Abstract

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SECTION 1. INTRODUCTION

SECTION 2. LITERATURE REVIEW

The goal of pioneering works in exchange rate pass through estimation area was mainly in determining industry-specific effects in specific economies: among others, (Schembri 1985) examines Canadian exports, (Menon 1992; Menon 1993) — Australian exports and Imports of Motor Vehicles, (Khosla 1991; Athukorala, Menon 1994) — Japanese exports, (Cowling [et al.] 1989 — UK and West German car market, Athukorala 1991 — Korean exports, Baldwin 1988; Feenstra 1989; Hooper [et al.] 1989) — US imports. These papers show that there is a heterogeneity in pass-through across industries as well as countries though challenging data measurement errors and model misspecifications. A huge contribution to review these attempts is made in (Menon 1993; Menon 1995).

Looking for exchange rate pass-through for whole economies, (Khosla, Teranishi 1989) estimate shock-independent ERPT to export prices for 23 countries using calculated quarterly nominal effective exchange rate for each economy and fitting OLS regressions. They find that pass-through effect varies drastically across countries: for developed economies this value is high, meanwhile developing ones experience low pass-through.

A more advanced methods are used in (Y. Kim 1990) — author examines pass-through to US import prices and influence of exchange rate to mark-up using a model with time-varying parameters. It is shown that a mark-up negatively correlates with US dollar exchange rate, though a direct effect of the latter to prices fell from 1980s.

In (Deravi [et al.] 1995) a vector autoregression (VAR) is applied to fit US broad money aggregate, dollar exchange rate and consumer price index (CPI) with a main emphasis on monetary supply shock. Via causality test It is underlined that there is a significant causality effect of broad money to other macrovariables. Variance analysis suggests the effects to CPI from innovations to other two variables are nearly equal after four years.

(K.-H. Kim 1998) employs vector error-correction model (VECM) in order to study pass-through to US import prices. This paper reveals a significant negative effect of US exchange rate appreciation to producer price index (PPI) and conducts causality test for this dependency, which confirms an influence of exchange rate. Moreover, author argues that previous works were using inefficient methods to examine ERPT.

In his renown paper, Taylor (2000) provides strong theoretical framework for understanding exchange rate pass-through nature. The author simulates three-equation model of individual and aggregate prices and output and shows that when the inflation is low, pricing

power of firms declines as well leading to lower pass-through. Hence, if a producer wants to raise or lower their individual price due to change in costs or, equivalently, exchange rate, he or she would expect other firms stay on the remaining price level due to low inflation.

Another approach of examining exchange rate pass-through is contained in literature based on general equilibrium models, although there are few ones specially structured for studies in this particular field. Mainly based on purely statistical approach, this particular paper refers only to several works of this kind, leaving the rest to the reader.

One of the works is Adolfson 2001, where author examines optimal policy of monetary authority under different completeness of pass-through. The main consequence of this study is that the lower pass-through is, the less important nominal economy is, as interest rate response to shocks from outside is lower and exchange rate fluctuations are higher.

The seminal paper in this field is Obstfeld [et al.] 2002. It does not directly touch the pass-through problem, however, it is a starting point for many papers in this field. In the paper, a cooperation of monetary authorities in a two-country model is examined. The main result of this paper is that even if monetary authorities do not coordinate with each other, benefits from macroeconomic stabilization can outweigh lack of coordination, and coordination under fixed exchange rate is more preferred than one under the floating rate.

Looking for effects of exchange rate volatility, (Devereux [et al.] 2002) develop a multi-economy new-Keynesian general equilibrium model based on the model from aforementioned paper. Authors show that fluctuations in nominal exchange rate appear to compensate pass-through to prices nominated in local currencies. It is argued that even if there is a little volatility in fundamental macroeconomic variables, fluctuations of exchange rate may be quite high. This model lacks empirical research though, constrained only by simulations with different parametrisation.

Basing on the same foundations, an attempt to make an empirical research based on DSGE model is done in (Smets [et al.] 2002), where Euro area data is used to calibrate a model and estimate exchange rate pass-through in an economy with optimal monetary policy. As a result, authors claim that under an assumption of presence of import price stickiness in the economy, its effect is similar as stickiness of domestic prices.

Gagnon [et al.] (2004) use Monte-Carlo approach with multi-equation model to show that there was a decline in exchange rate pass-through since 80s due to inflation stabilisation policy conducted by many central banks across the world. To find more evidence, authors fit

an OLS regression with lags of exchange rate summed with foreign CPI for two subsamples individually chosen for 20 countries. Additionally, they estimate interest rate rule coefficients in order to find changes in monetary policy. Finally, authors argue that the hypothesis is confirmed.

A new wave in studying exchange rate pass-through — use of structural vector autoregressions (SVAR) — starts from (Hahn 2003) for Euro area macro data from 1971 to 2002. In this remarkable work, a recursive (also known as *Cholesky*) identification scheme is used in order to recover macroeconomic shocks to PPI and HICP from other different macroeconomic variables (oil price, interest rate, output gap and non-oil import prices). To address statement about pass-through decline in (Gagnon [et al.] 2004), author conducts a robustness test and finds out that there was no significant change in pass-through effect for the Euro area.

The same conclusion about decline, among other ones, is made in (Campa [et al.] 2005). Searching for the pass-through effect to import prices, authors examine data for 23 countries and assert that the pass-through effect is incomplete for all countries in the short run and for overwhelming majority of them in the long run.

In (Shambaugh 2008) paper author uses long run restrictions for SVAR in order to identify link between exchange rate and CPI together with import prices. Author uses data for 16 countries for the time frame from 1973 to 1999 and obtains supportive evidence that low inflation declines pass-through — for some countries, CPI growth rate does not respond to exchange rate shocks in the same magnitude as producer price index growth rate.

SECTION 3. METHODS

SECTION 4. DATA

SECTION 5. RESULTS

DISCUSSION

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Appendix A: