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# Monetary uncertainty and trade in Eastern Europe and Central Asia: A firm-level analysis

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### ABSTRACT

This paper uses firm-level data to investigate the effects of monetary uncertainty and political instability on the extensive and intensive margins of trade (exports and imports) in Eastern Europe and Central Asia. The former is related to exchange rate volatility, currency regimes and internal hedging, whereas the latter is related to the political regime in question. We consider 26 countries, most of them small, with poorly-developed financial markets, and in which exchange rate fluctuations and political instability are relatively high. The main results are threefold. First, we find a robust negative effect of exchange rate volatility on firms' probability of exporting (extensive margin) and on their export intensity (intensive margin). Second, we find a significant positive impact of binding currency agreements in the form of euro or ERM II membership, mainly on the extensive margin of trade. Moreover, we show that being party to those agreements allows firms to engage in international trade with a lower degree of internal hedging. Third, we make the case that political stability is related to an increase in exports.

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## 1. Introduction

Uncertainty about economic policy has reached new highs in the aftermath of the 2007–2009 recession. It is not only fiscal and regulatory policies that have been affected by this uncertainty, but also monetary policies including exchange rate arrangements and currency regimes. The main questions that arise for policy actors are how this uncertainty affects economic activities and how can it be reduced or eliminated. It is especially important for firms engaged in international trade to have information about the evolution of the value of their exported goods in international currencies.

In this paper, we focus on how changes in monetary policies and the associated exchange rate volatility have affected international trade in Eastern European and Central Asian countries. For some time, the policy and academic debate has focused primarily on the accession of new countries to the Eurozone and the evaluation of the effects of adopting the euro on economic performance in general and particularly on trade. Most of the initial literature studied aggregate trade (Rose, 2000; Frankel & Rose, 2002) and

found surprisingly large effects, with trade even tripling. Some of the most recent literature also used sectoral data (Flam & Nordström, 2007; Baldwin & Di Nino, 2006; Eicher & Henn, 2011). The main findings indicate that adopting the euro generated positive and small increases in exports, of around 5–30% on average, for most sectors and countries.

The new–new theories of international trade that emphasize the importance of firm heterogeneity in explaining international trade (Melitz, 2003) predict that only firms that are sufficiently productive will be able to cover the extra fixed costs of exporting and so will find it profitable to export. Less productive firms will only be able to sell domestically. In line with these theories, assuming that the euro adoption reduces the fixed cost of exporting, the Melitz model predicts that more firms in countries that adopt the euro should start exporting. However, to the extent to which the Euro adoption also reduces transaction costs it could also influence the variable cost of exporting. On the other hand, exchange rate movements should mainly affect the variable cost of exporting.

In order to test the predictions, firm-level data has recently

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been used in some studies to evaluate the effect of the euro adoption and of exchange rate movements on international trade. Most of them distinguish between the effects on the extensive (the number of products exported) and intensive (trade intensity in already exported products) margins of trade. Reductions in fixed costs should mainly affect the extensive margin of trade, whereas changes in variable costs mainly affect the intensive margin of trade. The euro effect has been investigated using firm-level data for single countries by [Berthou and Fontagne \(2008\)](#), [Vicarelli and Pappalardo \(2012\)](#) and [Etzel et al. \(2013\)](#). The main findings show significant positive effects on exports for the extensive margin in the case of France ([Berthou & Fontagne 2008](#)), for the intensive margin only in Italy ([Vicarelli & Pappalardo, 2012](#)) and for both margins in Germany ([Etzel, Hauptmann, & Scherer, 2013](#)). Other authors focused on the effects of the outcome of monetary policy, namely exchange rate volatility and its effects on trade, with the main results also varying by country. For instance, [Campa \(2004\)](#) finds that the effects of exchange rate volatility on the extensive margin of exports are not significant for Spain, whereas [Guillou \(2008\)](#) finds positive effects for France. Studies on the intensive margin of trade show negative effects for France ([Berthou & Fontagne, 2008](#)) and China ([Héricourt & Poncet, 2015](#)) but no significant effects for Turkey ([Solakoglu, Solakoglu, & Demirağ, 2008](#)). All these studies focus on single, economically large countries with little volatility in the exchange rate, and several studies exclusively focus on large firms. Moreover, these studies mainly treat the euro effect or exchange rate volatility as the main factors affecting exports, disregarding aspects such as political stability and hedging practices as additional/alternative explanatory factors.

The main contribution of this paper is threefold. Firstly, we examine a region dominated by small countries with poorly developed financial markets and considerable exchange rate fluctuations. Small countries are usually more dependent than big countries on external trade since their production capacity is more limited. They are also more integrated in the global economy and have a higher openness ratio. Firms in small countries are generally more engaged in international activities and market access is a more important issue than in big countries. Hence, the degree of uncertainty concerning monetary and political uncertainty could have a stronger effect on exporting activities in small countries than in big countries.

Secondly, we focus not only on the euro effect and the effect of exchange rate volatility on trade but also on the effects of the currency regime ([Bergin & Lin, 2012](#)), political instability ([Anderson & Marcouiller, 2002](#)), and the use of hedging tools on firms' international trade ([Bodnár, 2009](#); [Cadek, Rottova, & Saxa, 2011](#)). More specifically, in the case of Eastern Europe and Central Asia, the international business (IB) literature emphasizes the relevance of the "institutional" and "resource based" theories to explain the internationalization strategies of firms located in the area; hence we use these theories to specify our main research hypotheses.

In an open economy, fiscal policies could also affect the exchange rate, for instance, a fiscal expansion usually implies government borrowing and a rise in interest rate, which attracts foreign capital. This could cause an exchange rate appreciation in the short run that will make imports cheaper, leading to a deterioration of the trade balance. In the long run, instead, the accumulation of foreign debt might lead to a depreciation of the exchange rate ([Chatterjee & Mursagulov, 2012](#)). This mechanism will apply in economies with flexible exchange rates and when domestic and foreign assets are close substitutes ([Sachs & Wyplosz, 1984](#)). In our empirical analysis we will control for the exchange rate regime in order to account for this transmission mechanism.

The novelty of the paper consists in disentangling the effects of the various abovementioned factors on international trade, namely the euro effect, currency regime, political and institutional uncertainty and hedging tools, while controlling for changes in trade policy. It is important to control for trade policy because the free trade agreements (in the case of Eastern European countries) and partnership agreements (in the case of Central Asia) also reduce the uncertainty related to the macroeconomic environment and in particular related to the stability of tariffs and non-tariff barriers. Most existing papers focus on a single factor and disregard the others,<sup>1</sup> whereas we believe that in order to avoid biased results the analysis must simultaneously examine trade policy as well as monetary policy and political uncertainty. Moreover, in the empirical analysis we also include some model specifications with country dummy variables, which account for all differences that are country specific, including cultural differences.

Finally, the region under study is of particular interest as most of the 26 countries share a similar recent history, have undergone remarkable changes in exchange rate policies in the last two decades and continue to have different policy approaches today, thus providing sufficient variation at the country level to implement this research. To the best of our knowledge, this is the first paper to study the effects of uncertainty in monetary policy using firm-level data for Eastern Europe and Central Asia.<sup>2</sup>

Given the specific characteristics of the countries under study, the idea is that differences in the domestic exchange rate policy regarding the euro change the uncertainty horizon for the real value of firms' future revenues. While lower volatility in the exchange rate may encourage firms to engage in exporting activities in the short term, a certain degree of uncertainty remains as the exchange rate policy of their home country may change in the near future. Binding commitments in the form of the European Exchange Rate Mechanism II (ERM II) or euro membership may lower the degree of uncertainty in the medium to long term.

The main results are threefold. First, we find a robust negative effect of exchange rate volatility on firms' export intensity. Second, we find a significant positive impact of more binding currency agreements in the form of euro or ERM II membership on trade, which is robust only for the extensive margin of trade. Moreover, membership in those agreements allows firms to engage in international trade with a lower degree of internal hedging. Third, political stability has a positive effect on trade.

The rest of the paper is structured as follows: Section 2 provides a brief overview of the theoretical and empirical evidence with a focus on firm-level data studies and states the main testable hypotheses. Section 3 contains information about the data and the empirical strategy, Section 4 presents the results, while Section 5 discusses the main implications and concludes.

## 2. Context, theories and hypotheses

In this section the main theories and empirical applications closely related to our work are discussed and the main hypotheses linked to the corresponding theories are stated. The following subsection provides a summary of the theoretical aspects and empirical studies that evaluate the effect of monetary and political uncertainty on trade. Section 2.2 focuses specifically on studies using firm-level data and Section 2.3 briefly reviews the literature

<sup>1</sup> Only one paper considers exchange rate volatility and the euro effect simultaneously: [Berthou and Fontagne \(2008\)](#) in their study of the French case.

<sup>2</sup> The only study we are aware of is a descriptive analysis of hedging practices of domestic firms in Hungary and the Czech Republic ([Bodnár 2009](#); [Cadek et al., 2011](#)).

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