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Policy Note

Macroeconomic Aspects of European Integration: Fiscal Policy, Trade Integration and the European Business Cycle

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Abstract

We analyze the role of fiscal policy and intra-European trade in business cycle synchronization in the EU for the period 1995-2008. There is a broad consensus that the relationship between fiscal policy and business cycle comovements and between trade integration and cyclical synchronization are subject to endogeneity problems. We instrument fiscal budget surplus by means of (exogenous) political determinants of fiscal policy acknowledged by the literature, while trade integration is instrumented using covariates which summarize the integration status of countries in the sample, GDP per capita differences with respect to the EU and trade specialization within the EU framework. Our results show that both fiscal policy and trade integration are important determinants of cyclical synchronization. We can conclude that once a high degree of trade integration is reached by countries involved in the European integration process, the role of fiscal policy is particularly relevant and differences in fiscal shocks should be analyzed in detail as a source of coherence in cyclical comovements in Europe. Furthermore, fiscal deficits are shown to be an important potential source of idiosyncratic macroeconomic fluctuations, especially in the eurozone. Our results confirm the rationale of monitoring fiscal developments to assess the adequacy of potential future EMU countries and the need for a broad agreement concerning fiscal policy at the EU level.

Keywords: Monetary union, business cycles, synchronization, trade integration, fiscal policy

JEL-classification: E32, E62, F15

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Project Report

Macroeconomic Aspects of European Integration: Fiscal Policy, Trade Integration and the European Business Cycle

Policy Note

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Main findings of the report

Business cycle synchronization constitutes a prerequisite for the optimality of the European Monetary Union (EMU) as a currency area and the efficient performance of the common monetary policy. Crespo-Cuaresma and Fernández-Amador (2010) document the following four main stylized facts of business cycle synchronization in EMU under a unified methodological framework based on sigma-convergence methods:

- There is a period of convergence in cyclical patterns in EMU from the nineties and some evidence of increasing heterogeneity during the recession of 2000-2002.
- The core group of EMU countries shows a higher degree of synchronization relative to the rest of the monetary union.
- Some EU countries of the 2004 and 2007 enlargements present similar patterns of cyclical comovement to those displayed by some of the periphery EMU-12 members.
- The European differential in terms of business cycle synchronization existing during the nineties as compared with other industrialized economies has disappeared in the present decade, diluting the European business cycle within a global cycle.

Trade integration and fiscal policy have been suggested among the main potential sources of synchronization of the fluctuations of economic activity in the EU. Both variables are subject to endogeneity problems with regard to cyclical synchronization, which makes the analysis particularly complex. Trade activity can be characterized as intra-industry or inter-industry trade. In the former, trade is concerned within the same industry, allowing the transmission of sectoral shocks among the countries forming the monetary union. In the case of inter-industry trade, trade occurs between different industries, promoting specialization and idiosyncratic shocks within the common currency area. From a theoretical point of view, cyclical synchronization should be higher whenever intra-industry trade effects from trade activity among countries are larger than inter-industry effects. Fiscal policy, on the other hand, plays an important role as a determinant of business cycle fluctuations. The importance of fiscal policy as an instrument of stabilization policy at the national level makes it a potential source of asymmetric shocks, calling for fiscal coordination measures at the European level. The Stability and Growth Pact (SGP) is the instrument that should be considered a narrow policy coordination agreement, as defined by Von Hagen and Mundschenk (2001), focused on monitoring national policies and practices challenging price stability, which nevertheless leaves relative freedom to national policy goals and instruments.

In the report *Macroeconomic Aspects of European Integration: Fiscal Policy, Trade Integration and the European Business Cycle*, we analyze the role of fiscal policy and intra-European trade in business cycle synchronization in the EU for the period 1995-2008. Our results indicate that whenever a high degree of trade integration is reached by countries involved in the European integration process, the role of fiscal policy is particularly relevant and differences in fiscal shocks should be analyzed in detail as a source of coherence in cyclical comovements in Europe. Our results confirm the rationale of monitoring fiscal developments to assess the

adequacy of potential future EMU countries and the necessity of broad agreement concerning fiscal policy at the EU level.

In this policy brief we first present the main features of trade activity and fiscal stance in the EU members and describe the main policy implications for potential future enlargements of the EMU. The position of Austria in the EU context is also described and analyzed in more detail.

Trends in trade integration and fiscal policy in Europe

Our sample spans the period 1995-2008 and contains data for 25 European countries. In terms of trade integration in EMU, the contemporary economic history of Europe allows for distinguishing two groups of countries. On the one hand, the countries of the EMU-12, a group of economies with highly integrated goods and services markets. On the other hand, a group of countries that experienced a huge structural change during the nineties until the middle of the present decade in order to prepare the way for the accession to the EU, some of them confronting also transition reforms from planned to market economy.

Table 1 shows the averages and coefficients of variation of indicators of trade intensity, trade orientation and trade specialization for the 25 EU-countries considered in our piece of research. As it can be seen in columns 1 and 2, trade intensity in the EU, measured as the intra-EU trade of the country as a share of total intra-EU trade, is partly related to size, with Germany, France, United Kingdom, Italy, Belgium, Netherlands, and Spain as the countries with highest intra-EU trade share. EU-trade orientation (defined as the share of intra-EU trade as a share of total trade in the country, presented in columns 3 and 4) presents also a high level of dispersion. The importance of EU-trade on total trade appears important, with a cross-country average of around 62%. However, those countries that are more representative in intra-EU trade seem to be also those with lower European orientation. In particular, this is the case of Germany, France, United Kingdom, and Italy. At the same time, the trade specialization indicator (based on the similarity of baskets of traded goods) tends to be close to unity across the sample and thus specialization seems to be quite weak in the EU context. Overall, we can characterize the EU as a mixture of small countries oriented to the European market and a group of some big countries with importance in the single market, but quite open to the rest of the world. This setting indicates the importance that the trade channel may have within Europe. External shocks imported by countries with small European trade orientation but considerable share of European trade may be easily transmitted to the rest of the EU. In addition to this, it is quite plausible to assume that shocks are shared by the majority of EU countries, since specialization is not particularly strong. Therefore, trade integration should be seen as a factor fostering business cycle synchronization.

Turning our attention to the role of fiscal policy, Figure 1 displays the cross-country dispersion series for fiscal surpluses and business cycles in the EU for the period 2000-2008. This period allows us to compare countries after the transition in enlargement countries was

Table 1: Trade intensity, trade orientation and trade specialization, EU-25 (1995-2008. Average and coef. of variation)

	EU-Trade intensity		EU-Trade orientation		EU-Trade specialization	
	Average	Coef. var.	Average	Coef. var.	Average	Coef. var.
AUT	3,436	4,495	73,430	2,888	0,994	0,073
BEL	9,292	3,554	74,874	1,122	0,979	0,789
BGR	0,249	33,475	50,493	11,280	0,957	1,482
CYP	0,091	11,065	55,949	14,845	0,979	1,041
CZE	2,020	24,854	77,582	2,575	0,986	0,605
DEU	21,334	2,076	59,191	4,058	0,995	0,220
ESP	6,113	4,438	66,814	4,278	0,993	0,146
EST	0,196	24,376	61,393	10,095	0,987	0,316
FIN	1,506	7,026	57,859	3,629	0,979	0,374
FRA	12,022	5,445	61,641	5,669	0,999	0,049
GBR	10,438	9,218	54,253	4,523	0,996	0,167
GRC	0,883	11,411	60,436	7,521	0,977	0,450
HUN	1,485	25,708	70,145	5,502	0,972	1,507
IRL	2,253	12,947	61,452	1,995	0,962	1,901
ITA	9,421	7,113	59,159	3,559	0,997	0,087
LTU	0,264	37,283	60,133	8,951	0,980	1,250
LUX	0,529	3,181	85,809	1,536	0,966	0,714
LVA	0,162	37,177	72,741	8,119	0,961	1,554
NLD	7,605	6,853	57,781	5,911	0,989	0,272
POL	2,303	25,308	71,298	3,675	0,990	0,203
PRT	1,603	7,959	75,111	5,811	0,991	0,133
SVK	0,833	33,015	76,428	4,686	0,985	0,707
SVN	0,526	10,798	73,322	2,039	0,988	0,153
SWE	3,248	6,534	63,970	2,790	0,994	0,160
DNK	2,189	4,765	67,052	3,727	0,987	0,182
EU-25	100	0,000	62,315	2,933	1,000	0,000

Note: Data on imports and exports for computing the indices are available from UN COMTRADE. We use annual data for the period 1995-2008. Groups considered for the computation of the specialization indicator are those of the *Standard International Trade Classification Revision 1* (SITC-Rev. 1): Food and live animals; Beverages and tobacco; Crude materials, inedible, except fuels; Mineral fuels, lubricants and related materials; Animal and vegetable oils and fats; Chemicals; Manufactured goods classified chiefly by material; Machinery and transport equipment; Miscellaneous manufactured articles; Commodities and transactions not classified according to kind. Data for Belgium in the period 1995-1998 are sourced from the National Bank of Belgium (Foreign Trade Statistics).

over and include countries that are only members the EU together with those that also are members of the eurozone. Figure 1 depicts a clear positive relationship between fiscal stance and business cycle comovements in EU. However, as mentioned above, both trade integration and fiscal stance are subject to endogeneity problems with business cycle synchronization and a more detailed econometric analysis is required to estimate the actual effect of these variables in cyclical comovement in Europe.

In our econometric analysis we consider the following variables as potential good instruments for trade integration: trade specialization, income per capita trends, geographical and institutional dummies (for periphery countries, EU, opting-out, and EMU membership in enlargement rounds). For the case of the fiscal surplus, two political variables (years remaining of term and share of government votes) appear as important exogenous determinants of the fiscal policy stance and are used in the instrumental variables estimation.

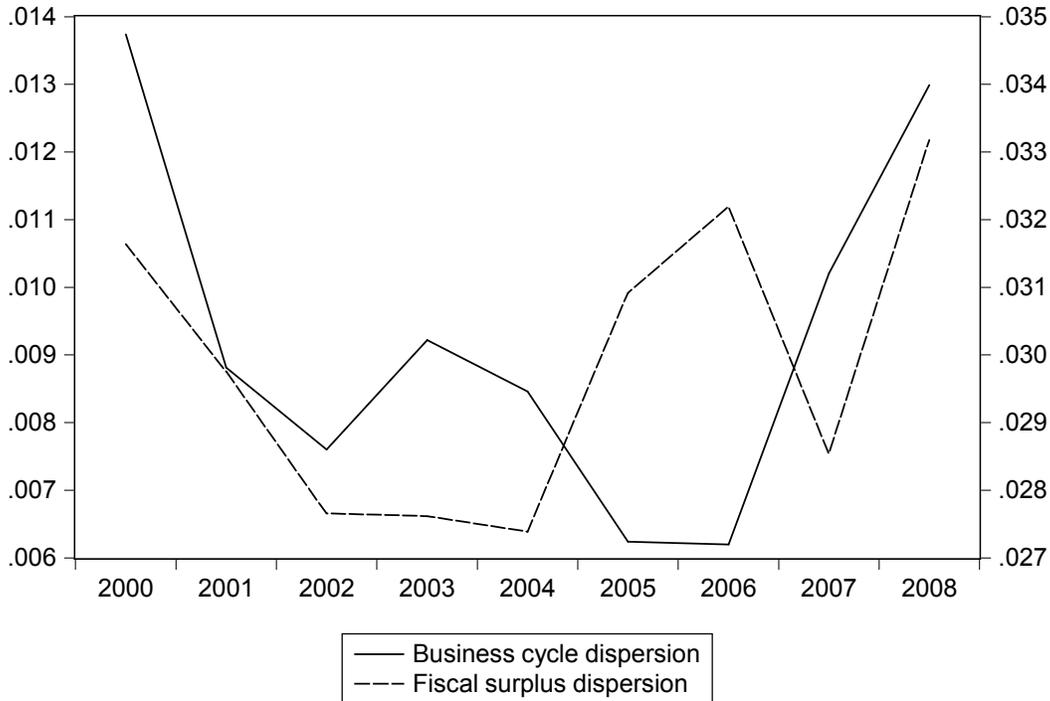


Figure 1: Business cycle dispersion and fiscal surplus dispersion in EU. 2000-2008

Note: GDP series are sourced from OECD and Eurostat. Budget surplus is available from Eurostat.

The results from Table 2 show that both trade integration and fiscal policy play a role in business cycle synchronization after accounting for endogeneity in their relationship with cyclical comovements. Moreover, a change in one standard deviation in the fiscal variable changes the synchronization measure by roughly the same amount as a change in one standard deviation in our trade intensity indicator.

Main policy implications: Austria in the EU context

Several important policy implications can be extracted from our research, in particular in the context of the recent financial crisis. First of all, fiscal deficits are shown to be an important potential source of idiosyncratic macroeconomic fluctuations in Europe. To the extent that fiscal objectives are focused on national priorities, fiscal policy is a source of asymmetric shocks with potential harmful effects in the performance of monetary policy in the monetary union. Second, concerning future enlargements of EMU, our results confirm the rationale of monitoring fiscal developments to assess the adequacy of potential future EMU countries. Although the reformed SGP envisages special conditions for periods of intense recession, some further control upon national budget developments must be taken into serious consideration in the form of broader fiscal coordination steps in Europe. A proper fiscal harmonization policy should be reconsidered in order to provide a political framework for budget coordination and consolidation, as well as first steps towards a risk-sharing mechanism at the EU level.

These results are also of particular relevance for Austria. As a small, developed and open economy with strong fiscal consolidation tradition and high penetration in Eastern Europe, in

Table 2: Determinants of business cycle synchronization, IV estimates, EU-25 1995-2008

Variable	(1)	(2)	(3)	(4)
Cyclical component	-0.709*** [0.206]	-0.669*** [0.225]	-0.566*** [0.218]	-0.536* [0.320]
Budget surplus	1.224** [0.532]		0.460** [0.204]	0.346*** [0.129]
Trade with EU as % of trade in the EU		0.013** [0.007]	0.018* [0.007]	0.023*** [0.007]
Cyclical component \times Budget surplus				0.384 [9.856]

Note: Robust standard errors in brackets. * (**) [***] stands for significance at the 10% (5%) [1%] level. Dependent variable: business cycle synchronization measure. Regression includes country fixed effects and year dummies which are not reported. Instrumental variables estimation with the instruments described in the text.

particular in the banking sector, Austria faces indirect risks from narrow fiscal harmonization in a highly integrated trade and financial framework. The transmission of international or external shocks as well as shocks in peripheral countries of the EMU have proved to be a relatively minor focus of instability for Austria. However, whether such shocks could have feedback effects in the Austrian economy through the transmission via discretionary fiscal shocks in Eastern European countries is still an open question. Ensuring broad fiscal consolidation in the EU would reinforce the role the German cycle (as the largest European economy) in the European macroeconomic framework and the Austrian economy, historically intertwined with macroeconomic developments in Germany, would profit from monetary policy shocks in terms of aggregate stability.

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