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Global monetary policy under a dollar standard

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Abstract

This paper derives an optimal monetary policy in a world with a dollar standard, defined as an environment in which all traded goods prices are set in US dollars, so that exchange rate pass-through into the US price level is zero. We show that the US is essentially indifferent to exchange rate volatility, while the rest of the world places a high weight on exchange rate volatility. In a Nash equilibrium of the monetary policy game, US preferences dominate; the equilibrium is identical to one where the US alone chooses world monetary policy. Despite this, we find surprisingly that the US loses from the dollar's role as an international currency, since the absence of exchange rate pass-through leads to inefficient expenditure allocations within the US. Finally, we derive the conditions for a dollar standard to exist.

Keywords: Dollar standard; Reference currency; Asymmetric pricing; Monetary policy; Welfare

JEL classification: F0; F4

1. Introduction

> *If the dollar were ever displaced by the euro,* [*the US*]*… would lose the enormous freedom it now enjoys in running macro-economic policy.*

Ambrose Evans Pritchard, Daily Telegraph, October 10, 2003.

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The US dollar occupies a unique role in the world economy. The dollar resembles an international currency, in the sense that it acts as a means of exchange in international goods and asset trade, a store of value in international portfolios and official foreign exchange reserves, and a unit of account in international commodity pricing.[1] This predominance of the US dollar has been described by McKinnon (2001, 2002) as a world *dollar standard*.

How does the special role of the US dollar influence monetary policy making in the US and the rest of the world? The quotation above suggests that the US has an advantage in policy making due to the fact that the rest of world holds dollars, and sets prices in dollars. Indeed many commentators argue that there is an enormous welfare gain to the US from having its currency used so widely (e.g. Liu, 2002).

This paper examines the determination of optimal monetary policy in an asymmetric world economy, where the currency of one country (e.g. the US dollar) plays a predominant role in trade.[2] While the US dollar has multi-dimensional role as an international currency, we focus on one particular aspect of this role — the importance of the currency in international export good pricing. We define a *reference currency* as one in which the prices of all world exports are pre-set. Many authors have noted (e.g. Campa and Goldberg, 2005) that prices of imported goods sold in the US economy tend to be much less affected by exchange rate fluctuations than do imported good prices in non-US countries.[3] Tavlas (1997) finds that during 1992–1996 98% of US exports and 88.8% of US imports were invoiced in US dollars. In addition, Goldberg and Tille (2005), using a new panel data set on the invoicing of international trade, find that the US dollar is the currency used for most transactions involving the US, and moreover, represents a vehicle currency in many trade flows that do not involve the US.

These findings suggest that prices of a large fraction of exports to the US are pre-set in US dollar terms (which we refer to as local currency pricing, or LCP), and do not react quickly to movements of the exchange rate. However, exports from the US are also likely to have prices pre-set in dollars (producer currency pricing, or PCP). Hence import prices in other countries should be more sensitive to exchange rate movements.

How does this asymmetry in international export good pricing affect optimal monetary policy? We show that at one level the model quite closely accords with popular wisdom about the position of the US dollar in the world economy. In particular, the monetary authority of the reference currency country places a very low weight on exchange rate volatility in its monetary policy loss function. By contrast, the monetary authorities of rest of the world will be much more concerned with exchange rate volatility. This seems to well approximate the observed indifference of the US to the exchange rate in monetary policy making. In addition, the reference currency country follows a more stable monetary policy than the rest of the world.

More importantly, we find that the monetary policy game between the reference currency country and the rest of the world has a key sense in which the reference country is predominant. The Nash equilibrium of the asymmetric game is the same as that which would obtain were the

[1] The dollar is used as one side of about 90% of daily foreign exchange rate transactions. According to Eichengreen and Mathieson (2000), 60% of world foreign exchange reserves are held in US dollars. Bekx (1998) estimates that over 50% of world exports in 1995 were denominated in US dollars, approximately four times the share of the US in total world exports.

[2] In the recent international macroeconomics literature, considerable attention has been devoted to the determination of optimal monetary policy under sticky prices. See Benigno and Benigno (2003), Devereux and Engel (2003), Obstfeld and Rogoff (2002), among many other papers. But most of this literature focuses on symmetric environments.

[3] Bacchetta and Van Wincoop (2005) and Kenen (2003) note that the US dollar is used as an invoice currency for the overwhelming majority of US imports, but for other OECD countries, imports are mainly invoiced in foreign currency.