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# Comparative advantage, service trade, and global imbalances

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ABSTRACT

The large current account deficit of the U.S. is the result of a large deficit in the goods balance and a modest surplus in the service balance. The opposite is true for Japan, Germany, and China. Moreover, I document the emergence from the mid-nineties of a strong negative relation between specialization in the export of services and the current account balances of a large sample of OECD and developing countries. Starting from these new stylized facts, I propose in this paper a service hypothesis for global imbalances, a new explanation based on the interplay between the U.S. comparative advantage in services and the asymmetric trade liberalization process in goods trade versus service trade that took place starting in the mid-nineties. First, I use a structural gravity model to show that service trade liberalization lagged behind goods trade liberalization, and I quantify the extent of this asymmetry. Second, I show that a simple two-period model can rationalize the emergence of current account deficits in the presence of such asymmetric liberalization. The key inter-temporal mechanism is the asymmetric timing of trade policies, which affects saving decisions. Finally, I explore the quantitative relevance of this explanation for global imbalances. I introduce trade costs in an otherwise standard 2-sector 2-country international real business cycle model. When fed with the asymmetric trade liberalization path found in the data, the model generates a trade deficit of about 5% of GDP. I conclude that the service hypothesis for global imbalances is quantitatively relevant.



## 1. Introduction

The accumulation of current account deficits in the U.S., accompanied by the corresponding surpluses registered in Japan, Germany, China and other countries, has generated the phenomenon known as global imbalances. This is described as "probably the most complex macroeconomic issue facing economists and policy makers" (Blanchard and Milesi-Ferretti, 2009). The emergence of such imbalances has also been recently suggested as one of the sources of the "great recession" that began in 2007 (Obstfeld and Rogoff, 2009; Bernanke, 2009).

The motivation for this paper is best understood by exploring the composition of global imbalances. Fig. 1 shows the U.S. trade balance disaggregated into its two main components: the goods balance and the service balance. It is clear from this figure that the U.S. trade imbalance is due to a large deficit in the goods balance and a modest surplus in the service balance. Japan, Germany and China, on the other hand, are characterized by trade surpluses. In all these three cases, the trade surplus can be decomposed into a surplus in the goods balance and a deficit in the service balance.[1]

Moreover, the data show a systematic relationship between specialization in services and current account, which was never observed before. This relationship is illustrated in Fig. 2, which shows a scatterplot for 32 OECD countries, as well as Brazil, Russia, India, and China. The horizontal axis reports the revealed comparative advantage in services in 1995 — an index increasing in the relative export specialization. The vertical axis reports the current account balance over GDP in 2006.[2] From this graph, the relationship is evidently negative. Countries that are relatively specialized in the export of services, such as the U.S. and the UK, predominantly display current account deficits. Countries that are relatively specialized in the export of goods, such as Japan, Germany, and China, display current account surpluses. To investigate the robustness of the result, the same scatterplot is reported for a larger sample of 83 countries. This negative relation between export specialization in services and current account is markedly displayed in Fig. 3.

Starting from these new stylized facts, I propose a new explanation for the formation of global imbalances. The focus of this story is the interplay between the comparative advantage of the U.S. in services and the asymmetric trade liberalization process in goods versus service trade that took place in the last two decades, particularly since the mid-nineties.

In fact, starting in 1995, the conclusion of the Uruguay Round and the advent of the World Trade Organization (WTO) spurred the liberalization of trade, especially in goods and agricultural products. At the same time, the General Agreement for Trade in Services (GATS) was signed. However, in this same 15-year period, the liberalization process

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[1] See the online appendix for details.

[2] When global imbalances peaked.

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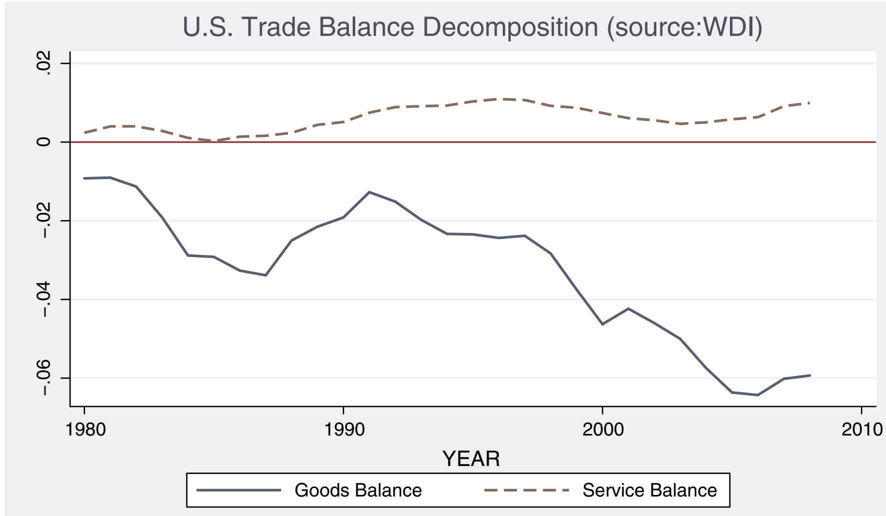


**Fig. 1.** Composition of the U.S. trade balance, percentage of GDP.

in service trade did not seem to have made much progress (Adlung, 2009).

The first part of this paper establishes and provides empirical evidence for the presence of a revealed comparative advantage of the U.S. in services. It also analyzes the emergence of the negative relation between specialization in service trade and current account balance, which was presented earlier in Figs. 2 and 3. A simple Balassa-type index of Revealed Comparative Advantage (RCA) confirms that the U.S. is relatively specialized in services, while Germany, Japan and China display a revealed comparative advantage in goods. Moreover, the negative relation presented in Figs. 2 and 3 is robust and strongly statistically significant, both in a cross-section and in a panel regression analysis. Past revealed comparative advantage is able to explain about 50% of the variation of current account balances. More importantly, this relation does not rely on comparative advantage in financial services and it emerges only when examining the post-1995 period.

In the second part of the paper, I use the structural gravity model developed by Anderson and van Wincoop (2003) to document the presence of an asymmetry in the liberalization of goods trade versus service trade. I use the newly proposed concept of the Constructed Home Bias Index (CHB) developed by Anderson and Yotov (2010a, 2010b) to quantify the extent of this asymmetry. The CHB index is the ratio of the realized internal trade in a given sector relative to the internal trade that would prevail in a frictionless world. This index is a pure number, and therefore can be compared across different sectors. An appropriately weighted average of this index captures the liberalization process in manufacturing versus service trade at the world level. While the index for manufacturing trade, available from 1995, is declining since the mid-nineties, the index for services declines at a much slower rate during the same time period. This asymmetry is quantified at of the order of 11% over the 15 years for which data are available.

In the third part of the paper, I show that a simple two-period model can rationalize the emergence of current account deficits in the presence of such an asymmetric liberalization process. The structure of the model is minimal – endowment economies with complete specialization – to maximize transparency of the mechanisms and results. In the service-importing countries (like Japan, Germany, and China), the anticipation of a future reduction of impediments to trade in services generates an increase in savings. This is due to an increase in the consumption-based real interest rate — intuitively, it is convenient to save for future

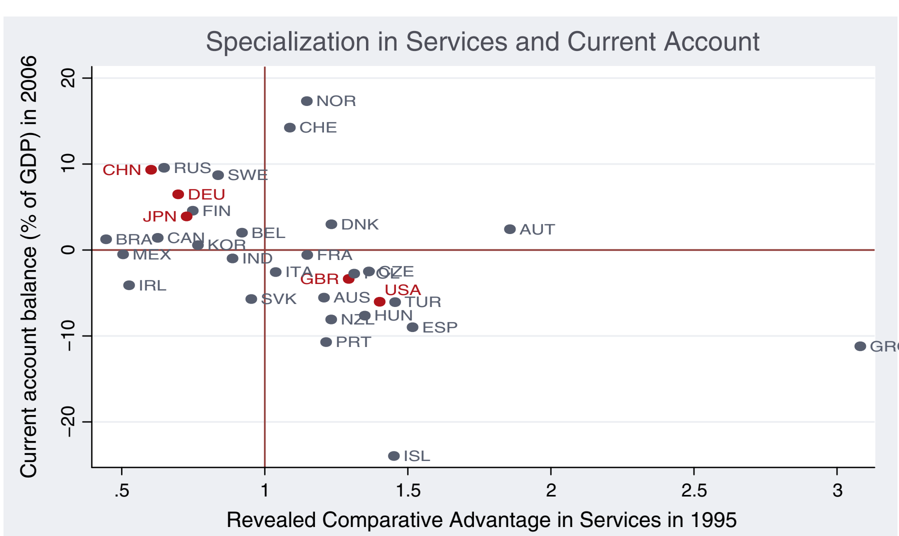


**Fig. 2.** Current account over GDP and RCA in services, OECD plus BRICs, 2006.