International Economics 124 (2010), p. 75-100

INTERNATIONAL ECONOMICS
ÉCONOMIE INTERNATIONALE

EXCHANGE RATE PASS-THROUGH: NEW EVIDENCE FROM GERMAN MICRO DATA

Eike Berner[1]

Article received on June 6th, 2010
Article accepted on January 25th, 2011

ABSTRACT. This paper examines exchange rate pass-through into German import unit values over the last 20 years. I find incomplete pass-through to be the predominant characteristic for German imports with an average rate of 42% over three months. This result holds when considering monthly 8-digit data, the most disaggregated German import data available. Furthermore, I distinguish 16 German trading partners and estimate substantial cross-country differences in the pass-through to import unit values. Imports coming from European countries generally exhibit statistically zero pass-through. By contrast, non-European trading partners are characterized by statistically significant incomplete pass-through rates. I also study whether there are differences in the pass-through rates for appreciations and depreciations, as well as for small and large exchange rate shocks. Moreover, I test for a negative correlation between the goods' quality and its pass-through rate.

JEL Classification: F42; F31; F14.
Keywords: Exchange Rate; Pass-through; Import Prices; Germany.

RÉSUMÉ. Cet article examine la façon dont les variations du taux de change de l'euro se transmettent aux valeurs unitaires des importations allemandes. Nous montrons que cette transmission (pass-through) est incomplète et s'effectue en moyenne avec un décalage d'un peu plus de trois mois. Ce résultat est robuste aux différents niveaux de désagrégation des données. En considérant les principaux partenaires commerciaux de l'Allemagne, nous mettons en évidence d'importantes différences dans le pass-through selon le pays d'origine des importations : alors que les importations provenant de pays européens hors zone euro sont caractérisées par un pass-through nul, celles provenant des partenaires commerciaux hors Europe présentent des pass-through incomplets. Nous étudions également si les path-through diffèrent selon que le taux de change s'apprécie ou se déprécie et selon l'ampleur du mouvement de change.

Classification *JEL* : F42 ; F31 ; F14.
Mots-Clefs : Taux de change ; «pass-through» ;prix à l'importation ; Allemagne.

---

1. Eike Berner, PhD Student, Department of Economics, Christian-Albrechts-Universität Kiel, Ohlshausenstraße 40, 24098 Kiel, Germany (berner@economics.uni-kiel.de). I would like to thank my supervisors Horst Raff and Holger Görg, the participants at the RIEF Doctoral Meetings in Kiel, and two anonymous referees for helpful comments and suggestions.

1. Introduction

This paper uses highly disaggregated German data to study exchange rate pass-through (ERPT) into import unit values. I am particularly interested in potential differences in ERPT across goods and countries. Therefore, I consider German imported goods at the 8-digit level and distinguish between different trading partners. Additionally, I try to measure the impact of quality on ERPT and analyze whether there are differential effects for appreciations of the Euro compared to depreciations, as well as for small and large exchange rate shocks.

The pass-through of exchange rate shocks and trade shocks through the elimination or imposition of tariffs and non-tariff barriers has important economic effects.[2] On a macroeconomic level, the extent of this pass-through is crucial for optimal monetary policy as it directly affects domestic prices and thus inflation rates (see, for instance, Devereux, 2001; McCarthy, 2007; or Engel, 2009). On a microeconomic level, the degree of pass-through determines how firms and households are affected by external shocks. This is especially true for Germany since its share of imports to total GDP increased in the last twenty years from 21% in 1991 to 32% in 2008.[3]

Surprisingly, there still is little empirical evidence regarding potentially different ERPT effects across trading partners and products. Studies focus either on one or two countries with their specific bilateral trade relation (Gosh and Rajan, 2009; Bergin and Feenstra, 2009), or on single countries and all their trading partners at once (Feinberg, 2000; Gust *et al.*, 2006; Olivei, 2002; McCarthy, 2007). In the latter case, effective exchange rates are used which comprise several currencies. An aggregated view suppresses a lot of information and can lead to a sectoral estimation bias, as found by Mumtaz *et al.* (2006). There is also a large heterogeneity in the movements of exchange rates, as FIGURE 1 shows.

For instance, in the last years the euro experienced a substantial appreciation versus the Mexican Peso or the Indian Rupee. On the other hand, the German exchange rate versus the Czech Koruna depreciated strongly and it remained rather stable with respect to the Danish Krone. By adding 16 different German trading partners – among others the United States, China and the United Kingdom – my analysis is, thus, useful to further distinguish country-specific pass-through rates into German import prices. A lot of studies analyze ERPT into price indices (see also Campa and Goldberg, 2005; Campa and Minguez, 2006; or Ihrig *et al.*, 2006), while some consider more disaggregated sectors and price indices (Yang, 1997; Mumtaz *et al.*, 2006; Francois *et al.*, 2010). However, relatively few studies try to estimate ERPT into highly disaggregated unit values for a broader set of products (for instance, Gaulier *et al.*, 2008, for 4-digit data and a large set of up to 100 countries; Auer and Chaney, 2009, for 10-digit U.S. import data; and Gopinath *et al.*, 2010, for 10-digit U.S. data at the firm-level).[4]

2. For the equivalent impact of these effects see, for example, Feenstra (1987).

3. Values calculated with data from the online database of the German Federal Statistical Office.

4. Knetter (1989, 1993, 1997) also uses 7-digit data but estimates pass-through rates for a rather narrow set of up to 37 industries.