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Borsa İstanbul Review

Borsa İstanbul Review 15-4 (2015) 223–236
http://www.elsevier.com/journals/borsa-istanbul-review/2214-8450

On the benefits of nominal appreciations: Contrasting evidence across developed and developing countries ☆

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Received 4 March 2015; revised 2 June 2015; accepted 23 June 2015

Available online 14 July 2015

Abstract

The paper studies determinants of flexibility of the nominal effective exchange rate and the effects of exchange rate shocks on macroeconomic variables and key components of the external balances using data for a sample of advanced and developing countries. The composite evidence points to the positive effects of appreciation through cheaper imports in support of higher growth and lower price inflation in advanced and developing countries. However, the negative effects of appreciation are more pervasive on the external balances in developing countries. The implication is developing countries remain highly dependent on exports of commodities. In contrast, advanced countries are more diversified and ahead in capitalizing on currency appreciation to mobilize investment growth, a channel that boosts competitiveness and mitigates the adverse effect of appreciation on external stability. The evidence attests to the need to create an environment that is more conducive to investment growth in developing countries.

JEL classification: E61; E62; E63; E32; E21

Keywords: Cyclicality; Exchange rate shocks; Supply-side constraints; Developing and advanced countries

1. Introduction

Recent developments in the world economy have drawn attention to potential adverse effects of exchange rate fluctuations on the macro-economy. In equilibrium, movements in the exchange rate track underlying fundamentals that anchor agents' expectations and guide production plans. Hence, fluctuations in the exchange rate create misalignments that could impact on macroeconomic performance. Misalignments reflect unexpected pressures on the exchange rate in the form of overvalued or undervalued exchange rate. Such deviations may affect the demand and supply sides of the economy differently, with varying effects on real growth, price inflation, and components of aggregate demand.

The exchange rate is considered one of the most important factors influencing export performance. This idea has mainly originated from the seminal work of Mundell (1963) and Fleming (1962) whereby devaluation of a country's currency improves the trade balance by stimulating demand for the new cheaper exports and restraining demand for the now more expensive imports. However, three conditions must be satisfied if devaluation is to lead to a higher value of exports (Berman & Berthou, 2009): (i) export prices are set in the exporters' currency and there is no pricing in local currency, (ii) foreign demand is sufficiently elastic and (iii) exporters' supply is also sufficiently elastic.[1]

☆ The views in the paper are those of the author and should not be interpreted as those of the CBUAE or CBUAE policy.

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Peer review under responsibility of Borsa İstanbul Anonim Sirketi.

[1] If elasticities are low, which is typically the case in the short-run, then devaluation (depreciation) will have little effect on the trade balance (Metzler, 1948). Dornbusch (1987) identifies a different set of conditions under which depreciation can stimulate exports. If unit labor cost abroad is lower than in the domestic economy, wages are sticky and domestic and foreign goods are not fully homogeneous, then the effect of depreciation in boosting competitiveness is not realized in the short-run.

http://dx.doi.org/10.1016/j.bir.2015.06.003

This paper studies the pass-through channel from exchange rate fluctuations to macroeconomic performance in a sample of developing and advanced countries. Regardless of the exchange rate system, fluctuations in the effective exchange rate capture market-driven or pegged-induced movements in the bilateral exchange rates for major trading partners. The analysis of the paper evaluates the effects of exchange rate fluctuations on the macro economy. By construction, the nominal effective exchange rate accounts for openness, capturing import and export channels, to major trading partners. A depreciation of the domestic currency increases the price of imports and boosts competitiveness. Both channels are inflationary.

Through the supply side channel, depreciation may result in higher cost of intermediate goods for production in developing countries (see, e.g., Bruno, 1979 and Van Wijnbergen, 1989). Domestic substitutes for imported goods, particularly capital goods, are not readily available in many developing countries. As a result, the output supply may shrink on higher cost of imported inputs. Further, the cost of final goods would go up on account of a higher cost of imports.[2]

The inflationary effects of terms of trade shocks could be reinforced on price inflation, depending on the degree of flexibility of the exchange rate. For example, positive terms of trade shocks (a higher price of exports, relative to imports) could have a large inflationary effect, absent flexibility of the exchange rate to appreciate. Positive terms of trade shocks would increase liquidity and domestic demand, including for imports, increasing inflationary pressures. In contrast, negative terms of trade shocks (a higher price of imports relative to exports) would have a larger inflationary effect under a flexible exchange rate system. Depreciation would increase the domestic price of imports, reinforcing the inflationary effect of the negative terms of trade shock.

Most empirical studies have focused on the effect of depreciation on output, with little emphasis on the channels through the trade balance or exports.[3] This paper builds on a previous theoretical contribution that analyzes the relationship between exchange rate fluctuations and economic activity. Kandil and Mirzaie (2002) introduce a theoretical model that decomposes movements in the exchange rate into anticipated and unanticipated components using rational expectations. The solution of the theoretical model differentiates the effects of anticipated and unanticipated developments in the exchange rate on economic activity. Shifts in the output supply are dependent on movements in the anticipated exchange rate. In contrast, unanticipated exchange rate movements are likely to be the domain of demand and supply shocks.

The data under investigation are annual for a large number of developing and advanced countries. Following the decomposition of exchange rate shifts to anticipated and unanticipated components, the time-series evidence will indicate determinants of movements in the exchange rate and the effects of exchange rate shocks, on components of aggregate demand, financial flows in the balance of payments as well as on real output growth and price inflation. Further, cross-country analysis will identify variations in trend and variability of private consumption, private investment, output growth, price inflation and major components of external balances with movement in the exchange rate across the samples of developing and advanced countries.

The remainder of the paper is organized as follows. Section 2 outlines the demand and supply channels determining the effects of movements in the exchange rate and the associated pass-through to macro variables. Section 3 presents the time-series model. Section 4 analyzes movements in the exchange rate and the time-series effects of exchange rate shocks. Section 5 analyzes the implications of exchange rate fluctuations to macroeconomic performance across the samples of developing and advanced countries. A summary and conclusion are provided in Section 6.

2. Theoretical background

In the real world, stochastic uncertainty may arise on the demand or supply sides of the economy. Economic agents are assumed to be rational. Accordingly, rational expectations of demand and supply shifts enter the theoretical model. Economic fluctuations are then determined by unexpected demand and supply shocks impinging on the economic system.

The paper builds on the theoretical macroeconomic model in Kandil and Mirzaie (2002), (2003), and (2005) that incorporates exchange rate fluctuations of the domestic currency. Fluctuations are assumed to be realized around a steady-state trend that is consistent with variation in macroeconomic fundamentals over time. Uncertainty enters the model in the form of disturbances to both aggregate demand and aggregate supply. Within this framework, aggregate demand is affected by currency depreciation through exports, imports, and the demand for domestic currency, and aggregate supply is affected through the cost of imported intermediate goods. The model demonstrates theoretically that anticipated reduction in the equilibrium exchange rate decreases real output growth and raises price inflation, via the effect on the supply side. However, the relationship between unanticipated currency fluctuations (misalignments) and determinants of demand and supply makes the final outcome inconclusive.

The combination of demand and supply channels indicates that real output and the price level depend on unanticipated movements in the exchange rate, the money supply, and

[2] Agenor (1991) introduces a theoretical model for a small open economy and distinguishes between anticipated and unanticipated movement in the exchange rate. Examples of empirical investigations include Gylfason and Radetzki (1991), Rogers and Wang (1995), Hoffmaister and Vegh (1996), and Kamin and Rogers (2000).

[3] The literature concerned with the effect of devaluation on exports provides mixed results (Auboin & Ruta, 2011). See, e.g., Abeysinghe and Yeok (1998), Allard (2009) Bahamani-Oskoee and Bolhasani (2011), Bahamani-Oskoee and Mitra (2010), Berman and Berthou (2009), Cerra and Saxena (2003), De Pineres and Cantavella-Jorda (2010), Dutlaguta and Splimbergo (2000), Eckaus (2008), Edwards and Avies (2006), Freund and Pierola (2012), Huang, Mingquisn, Zhao, and Monrim Varum (2008), Jongwanich (2010), Mah (2007), Nam, Sonobe, and Otsuka (2010), Natsuda, Goto, and Thoburn (2010), Naude (2000), Nordas (2004), and Tewari (2008).