part of a constitutional framework. Such a framework limits government discretion. The clearest example of constitutional limitations on the sphere of government action is the protection of fundamental human rights. Freedom of speech is not subject to majority vote as part of the normal political process.

The alternative to making monetary policy part of the constitutional framework is to make the purchasing power of money subject to ongoing democratic debate. Just as they do for the farm subsidies of the European Union, constituencies would organize and lobby on behalf of the objective of “low” unemployment rather than price stability. If Europeans come to believe monetary policy should be part of the democratic process rather than a constitutional framework, they will see the ECB as undemocratic and elitist. Political attacks will then erode its legitimacy. To maintain its independence and support for the objective of price stability, the ECB must explain why a constitutional framework should constrain monetary policy.⁴⁷

The ECB can point out that in the 1970s, Europe pursued policies meant to manage real aggregate demand and achieve socially desirable low unemployment rates. Political pressures to reconcile conflicting objectives for low unemployment and price stability created a demand for incomes policies that would control the price setting of private markets. Such pressures threatened both central bank independence and free markets.⁴⁸

The Maastricht Treaty appropriately specified price stability as the objective for the ECB. However, the EMU’s geographical composition derives from a political, not an economic, consideration. Europeans desired an EU-wide symbol that would promote an EU-wide identity. The EMU is a mechanism to promote the political unification of Europe. But imposition of a common monetary policy on an economically diverse area entails a cost.

EMU member countries experiencing an adverse change in their terms of trade with other member countries will experience deflation.⁴⁹ Increasing the overall EMU-wide inflation rate to deal with periodic regional deflationary stresses will not avoid the need for real economic adjustment. Regional deflations will be the price incurred for a common symbol. They will not imply that the EMU or its objective of price stability is inappropriate.

⁴⁷ Otto Pfeleiderer (quoted in Buchheim 2002, 3), later a member of the BdL, expressed the alternative view in 1946. “Only the government itself could in a democracy bear responsibility for the principal measures of monetary policy...which is an important part of general economic policy.... There is the danger that the central bank would develop as a kind of second government. As such it would be able to counteract the economic policy aims of the responsible government.”

⁴⁸ A commitment to EU-wide free markets is the necessary precondition for the economic integration of Europe. Modern central banks like the Bundesbank control the price level through management of their balance sheet. They forswear the direct government interference in markets entailed by incomes policies.

⁴⁹ A specific example can clarify the issue. After the creation of the EMU in January 1999, the Euro depreciated due to outward capital flows, especially to the United States. However, for

Europeans now have the opportunity to make the Euro the kind of symbol that the DM was for Germany in the postwar period.⁵⁰ Europeans can now create the right future for the Euro to represent. The Euro can then become the symbol of a prosperous, democratic, and unified Europe.

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countries enjoying capital inflows within the EMU, that depreciation was not appropriate. For example, Ireland and the Netherlands experienced above-average EMU inflation rates, which kept their terms of trade with the rest of the world from deteriorating. The analogue to these countries for the United States was Argentina, which had a monetary union with the United States through its currency board. Due to capital inflows, the United States experienced an appreciation in its terms of trade. Because that appreciation was not appropriate for Argentina, which experienced capital outflows, it had to deflate.

⁵⁰ Germany endowed its 1948 currency reform with vitality by combining it with a vast deregulation, namely, an end to price controls. For Europe today, the analogous measure would be to deregulate its labor markets. Milton Friedman (1953, 187) identifies the major problem that governments must confront in a world of ongoing change: They must ignore "the urge for security that is so outstanding a feature of the modern world and that is itself a major source of insecurity by promoting measures that reduce the adaptability of our economic systems to change without eliminating the changes themselves."

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