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## Inflation in the European Community: A Study Before and After German Unification

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**INFLATION IN THE EUROPEAN COMMUNITY:  
A STUDY BEFORE AND AFTER GERMAN UNIFICATION**

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April 25, 1994

## I. INTRODUCTION AND HISTORY<sup>1</sup>

During the last half of the twentieth century, the global economy has been undergoing monumental change, as the world is dividing into three regional economic zones: the Pacific rim; North America; and, the European Community (EC). Though it is important to analyze the relationships between these three economic players, it is also necessary to study the relationships among the member nations of each bloc to determine the effect on the nations participating in the bloc as well as the activities of the single unit. The tight economic relationship formed when several sovereign nations form a union, like the EC, has a great impact on each country's domestic economic policies. In The Economics of European Integration, Willem Molle states that,

Interdependence of national economies means that developments on the national scale are apt to have spillover effects in partner countries, each country giving impulses and feeling the impact of impulses in other countries (151).

So, when nations form an economic union, each country's domestic economic decisions affect the other nations in the group, as well as the union's success in achieving economic goals as a single unit.

Following this idea of intra-bloc study, I focus on two interrelated events in this project. First, I examine inflation rates in the EC from 1971 through 1990. This time period permits me to analyze inflation rates in the EC during a period when three different exchange rate systems were implemented in the

Community. Moreover, I determine one aspect of Germany's role in the Community, before German unification, by noting the pattern of inflation rates of the EC members relative to German inflation rates. Second, I examine the extent to which German unification has affected the pattern of inflation rates in the EC, by studying German and EC members' inflation rates after German unification.

#### **A. HISTORY OF EXCHANGE RATES IN THE EC**

The early 1970's were not good years for the countries that now make up the EC, as they experienced high inflation and unemployment rates, along with low levels of economic growth and investment (Tsoukalis, 36). In April 1972, just a short time before the collapse of Bretton Woods in 1973, the EC implemented an exchange rate system to encourage exchange rate stability. This new system was known as the snake and its objective was to "...maintain bilateral exchange rates within relatively narrow margins" (Tsoukalis, 36-39). The EC countries who were members of the snake mechanism implemented a band of 2.25%, which allowed the currencies to fluctuate (plus or minus 2.25%) around an exchange rate parity (Harrop, 181). The EC countries wanted exchange rate stability in order to facilitate the trade of goods among countries, help the EC member nations accomplish their individual goals of reducing domestic inflation, and provide for the integration of capital markets and eventually monetary union (Harrop, 178-179).

However, the success of the snake was short-lived and by

1976, this mechanism only contained five members (W. Germany, Denmark, Belgium, Netherlands, and Luxembourg) and became known as the mini-snake (Bulmer, 63). Clearly, a new exchange rate mechanism had to be implemented in the Community if exchange rate stability was to be achieved. In 1979, the EC expanded on the idea of the snake mechanism and formed the European Monetary System (EMS). The EMS is classified as a "fixed exchange rate with a band" (Salvatore, 611).<sup>2</sup>

Like the snake, the EMS creates an environment for stable exchange rates, as well as forces "alignment of inflation rates" (Molle, 158-159). Though similar to the snake, the EMS differs in that, "...the European Currency Unit (ECU) has replaced the earlier units of account...it provides the basis of the divergence indicator...it is a means of settlement between monetary authorities of the Community" (Harrop, 185).

#### **B. GERMANY AS THE EC'S TARGET ECONOMY**

Before German unification, which officially took place in 1990, W. Germany was the main economic and policy-making force in the EC. This fact is noted in The Federal Republic of Germany and the European Community. "The Federal Republic of Germany is the strongest national economy in the European Community" (Bulmer, 1). The beginning of W. Germany's rise to power is associated with the establishment of the snake mechanism, and increased as the EC established new forms of an exchange rate mechanism (Tsoukalis, 38-39). In fact, according to Jeffrey Harrop, before unification, "W. Germany is the dominant economy in the Community

and the pivotal force, so that economic policy in the EC is influenced very much by the German example" (Harrop, 207).

During this period, W. Germany became the target economy with respect to inflation of the EC members for several reasons. First, W. Germany had a strong currency which the other economies could use as a peg. The EC countries wanted to use Germany's discipline to help control their own inflation because they knew W. Germany would not inflate. Since W. Germany would not inflate, the fixed exchange rate system with a band forced the other countries to reduce their inflation, given the large amount of trade between W. Germany and the other EC members. In addition, because the others knew W. Germany would not inflate, they would begin to change their policies quickly when exchange rate pressures arose because they knew Germany would not change its policy to allow more domestic inflation. If these EC countries had refused to change their policies quickly, sooner or later, they would have had to drop out of the exchange rate mechanism. In addition, Germany's large economic size and wealth enabled it to help EC members make these adjustments. Finally, the EC members wanted to use W. Germany's discipline to help control their own inflation, because W. Germany had strong policies to control its own domestic inflation (Tsoukalis, 184).

W. Germany was successful at keeping inflation low for two reasons. First, Germany feared inflation as it recalled its own experiences of the early 1900's. During the Weimar government, inflation took hold of the German economy. From 1921 through

1923, Germany experienced severe hyperinflation. This disaster began because the German government printed money in order to finance its expenditures. As a result, by 1923, prices escalated to 1.5 trillion times greater than their 1914 level (Childs, 38 and Kohn, 1). During this period, inflation rates were rising by the hour, and the longer people held their cash, the more value it lost. After its experience with hyperinflation, Germany deeply feared the threat of inflation, so it was willing to make other sacrifices, such as higher unemployment, to ensure low rates of inflation.

Due to its historical experiences, W. Germany established the Bundesbank, the central bank of W. Germany, which was made independent from elected government officials and from changing political interests (Bulmer, 62). And "By law, the primary task of the central bank is to 'safeguard the currency' (prevent inflation)" (Sandholtz, 12). So, prior to German unification, it is understandable why the EC members believed Germany would not inflate.

In addition, because Germany had been plagued with hyperinflation in the past, it took an early leadership role in the Community, partly to help protect its own economic interests while advancing the interests of the EC. For example, as early as 1969, W. German representatives to the EC declared that in order to keep inflation under control, it was first necessary to focus on convergence of economic factors, such as inflation, among EC member countries, and second, monetary union. German

leaders emphasized that if the EC concentrated on monetary union and then economic convergence, there would be a greater risk of promoting high inflation (Bulmer, 62-62).

### C. GERMAN UNIFICATION

It is understandable why the EC countries expected Germany to keep low inflation rates and a stable economy prior to unification. However, German unification has upset the stability of the German economy. Consequently, unification has cast doubt on Germany's role as an economic leader in the EC.

The momentous event of German unification actually was several years in the making and was realized as a legitimate possibility in the late 1980's. The speculation came true in July of 1990 when intra-German monetary union took place, while formal unification was declared on October 3, 1990 (Burstein, 209-210).

Because unification was such a huge undertaking, it had a tremendous impact on the state of the economy as well as on the economic policies of the new country. An early effect of German unification was an increase in public spending. In 1991 W. Germany transferred nearly DM 140 billion to E. Germany in an attempt to rebuild and update its economy. This transfer put the public sector deficit at an estimated 4.5% of GNP (Barrell, 150-153; and, The Economist, 7 Dec. 1991, 96). In addition, Germany's GDP growth faltered. From 1981 through 1990, W. Germany's average GDP growth rate was 2.3% per year. At the end of 1992, W. Germany's GDP growth had fallen to -0.2%, while as of



quarter three of 1993, it was at -1.4% (The Economist: 5 Feb. 1994 and 20 Mar. 1993, back cover). The increase in deficit spending along with the need to stimulate the economy has resulted in increasing levels of inflation for unified Germany, where quarterly annualized inflation rates have reached a high of nearly 8% (DSC Data Services).

As a result of the current German economic conditions, Helmut Schlesinger, head of the Bundesbank, has stated that Germany's top priority now is to regain a stable national economy and not its policy effects on EC members. Schlesinger defends his stance by emphasizing that, "There's no possibility of helping our partner countries by allowing more inflation in Germany" (Javetski, 34-35). This statement illustrates Germany's current lack of control over inflation.

## II. THEORY AND HYPOTHESIS

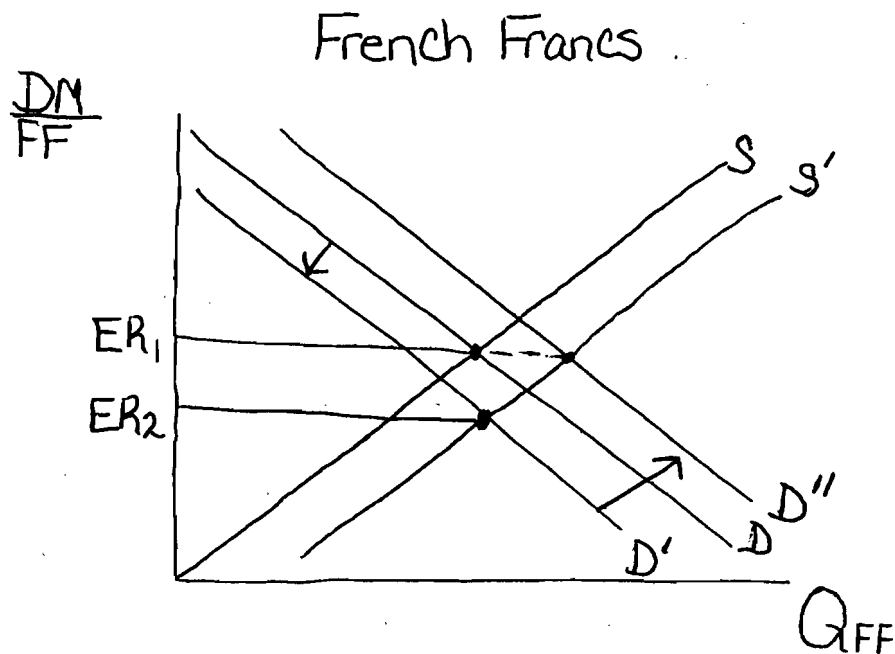
### A. THEORY

The implementation of a fixed exchange rate system is expected to cause inflation rate convergence in the EC. This expectation is based on the economic theory of fixed exchange rates. To understand the relationship between fixed exchange rates and inflation rate convergence, let us examine the international currency market under a pure fixed exchange rate system. The results can later be adapted to the EC system of a fixed exchange rate with a band.

The following example explains step-by-step what happens

when inflation rates differ between countries which operate under a fixed exchange rate system. For simplicity, France and Germany are the only two countries in this model. Assume that France is experiencing a higher rate of inflation than Germany because of its use of expansionary monetary policy. Since prices in France are rising, French goods are now relatively expensive compared to German goods. To French consumers, the relatively cheap German goods now look more attractive compared to French goods, while to German consumers, French goods now look relatively unattractive. Consequently, France increases its imports from Germany. When French consumers buy more German goods, they need more marks in order to pay for them. They pay for those marks with francs. Therefore on world currency markets, demand for German marks increases, and supply of French francs increases. Because French goods are now relatively expensive to Germans, Germany decreases its imports from France. This decrease in French imports leads to a decrease in demand for French francs and a decrease in supply of German marks.

The following graph represents the international currency market for French francs.



Here, the exchange rate, marks per franc, is represented on the Y-axis, while the quantity of francs is represented on the X-axis.  $ER_1$  is the beginning exchange rate and is determined by the equilibrium of the supply and demand curves for French francs ( $S$  and  $D$ ). As France increases its imports from Germany, its supply of francs increases as explained above. This increase in supply of francs is shown by an outward shift of the supply curve to  $S'$ . In addition, because Germany's desire for French imports decreases, its demand for French francs also decreases. This is shown by a downward shift in the demand curve to  $D'$ . From these shifted supply and demand curves, the new equilibrium exchange rate is  $ER_2$ . The value of the franc has fallen relative to the mark.

If France and Germany operate under a fixed exchange rate system, then the exchange rate is not allowed to fall. Consequently, France must defend the franc, so the French government buys francs and sells marks. The French government will continue this intervention until the exchange rate returns to its original level,  $ER_1$ . This process is shown on the graph by an outward shift of the demand curve, to  $D''$ , which pushes the

exchange rate back up to its original level.

This process of government intervention appears to be a feasible solution to defending a currency under a fixed exchange rate system, but it has one shortcoming which makes it impossible. The French government cannot continually buy francs by selling marks because it will eventually run out of marks!

Under a fixed exchange rate system, the country with the higher inflation, France, has a serious problem because it cannot continually defend its currency. However, the country with the lower rate of inflation, Germany, can intervene in this market by selling marks, because it will not run out of marks! Consequently, France must be fiscally responsible and tighten its domestic policy in order to reduce its inflation.

This theory demonstrates why under a fixed exchange rate system, countries may not have persistent differing rates of inflation. Although the EC does not operate under a truly fixed exchange rate system, this theory is still applicable to the EC in explaining why the inflation rates of its member nations should converge. Because there is a band of fluctuation around the fixed exchange rate in the EC, slight temporary inflation rate differences may be tolerated; however, inflation rates should still converge within narrow limits.

## **B. HYPOTHESES**

Due to the evolution of the exchange rate systems in the EC, as well as the differences in the German economy before and after unification, I have formed two hypotheses. First, I test the

hypothesis that before 1991, the implementation of a fixed exchange rate system with a band in the EC along with a strong, stable German economy, led to inflation rate convergence by the EC member nations to German inflation rates. Second, I test the hypothesis that German unification, which has had a destabilizing effect on the German domestic economy through increased deficit spending and declining growth rates, resulted in inflation rate divergence from Germany by the EC member nations, because the EC member nations can no longer be assured that Germany will maintain low rates of inflation.

### III. RESEARCH DESIGN

The analysis which tests my hypotheses uses annual and quarterly inflation rates from 1970 through 1993. The inflation rates are calculated from GDP deflator data, which are taken from the World Tables 1992, published by the World Bank, and TSM Global Economic Data Base as of December 1993, published by DSC Data Services. The hypotheses are tested by using several graphs, two F-tests, and one regression model.

### IV. RESULTS

#### A. FIRST HYPOTHESIS

The results derived from testing my first hypothesis show, in the following four graphs, that when a stable and successful exchange rate mechanism was installed in the EC, coupled with a strong German economy, EC member nations' inflation rates declined and converged to German inflation rates.

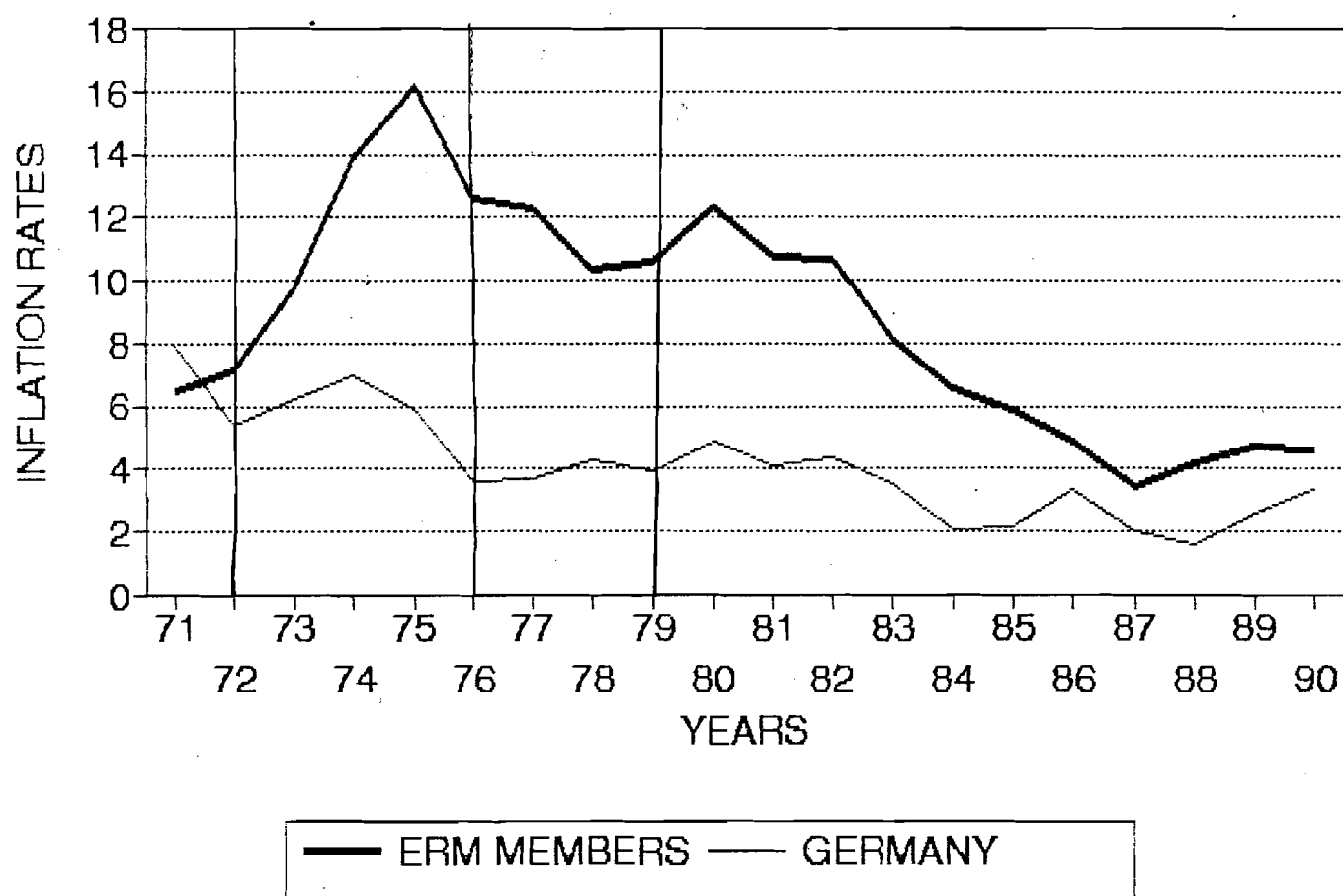
In the following graphs, part of the analysis uses a

weighted mean of EC members' inflation rates. Only EC members that participated in the exchange rate system are included in the weighted mean. The weighted average is based upon each country's percentage share its currency held in the ECU basket as of October 1990.<sup>3</sup> On the following graphs, the vertical lines are placed on the years 1972 (snake in place); 1976 (mini-snake in place); 1979 (EMS in place); and 1990 (German unification).

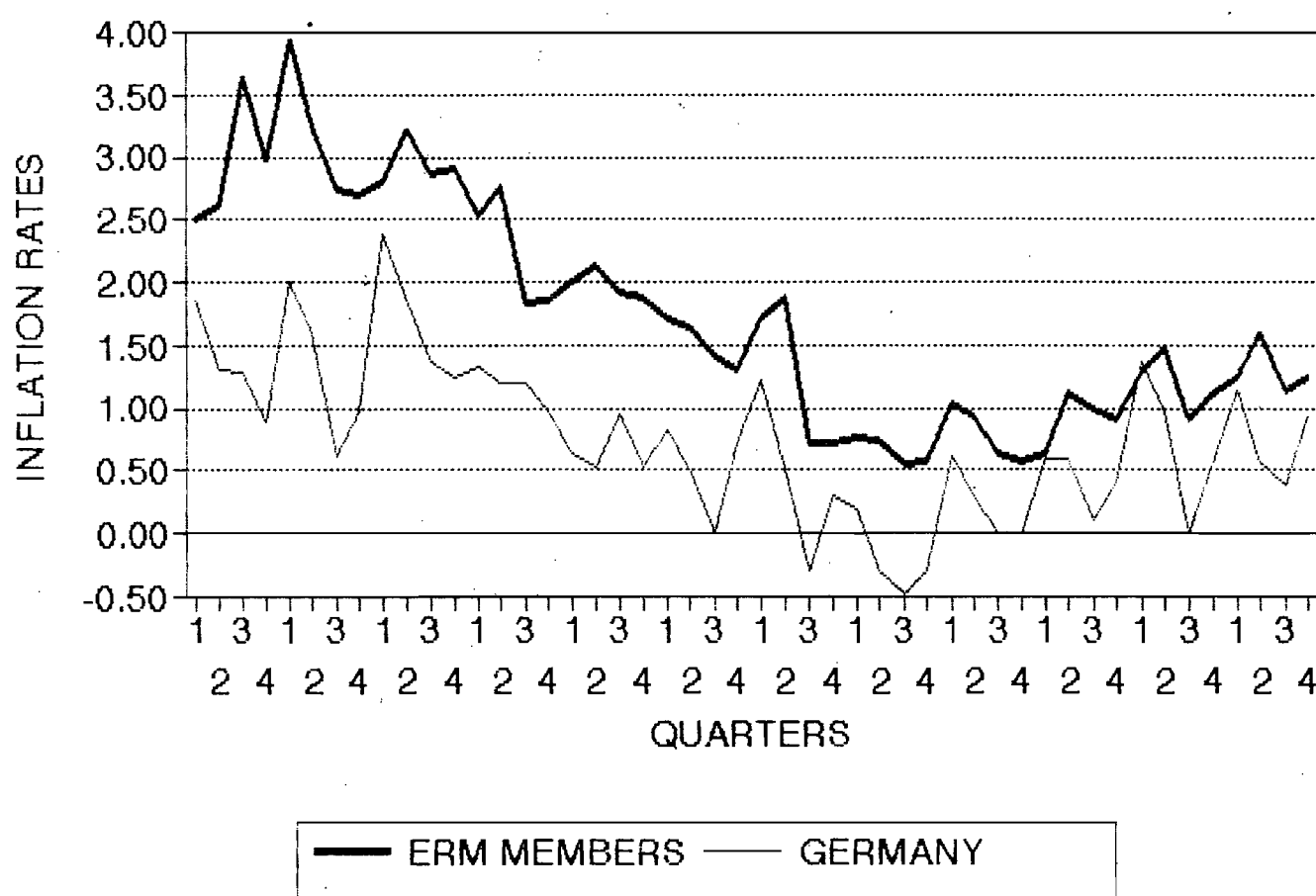
Figure 1 (p. 13), ERM Weighted Mean and German Inflation Rates: 1971-1990, shows inflation rates of ERM members compared to inflation rates of Germany. This graph shows Germany's success at keeping its rate of inflation low, as well as the decline of the ERM members' weighted mean inflation rate and convergence to the German inflation rate. The graph shows that Germany consistently ensured low rates of inflation by not allowing its inflation rate to rise above 8%, and for fifteen out of twenty years keeping it under 5%. During the unsuccessful years of the snake (1972 to 1976), the ERM members' weighted mean inflation rate escalated above 16% and diverged from the German inflation rate. From 1976 to 1979, the mean inflation rate declined and began to head for the low German rate. After the implementation of the EMS in 1979, the pattern of decline of the ERM members' inflation rate is strongest. While the German inflation rate stayed low, the ERM members' weighted mean declined, resulting in the convergence towards the German inflation rate.

Figure 2 (p.14) shows the trend of quarterly inflation rates from 1979 to 1990 for the ERM members and Germany. Though

## ERM WEIGHTED MEAN AND GERMAN INFLATION RATES 1971-1990



## ERM WEIGHTED MEAN AND GERMAN QUARTERLY INFLATION RATES 79-90





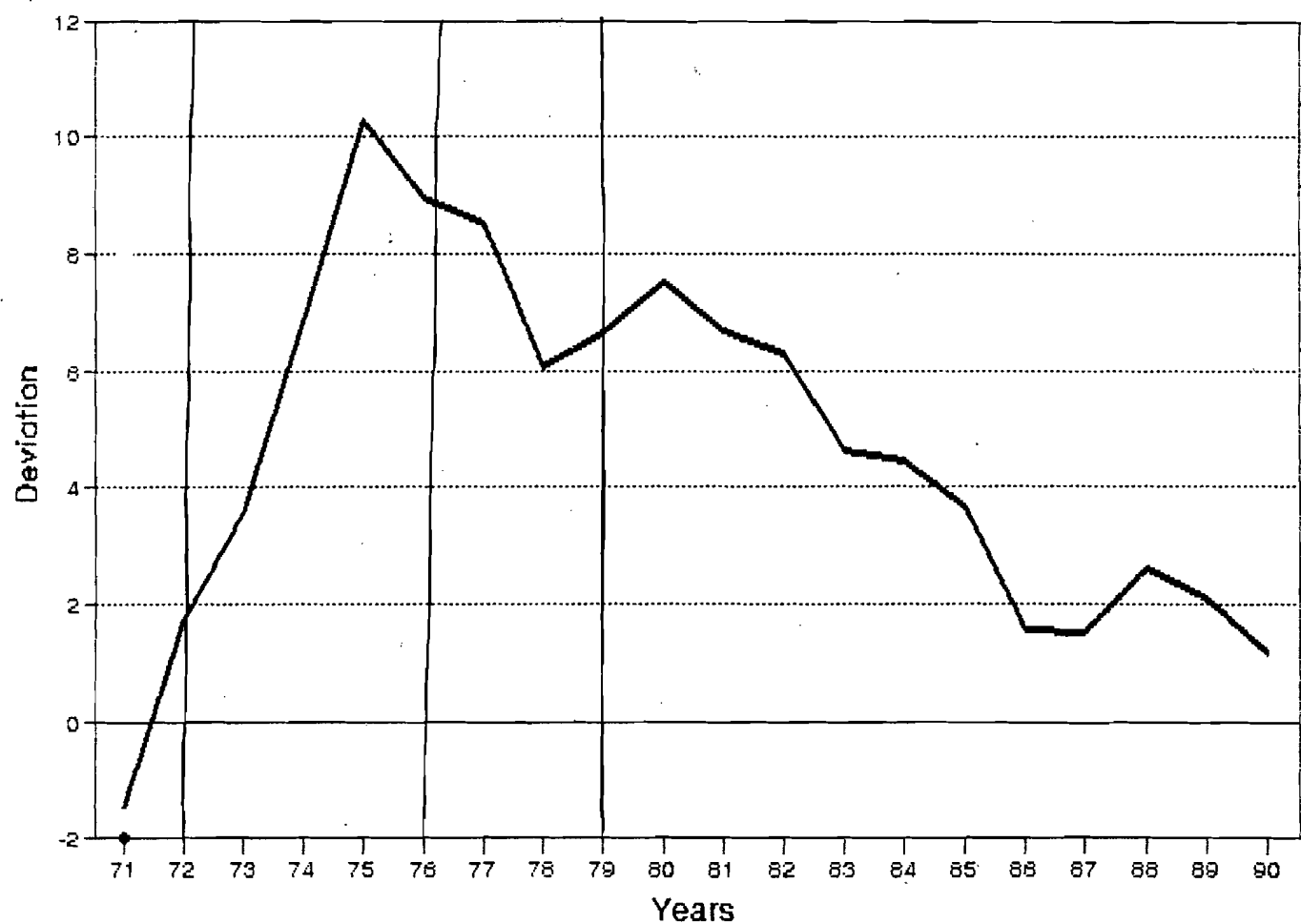
quarterly inflation rates tend to fluctuate more than annual rates, the data show that Germany kept a low rate of inflation before unification. In addition, the quarterly rates for the ERM members started out relatively high, but moved downward towards the German rates. It is also seen in this graph that in many of the quarters, the ERM members' and German inflation rate moved together.

Figure 3 (p.16) further illustrates the convergence of ERM inflation rates to German rates. From 1972 to 1976, the difference between the ERM members' mean inflation rate and Germany's inflation rate diverged and over each year grew farther apart. From 1976 to 1979, inflation rate convergence began with a decline in the mean inflation rate's deviation from the German rate. The greatest convergence is realized in between 1979 and 1990. Overall, the mean's deviation from Germany declined during this period from a high of over 7% in 1980 to a low of nearly 1% in 1990. The data on this graph clearly show that inflation rates of EC member countries converged to German rates under the EMS.

Support is also found for the first hypothesis by studying Figure 4 (p.17). By graphing the standard deviation of inflation among the EC countries for each year, the conclusions from the previous graphs are reinforced. Again, inflation rates diverged from 1972 to 1976 and after 1979 began to converge.

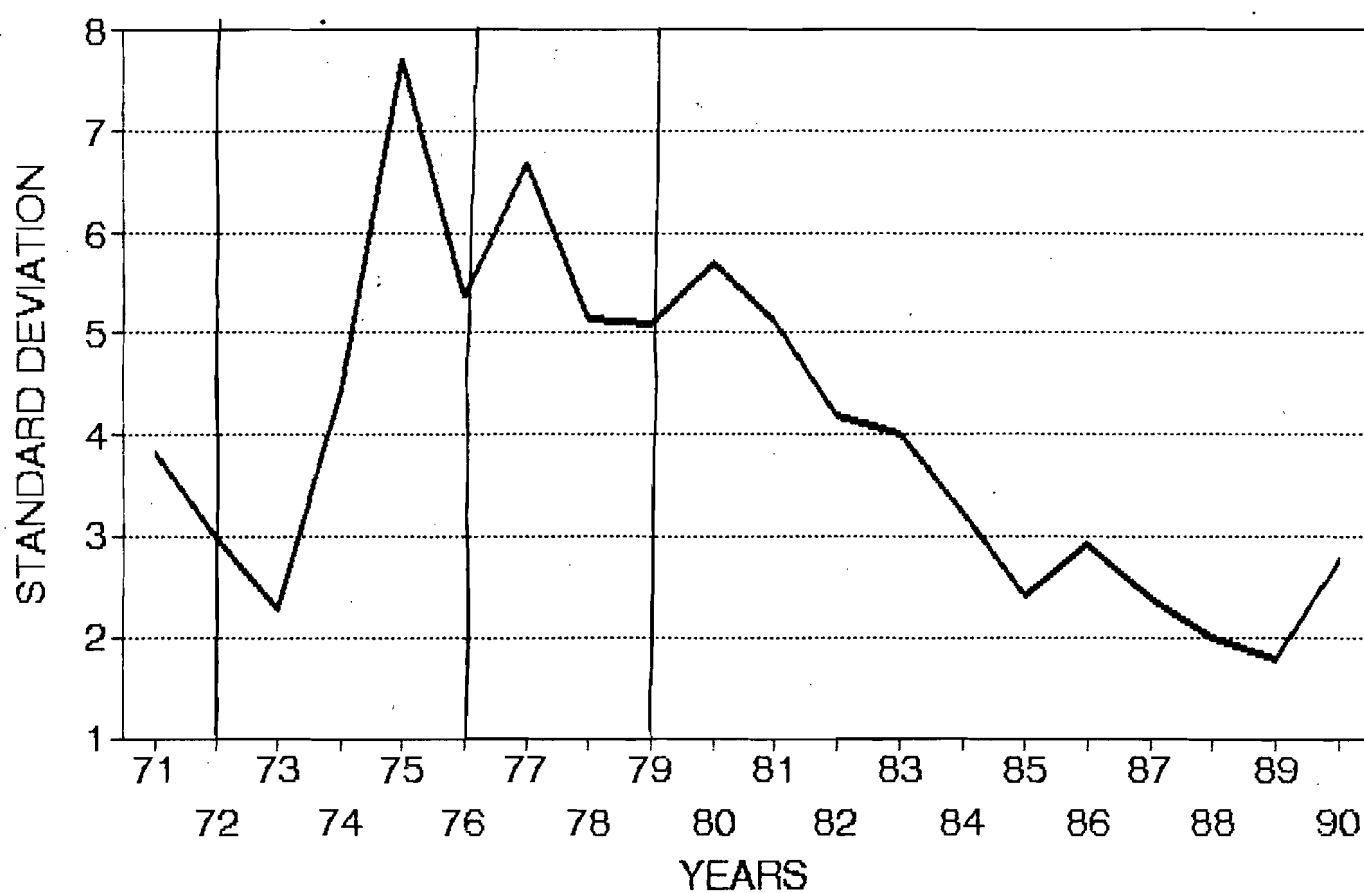
A statistical test of the standard deviations of inflation comparing the standard deviation under different exchange rate mechanisms confirms convergence of inflation rates. Using a two-

# ERM MEAN INFLATION RATE AS A DEVIATION FROM GERMANY '71-90



# STANDARD DEVIATION OF INFLATION

## ALL ERM COUNTRIES 1971-1990



tailed test about variances of two populations, I compare the variance from the last year of each exchange rate mechanism (1975, 1978, and 1990). The last year is used in order to measure the full effect of each exchange rate system. Pairwise comparisons of the variances are made. The relevant F statistic is:  $F = \text{variance}_t / \text{variance}_{1990}$ , where t is 1976 and 1978.

The results of these F tests, presented in the following table, show that there is a statistically significant difference between the variances of the time periods.

<u>Time Period</u>	<u>F-Statistic</u>	<u>Significance Level</u>
1976 compared with 1990	7.83	0.05
1978 compared with 1990	3.48	0.05

The descriptive statistics shown in Figures 1 through 4, as well as the F test results, support my first hypothesis by showing a decrease in ERM members' weighted mean inflation rates; convergence to German rates; and, a smaller dispersion among rates over time.

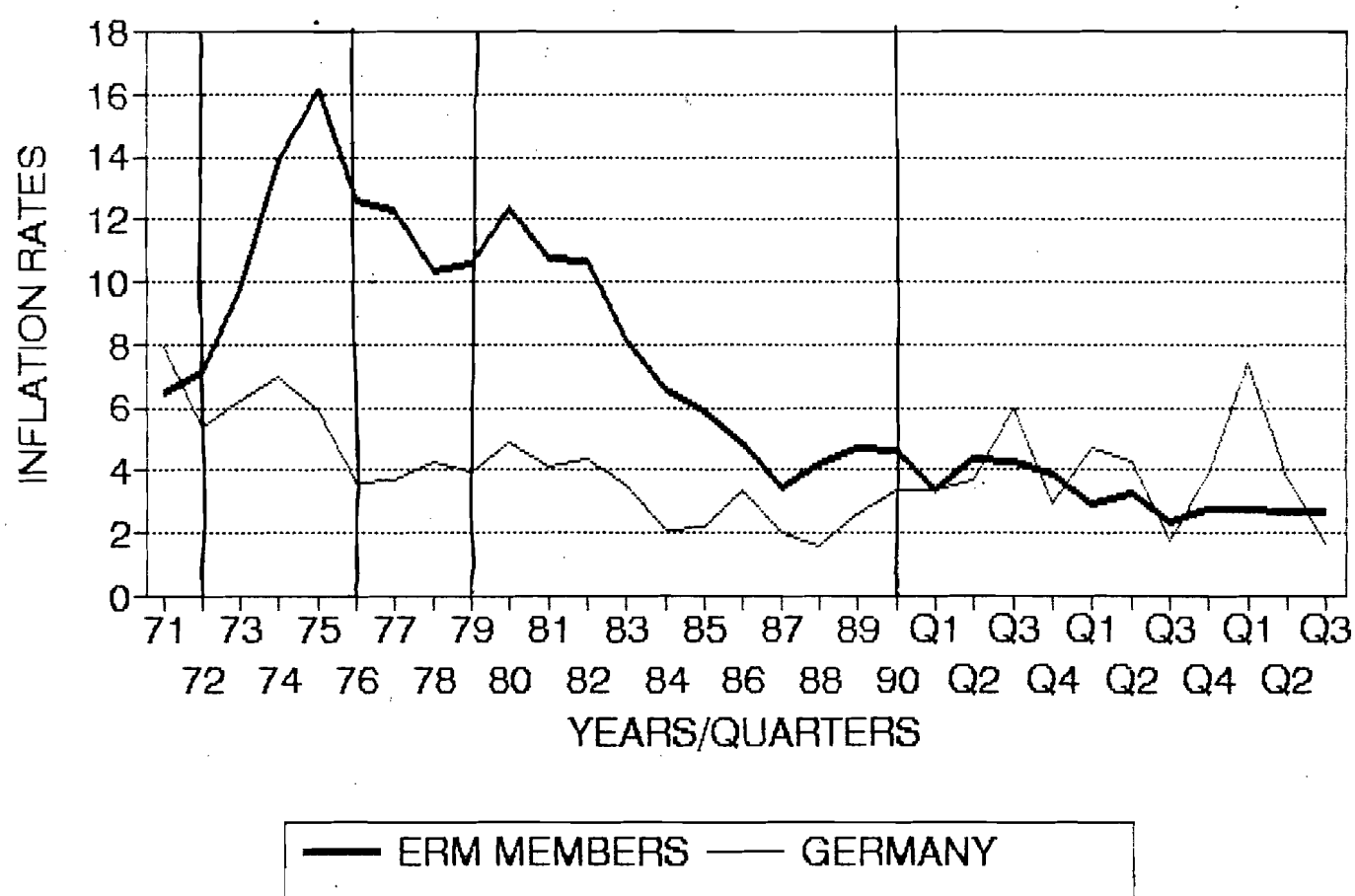
Because Germany kept a consistently low rate of inflation during this period, the EC members targeted Germany's inflation rates as their goal. Germany was a stable anchor to which these other countries could peg their inflation rates because they were assured Germany would not inflate.

## B. SECOND HYPOTHESIS

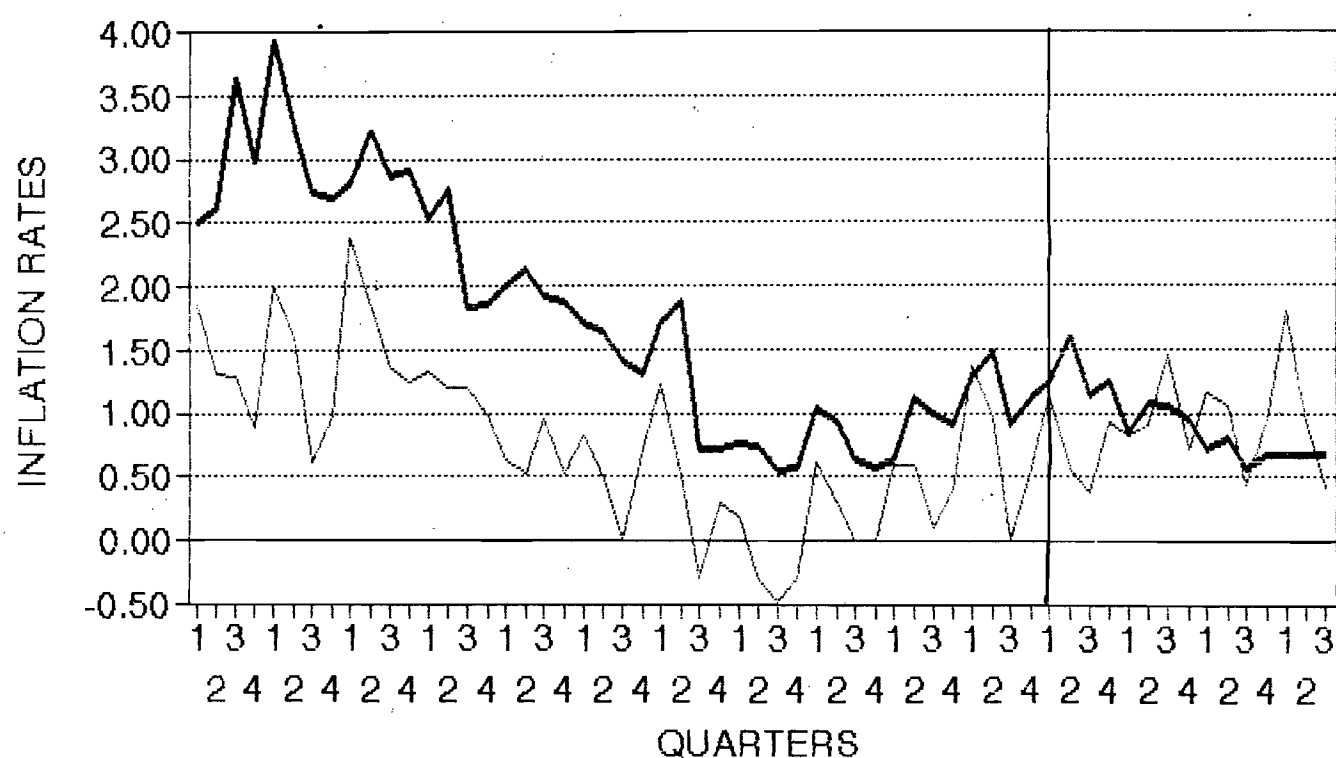
The second hypothesis states that because unification has had a destabilizing effect on the German economy, inflation rates of the EC members diverged from the German inflation rates. Each of the following four figures show pre and post German unification data. Figure 5 (p. 20) compares ERM members' weighted mean inflation rates to those of Germany. After the 1990 data, this graph plots quarterly inflation rates, which have been annualized, from the first quarter of 1991 through the third quarter of 1993.<sup>4</sup> In quarter one of 1991, there was complete convergence of inflation rates between the ERM members and Germany. Following the ERM members' data through the post unification period shows that after a slight increase in the average inflation rate, it fell and held steady throughout this time period. By studying Germany's data, it is clear that Germany did not keep a steady rate of inflation after unification. In fact, its inflation rate is fluctuating about the average ERM rate. Unlike what is present pre-unification, post-unification Germany no longer has a consistent inflation rate and no longer pulls the ERM inflation rate toward its own. In fact, Germany's inflation rate rises above the average for the first time since 1971 and it is nearly 4% above the average in the first quarter of 1993.

Figure 6 (p.21) also demonstrates support for the second hypothesis. It shows the ERM weighted mean inflation rate and the German rate for each quarter from 1979 to 1993. Like the previous graph, after unification, Germany's rate fluctuated

# ERM WEIGHTED MEAN AND GERMAN INFLATION RATES 1971-1993



## ERM WEIGHTED MEAN AND GERMAN QUARTERLY INFLATION RATES 79-93



— ERM MEMBERS — GERMANY

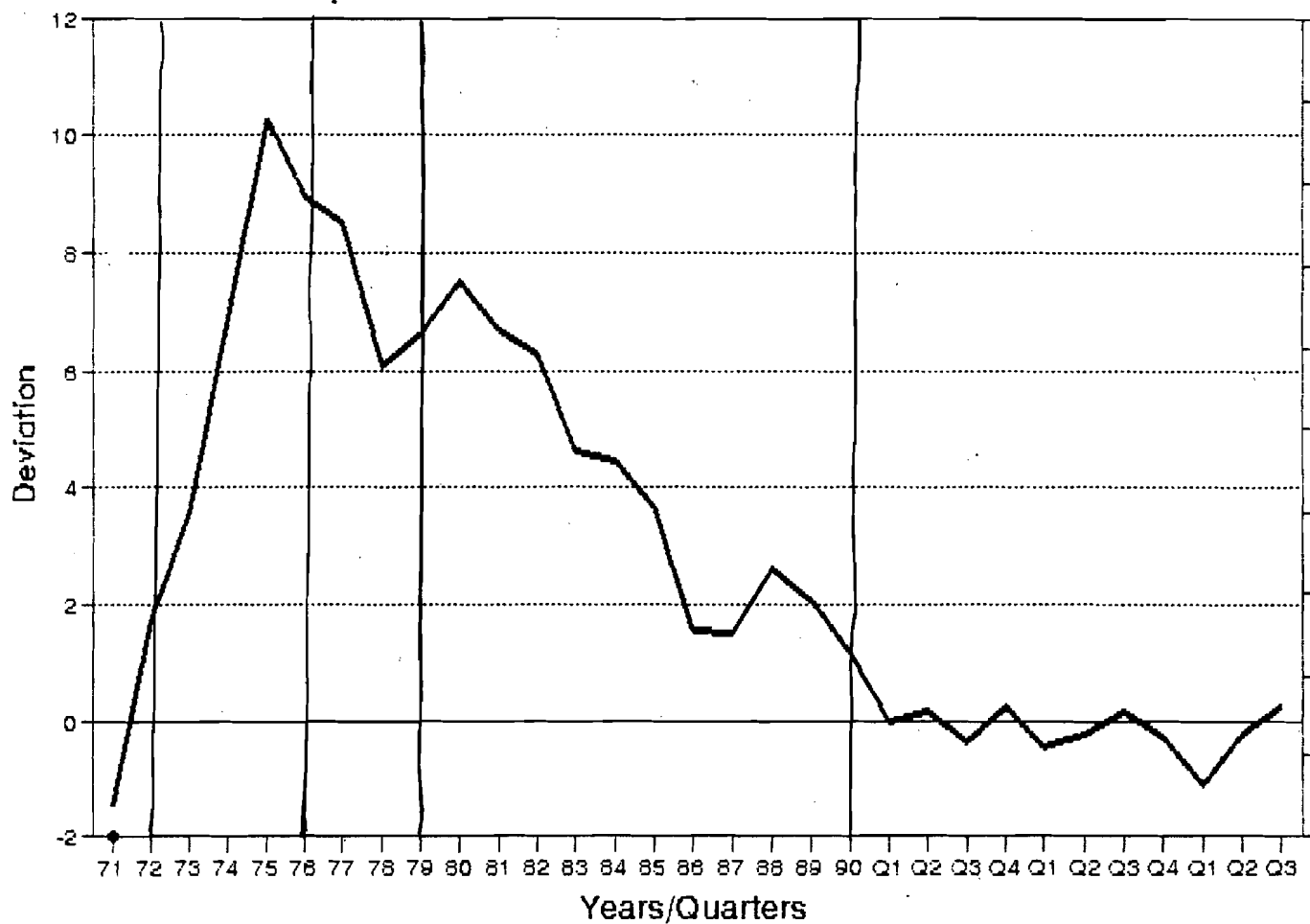
sporadically around the average ERM members' rate. Again, the differences between pre and post German unification are apparent. Before unification, quarterly inflation rates of the ERM members were drawn towards the lower German rates, and the inflation rates between the two moved together. After complete convergence of these rates in quarter one of 1991, the ERM members' rates declined. Germany's inflation rates fluctuated more and were consistently higher than the ERM weighted mean inflation rate.

Figure 7 (p.23) shows that after the EC implemented the EMS in 1979, but before German unification, there is a downward trend in the mean's deviation from the German inflation rate, showing convergence of rates, with complete convergence occurring in the first quarter of 1991. After German unification, there is no longer a trend in the ERM member's deviation from the German inflation rate, which shows that after unification, Germany is no longer an anchor for the other EC countries. These results demonstrate not only the impact unification has had on Germany's domestic economy, but also the effect on the EC's inflationary trends. Before German unification, Germany's inflation rate was less than the mean rate. After unification, the mean inflation rate is less than Germany's rate, most of the time. Germany cannot possibly be serving as an anchor after unification.

Figure 8 (p.24) plots the standard deviation of inflation rates among the ERM members from 1971 through 1993. The graph shows a downward trend of standard deviations beginning in 1979 until unification. After unification, it shows an upward trend of standard deviations, indicating an increased dispersion of

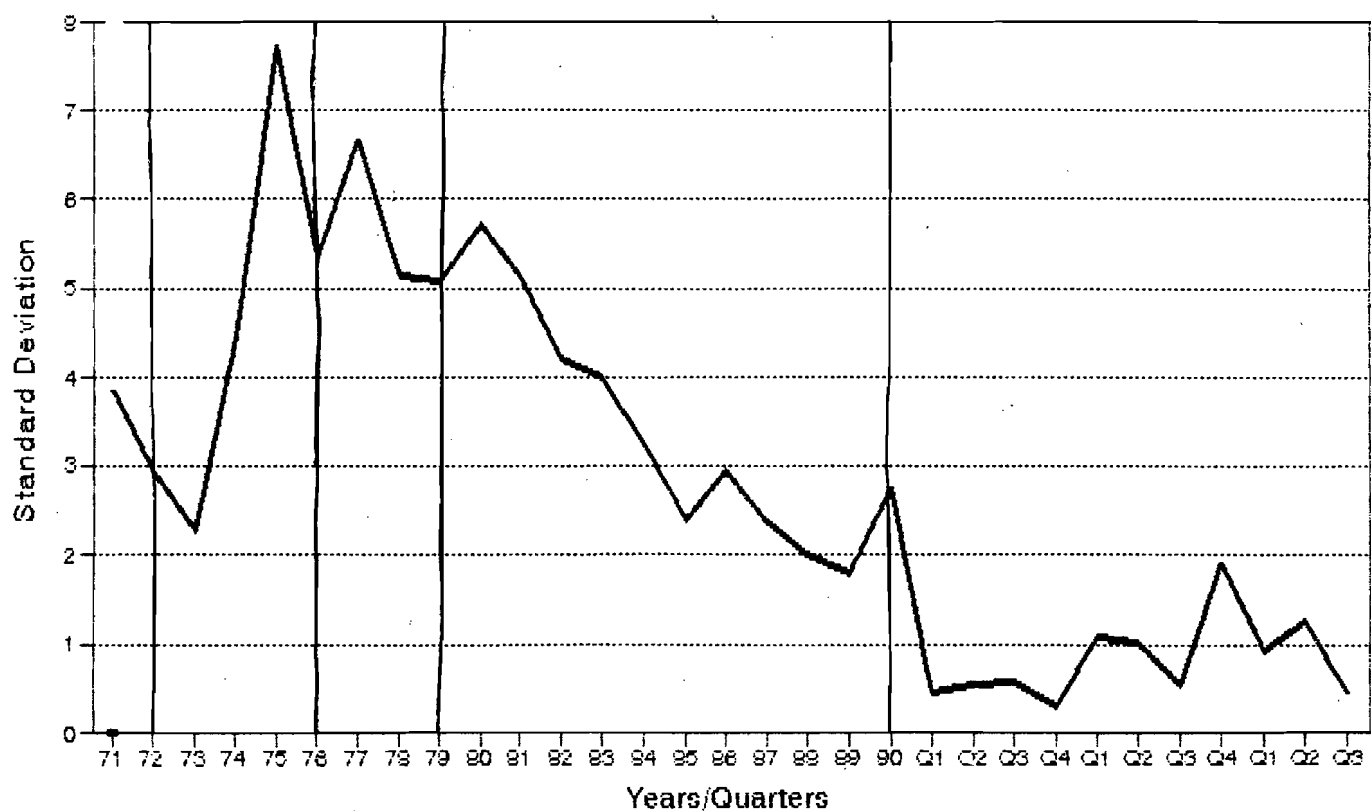


# ERM MEAN INFLATION RATE AS A DEVIATION FROM GERMANY '71-93



# STANDARD DEVIATION OF INFLATION

## ALL ERM COUNTRIES 1971-1993



inflation rates.

Applying an F-statistic test of variances shows a statistically significant difference between the pre and post unification variances of inflation. Because the post unification period has no exact ending point, I calculated one standard deviation by pooling data over the last four quarters of the time period. (Quarter four of 1992 through quarter three of 1993.) For the pre-unification time period, I calculated the data in the same way, by pooling from the four quarters of 1990. Here,  $F = \text{variance}_{1990} / \text{variance}_{92-93}$ . The test yields an F-statistic of 3.6, which is statistically significant at the 0.05 level. This shows that Germany is no longer the anchor for the other EC countries. The rates of inflation are no longer converging to the German inflation rate.

A regression analysis of the standard deviation data confirms that the inflation rates converged until unification and diverged afterwards. The model is represented by the following equation:

$$\text{Standard Deviation} = \alpha + \beta_1 \text{Time} + \beta_2 \text{Dummy} + \beta_3 (\text{Time} \times \text{Dummy})$$

The following definitions explain each variable:

1. The dependent variable is standard deviation. This is the quarterly standard deviation of inflation of all ERM countries from 1979 through 1993.
2.  $\alpha$  represents the constant.
3. The Time variable is the quarters (1979-1993), numbered in consecutive order.
4. The Dummy variable differentiates between the pre

and post German unification years. Every quarter from 1979 through 1990 is designated as "0", while each quarter from 1991 through 1993 is designated as "1".

5. The Time x Dummy variable is the result of multiplying, for each quarter, the number in the Time variable column by the number in the Dummy variable column.

The following table presents the regression results.

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>T-Stat</u>	<u>Prob.</u>
Constant( $\alpha$ )	1.47109	17.0878	0.000
Time( $\beta_1$ )	-0.02099	6.8622	0.000
Dummy( $\beta_2$ )	-3.92032	2.5850	0.012
TimexDummy( $\beta_3$ )	0.08171	2.9019	0.005

These results support my two hypotheses. The pre unification results are interpreted by examining  $\beta_1$  which equals  $\sigma$  standard deviation/ $\sigma$  time. I expect  $\beta_1$  to be negative because theory predicts that before unification, inflation rates converged to German rates and the dispersion among the rates decreased. The result is consistent with this expectation as  $\beta_1 = -0.02099$  and is significant. The post unification results are represented by  $\sigma$  standard deviation/ $\sigma$  time =  $\beta_1 + \beta_3$ . I expect the sum of  $\beta_1$  and  $\beta_3$  to be greater than zero, because Germany is no longer serving as an anchor after unification. Again, the regression results are consistent with expectations where  $\beta_3$  is significant and the sum of  $\beta_1$  (-0.02099) and  $\beta_3$  (0.08171) equals 0.06072.

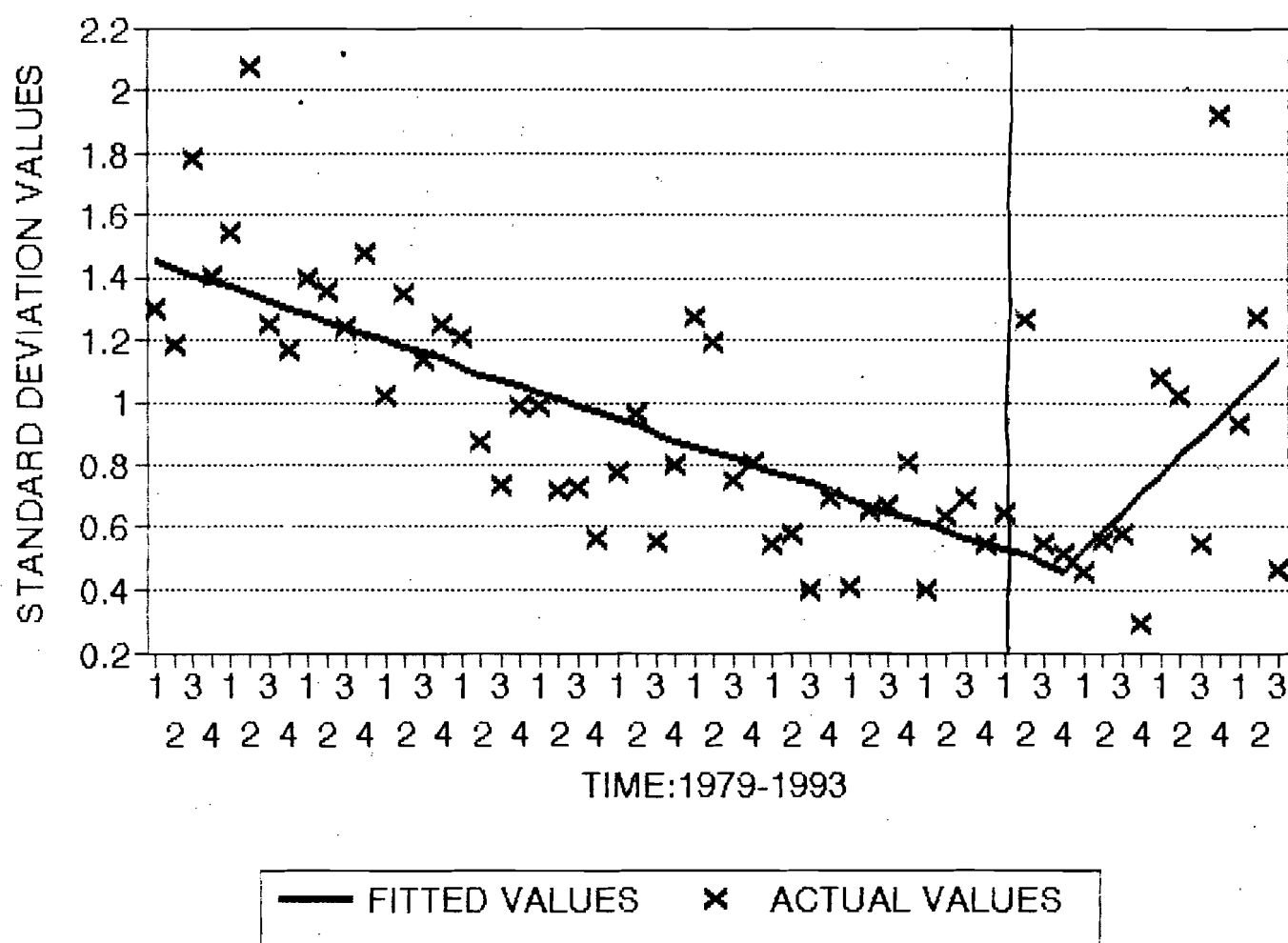
The graph entitled Regression Results (p.28) depicts the trend resulting from running the regression model. These data show that before unification, the standard deviation of inflation of the ERM members declined, showing a convergence of inflation rates among these countries. After unification (shown by the vertical line), an upward trend exists, showing an increased dispersion of inflation rates among the ERM countries.

In conclusion, each graph, F-test, and regression support both hypotheses. Together, all of the results show Germany's strong presence in the EC before unification, as the anchor to which the other member nations' inflation rates converged. After unification, the German domestic economy has undergone distinct changes, including increased rates of inflation relative to pre unification. With regard to EC members' rate of inflation, Germany is no longer in the anchor position it was before unification, and inflation rates are no longer converging to the German rates of inflation.

#### **IV. CONCLUSIONS AND IMPLICATIONS**

The results confirming the first hypothesis show that as a stable exchange rate mechanism was put into place in the EC, coupled with a strong German economy, that inflation rates declined; the dispersion among the rates grew smaller; and, inflation rates of the EC members converged to the low German inflation rates. These results support the idea that Germany served as an anchor for the EC countries. The results also confirm the second hypothesis. EC countries' inflation rates diverged from the German rates after unification. There was

# REGRESSION RESULTS



increased dispersion among inflation rates. These results support the idea that Germany is no longer the anchor, with respect to inflation for the EC countries.

Several questions and implications arise from this lack of German economic leadership in the Community after unification. One result of Germany's decreased leadership status is that the EC's economic and policy making system will become more symmetrical. Though the EC communities may be adversely affected in the short-run as a result of these hardships in unified Germany, some believe that they may gain more long-term decision-making power in the EC, causing a greater community-wide coordination of policies (Tsoukalis, 205; and, Templeman, 51-54).

Perhaps one of the most critical issues resulting from this diminution of German leadership deals with the future of the EC. More specifically, because Germany is focusing more on national interests than on its EC economic interests, is it possible for monetary union to be implemented in the Community by the proposed deadline if there is no economic leader in the EC? Due to the range of problems in the EC, a committee decided in early August 1993 to abandon the 2.25% band of the ERM and switch to a 15% band. This move could inhibit the final phase of monetary union, which is scheduled to take place in 1997. For this union to take place, a prerequisite was established stating that currencies are required to stay in the 2.25% band for at least two years prior to union (The Economist, 7 Aug. 1993, 21-22). Because of these most recent economic events, it seems the continued integration

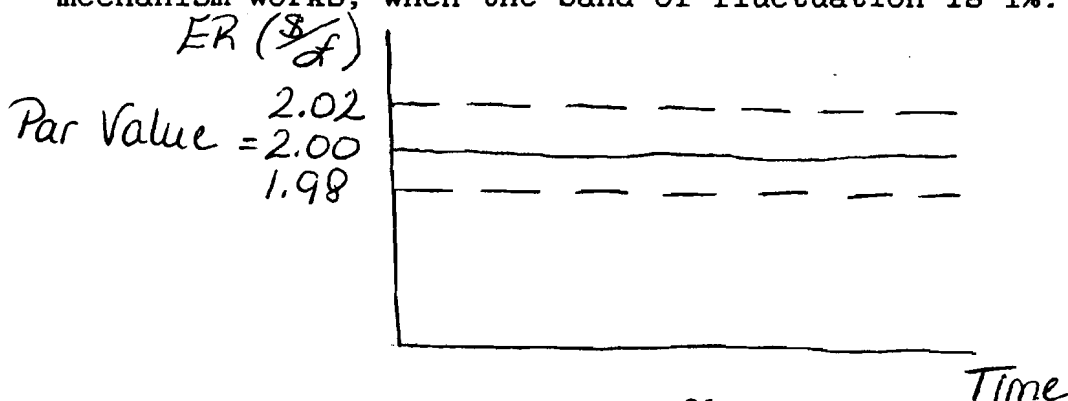
of the EC is in question.



## NOTES

1. I sincerely appreciate the efforts of the following people without whom the completion of this research project would not have been possible. Dr. Pamela Lowry, Assistant Professor of Economics, directed the independent study portion of this research, as well as offered her expertise in the field of International Economics throughout the entire project. Dr. Michael Seeborg, Chair of the Department of Economics, supervised this project in its early stages while teaching the Senior Project class. Thanks also go to Dr. Margaret Chapman, Associate Professor of Economics, and Dr. James Simeone, Assistant Professor of Political Science, members of my honors research faculty committee, who continually offered guidance and suggestions during this project. And a special thanks goes to Dr. Robert Leekley, Associate Professor of Economics, for his help in developing the regression model used in this research project.

2. The term fixed exchange rate with a band is taken directly from International Economics, by Dominick Salvatore. The following example illustrates how this type of exchange rate mechanism works, when the band of fluctuation is 1%.



3. The following table lists each country's percentage share in the ECU basket as of October 1990 (Harrop, 186).

Germany	30.4%
France	19.3%
UK	12.6%
Italy	9.9%
Netherlands	9.5%
Belgium	8.2%
Spain	5.2%
Denmark	2.5%
Ireland	1.1%
Portugal	0.8%
Greece	0.7%
Luxembourg	0.3%

4. The formula for annualizing quarterly rates of inflation is as follows (Kohn, 125).

$$(1 + \text{periodic rate})^{\text{periods per year}} = 1 + \text{effective annual rate}$$

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## Honors Research Proposal

### The Effect of German Unification on Inflation Rates in the European Community

In my research honors project, I will examine the inflation rates of the members of the European Community before and after German unification. Specifically, I will show how the inflation rates of the other members converged with Germany's before unification. (Before this, Germany had low inflation and the other members had high inflation; so, they tied their economies to a strong German economy to help bring inflation under control.) I will then examine the consequence of German unification on the inflation rates of these countries. The main research hypothesis to be tested is that Germany lost its ability to keep the inflation rates of other EC countries in line with its own. (i.e. There was inflation rate diversion after unification.)

The first step in testing this hypothesis is to collect macro economic data for EC countries, especially data on inflation rates. Most of the data is available from World Bank publications. The second step is to develop empirical models which correlate how closely other EC countries' inflation rates followed German rates before and after unification. The models will attempt to explain trends in the average European inflation rate as well as trends in the

variation of inflation rates between EC countries. The main statistical techniques will be correlation analysis and regression analysis.