# Literature Review of Dominant Currency Paradigm

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## 1 Introduction

Under sticky nominal prices, the change in the nominal exchange rate can have an impact on the real variables such as employment and output level. In the 1930s during the Great Depression, devaluations of home currency became a common "beggar thy neighbor" policy to address the high domestic unemployment, in which countries are perceived as competing to export unemployment abroad. From the end of World War II until 1971, the fixed exchange rate under the Bretton Woods system was put into practice and ruled out the competitive devaluation as an option for monetary policy. At the same time, the world experienced strong economic growth, reducing the incentive for a country to trigger the devaluation. After the fall of the Bretton Woods system, most of the economies in the world adopt certain types of floating exchange rates, and the choice of invoice currency in international trade can have a drastically different impact on exchange rate pass-through.

This then leads us to the discussion of exchange rate pass-through, trade elasticity, and the related international spillovers of monetary policy. The devaluation channel above assumes a high exchange rate pass-through, which is intuitive if the trade is invoiced in the currency of producing country. However, this may not be the case in most of the trade that happened around the world. To better understand the exchange rate pass-through under different invoicing practices, the general equilibrium New Keynesian models with price rigidities and monopolistic pricing behavior were developed in the field of an open economy. Models with different assumptions of the currencies in which the price is fixed compete to lead the discussion. They can be categorized as under producer currency pricing paradigm (PCP), local currency pricing paradigm (LCP), and dominant currency pricing paradigm (DCP).

In the following, I am going to discuss the model implication of DCP, in contrast to that of PCP and LCP. Also, empirical findings supporting and against DCP are both explored. Last but not least, the broader context of flexible exchange rates and their interaction with DCP is brought to discussion.

## 2 Different Currency Pricing Paradigms

PCP was the first pricing paradigm assumed and was first proposed by Mundell [6] and Fleming [3]in the 1960s. The price is assumed to be sticky in the currency of producing country. The model with PCP implies the law of one price parity and explained why currency devaluation is lucrative for the social planner. A nominal depreciation results in a decrease in the price of export relative to that of imports, worsening the terms of trade and increasing the export competitiveness. Therefore, the domestic production of export increases unemployment decreases and the consumption switch from import to domestic output. The model suggested that the exchange rate pass-through to the import price is high.

LCP was then proposed at the beginning of the new millennial by Betts, Devereux, and Engel to better address the issue that the one price parity indeed failed to hold in empirical data. The price is assumed to be sticky in the currency of the destination market. The model under LCP implies that the devaluation of home currency makes the home export less competitive. This model suggested that the exchange rate pass-through to the export price is high.

However, throughout the international practice after the Bretton Wood system, only a few currencies are used in the international invoicing, with the US dollar being the main vehicle. With this fact, Gopinath et. al (2020) [4] proposed the DCP model, where firms set export prices in a dominant currency, mainly the dollar, with friction in price changing frequency. To make dominant currency pricing the optimal choice by firms instead of ad hoc imposition, further assumptions are needed. The pricing behavior of exporters is characterized by strategic complementarities, resulting in variable desired mark-ups. Furthermore, they are assumed to use imported inputs to produce, which also match the real-world global value chain landscape.

Under DCP, since both import price and export prices are priced in US dollars, the terms-of-trade should be independent of the bilateral exchange rate between the import and export countries dyad. Regarding the exchange rate pass-through, the dollar should have a dominant impact on the bilateral exchange rate. Therefore, the dominant currency paradigm makes currency devaluation an invalid measure of improving trade balance.

The differential transmission of monetary policy shocks across different pricing paradigms is then studied in the paper numerically. It shows that under DCP, nondominant currency issuers face larger monetary spillover from the dominant currency country. For nondominant currency issuers, the same magnitude of expansionary policy achieves a smaller increase in the output and a larger increase in inflation. A devaluation of the home currency relative to the dollar results in a proportional increase in the price of imports but will not make exports more competitive.

The authors then tested the paradigm using one country-level and one firm-level data sets. Both reduced-form regression analysis and structural model calibration were carried out. The multivariate regression of the bilateral terms-of-trade on changes in the bilateral exchange shows a coefficient close to zero, predicted by DCP. In the regression to identify the magnitude of the exchange rate pass-through, the US dollar exchange rate dominates the bilateral exchange rate in explaining the volatility of import prices. In their model simulation using firm-level data from Colombia, the outcome again supports DCP than PCP and LCP.

# 3 Empirical Evidence

Boz et al. (2019) [1] reaffirmed the fact that the dollar exchange rate pass-through is proportional to the importer dollar invoicing share between the importer-exporter dyads. However, using natural experiment data, Sarsenbayev and Gagnon(2021) [9] countered the DCP hypothesis by showing insensitivity of trade prices to the dollar.

The paper by Boz et al. [1] focuses on understanding how important the dollar invoicing share is in determining pass-through relative to other determinants. Using the country pairs data, they found that the heterogeneity of exchange rate pass-through across different country pairs (dyads) can be explained by the DCP with the US dollar being the dominant invoicing currency, and the magnitude of the exchange rate pass-through is related to the trade invoicing share in dollars. The paper tested the hypothesis using standard bilateral pass-through regression with a hierarchical Bayesian approach. Their finding echoed that found in Gopinath (2020) [4]. They estimate that the importing country's share of imports invoiced in dollars explains 15% of the variance of dollar pass-through across country pairs.

Nevertheless, Sarsenbayev and Gagnon(2021) [9]disagreed that the dollar is the dominant currency, if not the existence of a dominant currency. They did not do either regression analysis or model simulation, but just presenting data trends before and after the substantial uniform dollar appreciation of 2014-15. Export prices of each country are compared with their changes in producer price indexes (PPI), PPI of the US, and that of the rest of the world (ROW). Under DCP, three indices should move in the same direction, but the data shows a prevalent divergence in most of the countries examined. Only 2 (Israel and Thailand) out of 22 economies they examined experienced an increase in export prices, while the rest followed domestic prices or a trade-weighted average of prices in foreign currencies. They further categorized different economies into different currency paradigms based on the pattern of their export price movements.

Whether DCP can better describe global trade is still an ongoing debate. One attempt to address the counterevidence brought up by Sarsenbayev and Gagnon is that the producer price index may not be a good indicator for studying exchange rate pass-through since the basket to calculate the PPI is not the same as the basket of import goods. Furthermore, it can be misleading to show the divergence

without discussing the exchange rate and capital control policy each country follows during the period. For example, Hong Kong adopts the so-called "linked exchange rate system" that pegs the Hong Kong dollar (HKD) to the US dollar. Thus, if Hong Kong is better characterized by PCP, we can still observe a highly correlated export price index with US PPI. Furthermore, China does not allow free capital outflow, thus when the dollar appreciates, the Chinese yuan renminbi (CNY) may not depreciate as much as that without capital control. Also, China and India were alleged of manipulating the exchange rate, which may affect how appreciation in the US dollar transmits to the value of their currencies and the impact on trade. To get more robust results, standard exchange rate pass-through regression may be needed, and by adding control variables, we can reach a better conclusion about the explanatory power of dollar price on the export price.

# 4 DCP under Flexible Exchange Rate

To better understand the rationale of dominant currency pricing, some perspectives from the view of the global financial cycle and international policy coordination may help. The above shown that the impact of the nominal exchange rate volatility on real variables highly depends on the currency in which prices are invoiced and sticky. Therefore, this fact becomes critical when we discuss the benefits and costs of floating a currency. In addition, the global environment changes rapidly at the same time and has different implications for researchers. According to Obstfeld (2020)[7], there is a further development of international financial markets, an arena where the US dollar keeps its dominant role. At the same time, emerging economies become more integrated with the rest of the world, notably BRICs, with an increasing amount of international trade and international financial transactions. How the emerging markets shield themselves from the global financial volatility using different policy tools, and the impact of invoicing currency choice seems intertwined, given the context of the specialization of the global value chain and the global financial crisis. According to the balance of payment, emerging markets with large trade surplus hold the same amount of foreign assets at the same time. In addition, emerging markets usually borrow in the international financial market to fund their economic growth, accumulating foreign liabilities invoiced in foreign currency. Due to the dominant role of the dollar in the international financial market, using the dollar also as the invoicing currency in the trade may seem like a measure to match the volatility on the inflow and outflow of capital.

In addition, according to Rajan (2016) [5], the expansionary monetary policy adopted by several developed countries after the 2008 global financial crisis to tackle domestic unemployment had a negative spillover to the rest of the world, including emerging markets. Specifically, the spillover hit in the form of exchange rate movement, which may harmless economically developed but highly open economies. The global capital flow driven by these forces can become a source of instability for emerging markets, in the form of accumulation of foreign reserves and domestic inflation when the capital flow in, and the currency devaluation when capital flees. This characteristic of an emerging market is documented in Calvo and Reinhart's well-known paper "fear of floating", published in 2002 [2], and again reinforces the dominant currency pricing with the consideration of economy stabilizing in the context of the post-Bretton Woods era.

However, there is disagreement with the role of DCP with floating exchange rate and even other monetary policy that can indeed stabilize the economy. Rey brought this point up in his 2014 paper [8], saying that the floating rate may not help to insulate the open economy from the global financial wave. She argued that the key lies in how integrated the economy is with the rest of the world, instead of the exchange rate system chosen, given the global integration level of the country. She believes that without the intervention of macroprudential policies, capital controls are the way to delink with the world financially and to stabilize the domestic market.

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