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EMU Convergence: Reason for Encouragement

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From the beginning of discussions of a possible monetary union in Europe in the late 1950s, it was understood that differing business cycle patterns among the member countries were likely to be a major problem. Robert Mundell noted this argument against a large monetary union in his seminal American Economic Review article in 1960, and it became clear that a 'one size fits all' monetary policy would not fit all if members experienced quite different macroeconomic circumstances. 1. Countries in recession would prefer an expansionary monetary policy while those with stronger aggregate demand circumstances would want higher interest rates and more restraint. Serious disagreements among the member countries could be foreseen.

This problem is not unknown among the 12 Federal Reserve districts. The Minneapolis, Kansas City, and Dallas districts, all of which are heavily dependent on oil and gas, agriculture, mining, and the production of other raw materials often move together but quite differently from the other nine districts so regional differences of opinion within the FOMC are distinctly possible.

This problem can be expected, however, to be far more serious in Europe because it consists of quite different national economies which would be expected to diverge more than would regions of the United States. If EMU had a smaller membership of quite similar economies, such as the original six members of the Common Market, this would not be such an issue, but with twelve (thirteen as of January 1, 2007 with the entry of Slovenia) quite diverse members, some of which are at considerable distance from each other (Finland and Greece), this is an obvious problem. As more members are added, such as the Czech Republic, Estonia, etc., it can be expected to become worse.

In recent years there have been well reported examples of such divergences. Germany, France, and Italy have had soft economies, although Germany is now recovering strongly, while Ireland, Finland, Spain, and Greece have had inflationary demand pressures. The French and their neighbors have preferred an expansionary policy, and have often complained about the European Central Bank's restraint. Ireland and other smaller members have had sufficient votes on the Governing Council of the ECB to see to it that relatively firm policies prevailed. The fact that each EMU member has the same vote on the Governing Council has meant that large population countries, such as Germany, France, and Italy are badly under-represented, and that small groups of people in Ireland, Finland, etc. can prevail over the majority of the EMU population.

When EMU has more than fifteen members, this will change because there will be weighted voting, but the small population countries will still be badly over-represented. At least in the United States the plan was to allow the economically large districts (New York, Cleveland, and Chicago) to have more power on the FOMC, but shifting populations have meant that the 12th District (San Francisco, which contains the western third of the country, including Hawaii and Alaska) should have much more influence, and Cleveland/Chicago less. There is at present, however, no pressure to change the FOMC voting pattern despite its apparent unfairness to the far west.

Returning to Europe, supporters of EMU have argued that although the member countries may start out with differing macroeconomic cycles, and therefore with different monetary preferences, the very existence of the monetary bloc will lead to convergence. In a few years, it has been argued, what had been quite large differences in national business cycles will fade into a homogeneous European macroeconomy. 2.

The purpose of this paper is to investigate whether convergence is actually occurring within Europe, which groups of countries are converging, and the macroeconomic indicators for which such convergence is apparent. Free trade and a single currency should lead to convergence in rates of inflation, but

perhaps not in unemployment rates or in GDP growth. These latter aspects of economic performance are politically important, because the voters become decidedly displeased if unemployment is high and growth slow, as has been the case in France, Germany, and Italy during recent years.

The Groups of Countries And The Data

Three groups of countries are tested for evidence of convergence. The first is the original six members of the European Common Market: Germany, France, Italy, Belgium, the Netherlands, and Luxembourg. Since these countries have maintained free trade for many decades, have all been in EMU from its inception, are contiguous, and have similar levels of development and economic structures, it might be expected that convergence would be stronger in this group. The second category is the twelve recent members of EMU: the previous six plus Finland, Ireland, Spain, Portugal, Greece, and Austria. Finally current and prospective members are studied: the twelve of the previous group plus Slovenia (which joined January 1, 2007), the Czech Republic, Slovakia, Estonia, Lithuania, Latvia, and Poland. Hungary is not included because its macroeconomic performance has been quite different (worse) than that required for membership, so it cannot be expected to join EMU in the near future.

Three aspects of economic performance are considered for the 1990-2005 period: annual inflation in the consumer price index, the average

annual unemployment rate, and annual growth of real GDP. These would appear to be the macroeconomic variables about which voters care the most in that poor national performance in one or more of them is likely to bring on the wrath of voters.

Standard deviations, which are the standard statistical method of measuring convergence or divergence in a data set, are calculated annually for each variable from 1990 through 2005 for each group of countries. Regressions are run for the standard deviations on time. If the annual standard deviations for a variable decline over the 1990-2005 period, and if the regressions indicate that the decline is statistically significant, convergence would be strongly supported, and vice versa.

The Original Six

Figures 1, 2, and 3 present the standard deviations for the growth of real GDP, inflation, and unemployment from 1990 through 2005.

Insert Figures 1, 2, and 3

As can easily be seen there have been declines in the standard deviations for all three variables over the 1990-2005 period, but decline for real GDP growth is quite modest. The T ratio for the regression of time on inflation standard

deviations is -4.89, which is strongly significant. For unemployment rates, the T ratio is -2.87, which is also clearly meaningful. Only GDP growth rates fail to support convergence. The T ratio is -.46, which is the correct sign, but far too small to indicate convergence. For two of the three variables, convergence is clear and in the third no clear conclusion is possible, but the sign is correct. The three T ratios average -2.74. Overall macroeconomic convergence since the beginning of EMU is supported for the six original members of the European Common Market, all of whom were members of EMU from its inception.

The Recent Twelve

Macroeconomic convergence is even more strongly indicated for the recent membership, as the three following graphs make clear.

Insert Figures 4, 5, and 6

All three of the T ratios are of the correct sign and are clearly significant. The T ratio for GDP growth is -3.08, and for inflation rates it is even higher at -7.59. It is -8.29 for unemployment, producing an average of -6.32 for the three variables. This leads to the clear conclusion that convergence has occurred for these twelve countries since 1990. These countries really have become more similar in their macroeconomic performance in the fifteen years since EMU began. This should suggest fewer strong disagreements among the members on the subject

of what monetary policy should be pursued despite press reports of German unhappiness with European Central Bank policies.

The Recent Twelve Plus Seven Prospective Members

The addition of the seven prospective members leaves the conclusion in place that convergence has occurred, but it is, unsurprisingly, not as strong a trend as was the case for the twelve recent members.

Insert Figures 7, 8, and 9

All three of the T ratios are of the correct sign and are statistically significant, but two of the three are a bit marginal. The T ratio for real GDP growth is -2.74, and for inflation it is -2.72. Both are significant, but only slightly. The evidence for convergence in these two variables is weak. Unemployment rates, however, are quite different. The T ratio is -6.28, which means that the 19 labor markets have become much more similar in their cyclical behavior since 1990. This may be because at present people from Eastern Europe can relatively easily go to the west to find employment, a particularly large number of Poles having done so. Since a number of the eastern European countries went through some macroeconomics turmoil at the beginning of the 1990's, a few outliers were dropped from the data to avoid forcing the conclusion that convergence had occurred. The average for the three T ratios was -3.91 which clearly supports

overall macroeconomic convergence across Europe during this fifteen year period.

In addition to time trends in the three groups of countries, it may be worthwhile to briefly consider the absolute levels of the standard deviations in the groups. As can be seen on the left hand axis of Figures 1 through 3, the macroeconomies of the original six members of the European Common Market were already very similar before the 1990 beginning of EMU. The three standard deviations averaged only about 2.5 early in the 1990s and fell to about 1.8 by the early 2000's. There could not be much convergence for these economies over the fifteen year period of the study because they were already very similar. In addition it is far more difficult to show a significant trend in standard deviations through time with only six data points for each annual observation than it is with twelve or nineteen data points for each year.

As can be seen in Figures 4 through 6, the three standard deviations for the twelve recent members began the 1990s at higher levels, averaging about 5.5 before falling to just over 2 by the early 2000's. More convergence was possible because these countries started out being somewhat less similar than were the six original members. As can be seen in Figures 7 through 9, this conclusion holds more strikingly for the nineteen members and prospective members. The three standard deviations began the 1990's at an average of almost 20, which then declined to a bit less than 4 by the middle of this decade.

Far more convergence was possible for the 19 countries precisely because this group started the 1990s with quite different macroeconomic outcomes.

Conclusion

Fears of large and persistence macroeconomic differences among EMU members, leading to never ending turmoil on the Governing Council the European Central Bank appear to have been exaggerated. While there are differences in business cycle patterns among the EMU members and prospective entrants, these differences have been declining. If this trend toward macroeconomic convergence in the variables about which voters care the most (unemployment, inflation, and real GDP growth) continues, the EMU economy could become similar that of the United States. Regional differences will still occur, but they probably will not be large enough to cause disruptive disagreements over the direction of monetary policy.

Footnotes

* The author is a Professor of Economics at the George Washington University. He would like to thank Artur Kolasa, a GWU graduate student, for his help with the statistical work for this paper. Any remaining errors are, however, solely the responsibility of the author.

1. Mundell, R., The Theory of Optimum Currency Areas, American Economics Review, September 1961, pp. 657-665. For a counter view, which supports Currency blocs such as EMU on the grounds that they stabilize the price structure, see McKinnon, R., Optimum Currency Areas, American Economic Review, September 1963, pp. 717-725.

2. A number of articles have been published on whether or not there is evidence of convergence among the EMU countries. For an article supporting convergence, see Cabrero, A., An Assessment of Macroeconomic Divergences in the Euro Area, Documento Occasional # 0304, Bank of Spain, 2004. See also, Hein, E. and Truger, A., European Monetary Union: Nominal Convergence, Real Convergence, and Slow Growth, WSI Discussion Paper 107, September 2002. See in addition, Honohan, P., Divergent Inflation Rates in EMU, Economic Policy, October 2003, pp. 357-370. Also, Camerero, M., Esteve, V. and Tamarit, C., Price Convergence of Peripheral Countries on the Way to EMU: A Time Series

Approach, *Empirical Economics*, 2000, pp. 149-168. For related discussions, see Eichengreen, B., *One Money for Europe? Lessons of the U.S. Currency Union*, *Economics Policy*, April 1990, pp. 118-166. Also, Kenen, P., *Economic and Monetary Union in Europe*, Cambridge: Cambridge University Press, 1995.

Titles for graphs.

Figure 1: The Original Six: Standard Deviations for Inflation Rates

Figure 2: The Original Six: Standard Deviations for Unemployment Rates

Figure 3: The Original Six: Standard Deviations for Real GDP Growth

Figure 4: The Recent Twelve Members: Standard Deviations for Inflation Rates

Figure 5: The Recent Twelve Members: Standard Deviations for Unemployment Rates

Figure 6: The Recent Twelve Members: Standard Deviations for Real GDP Growth

Figure 7: Current and Prospective Members: Standard Deviations for Inflation Rates

Figure 8: Current and Prospective Members: Standard Deviations for Unemployment

Figure 9: Current and Prospective Members: Standard Deviations for Real GDP Growth

Figure 1: The Original Six: Standard Deviations for Inflation Rates

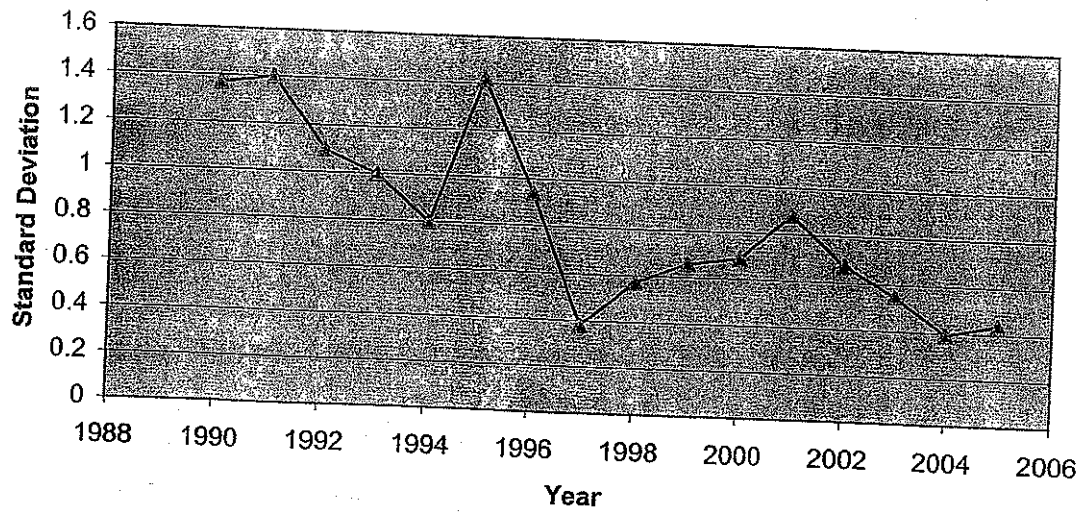


Figure 2: The Original Six: Standard Deviations for Unemployment Rates

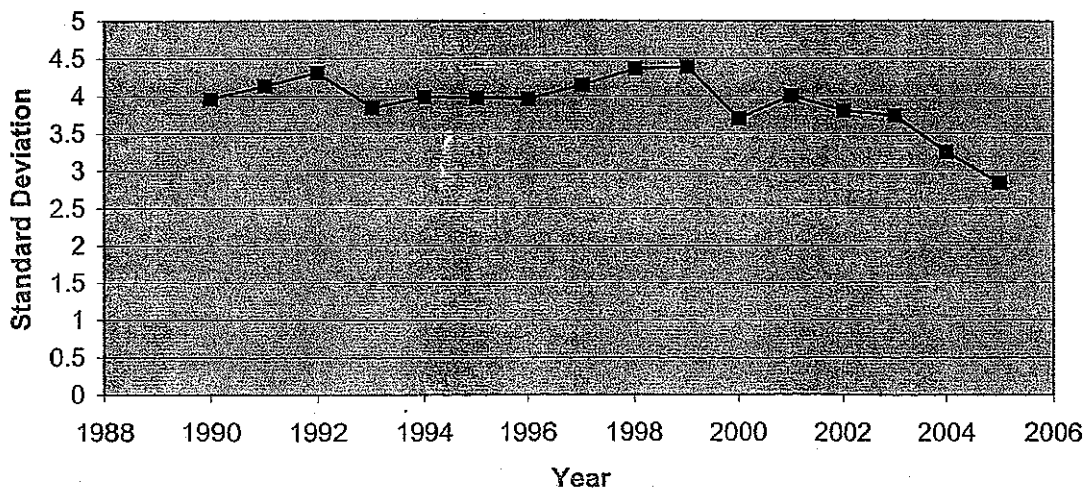


Figure 9: Current and Prospective Members: Standard Deviations for Real GDP Growth

