

# The geography of trade in goods and asset holdings

Antonin Aviat <sup>\*,1</sup>, Nicolas Coeurdacier <sup>1</sup>

*PSE-ENS, 48 Boulevard Jourdan, 75014 Paris, France*

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## Abstract

Gravity models have been widely used to describe bilateral trade in goods. Portes and Rey [Portes, R., Rey, H., 2005. The Determinants of Cross-Border Equity Flows. *Journal of International Economics*, 65(2), 269–296.] applied this framework to cross-border equity flows and found that distance, which proxies information asymmetries, is a surprisingly very large barrier to cross-border asset trade. We adopt a different point of view and explore the complementarity between bilateral trade in goods and bilateral asset holdings in a simultaneous gravity equations framework. Providing different instruments for both endogenous variables, we show that a 10% increase in bilateral trade raises bilateral asset holdings by 6% to 7%. The reverse causality is also significant, albeit smaller. Controlling for trade, the impact of distance on asset holdings is drastically reduced.

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## 1. Introduction

The determinants of international asset holdings have recently received renewed attention. Existing theories are mostly based on portfolio choice models and put forward risk-sharing as the main motive for cross-border asset trade. However, this literature has been empirically extremely disappointing. Indeed, Capital Asset Pricing Models predictions do not fit data on international portfolios for two main reasons. First, those models were unable to replicate the size of the “home bias” in country portfolios. If twenty years ago the segmentation of financial markets could well

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\* Corresponding author. Tel.: +33 1 4313 6326; fax: +33 1 4313 6310.

E-mail addresses: [aviat@pse.ens.fr](mailto:aviat@pse.ens.fr) (A. Aviat), [coeurdacier@pse.ens.fr](mailto:coeurdacier@pse.ens.fr) (N. Coeurdacier).

<sup>1</sup> PSE (joint research unit CNRS–EHESS–ENPC–ENS), Paris.

explain the “home bias puzzle”, it is not likely to be the case today. Second, countries seem to invest much more in geographically close economies. [Portes and Rey \(2005\)](#) highlight the very large impact of geography on cross-border equity flows: when physical distance is doubled, capital flows are at least divided by two. To explain this surprising result, they argue that informational asymmetries lead to higher transaction costs between distant economies. Moreover, as they point out, since distant economies should be a better hedge for regional risk, this result is hard to justify in a world where investors want to diversify their risk. Those results suggest that barriers to international investment are still large, which is at odds with the popular view of intense and widespread financial globalization.

This puzzling effect of distance on capital flows leads to the following question: does distance directly affect international financial investment or does the negative impact of distance go through another feature of globalization? In this paper, we argue that distance affects bilateral asset holdings mainly through its impact on trade in goods. The argument is the following: assume that trade in goods is a powerful determinant of asset portfolios. In that case, since distance, understood as transport costs, reduces international trade in goods, it is likely to also reduce bilateral asset holdings. Indeed, we show that the “distance puzzle” documented by [Portes and Rey](#) is drastically reduced once we control for trade in goods. We find that the distance effect on asset holdings is at least divided by two. The remaining challenge is to explain why asset portfolios are induced by trade in goods.

Thus the second motivation of this paper is to analyze the complementarity between bilateral trade in goods and bilateral financial claims. Indeed, there are good reasons to think that trade in goods and trade in assets are closely related.<sup>2</sup> First, due to information asymmetries, entrepreneurs may learn about each other by trading goods and this information facilitates trade in financial assets (and vice versa). Second, in the complete markets model developed by [Obstfeld and Rogoff \(2000\)](#), trade costs (transportation costs or other barriers to international trade) induce a bias in investors portfolios towards domestic securities and securities of their trading partners. As a consequence, country portfolios would reflect trade patterns. [Lane and Milesi-Feretti \(2004\)](#) test this model in an  $N$ -countries set-up and find the expected effects. However, the argument can easily be reversed: it may be that transaction costs in financial markets (pure transaction costs or informational costs) make agents exchange goods with countries with whom they can easily exchange securities. As a consequence, international investment patterns would impact trade flows.

Are those relations between trade and finance of first-order magnitude: in other words, can we still model international trade and international investment separately? We investigate this question empirically and the answer is an unambiguous no: we find a very robust and significant effect of trade on financial asset holdings. Moreover, the causality runs significantly in both ways although the impact of asset holdings on trade in goods is smaller.

In line with [Portes and Rey \(2005\)](#), we consider the “home bias” as given and focus on the determinants of geographical asset holdings using a “gravity equation” set-up<sup>3</sup>. We use a data set<sup>4</sup> which breaks down international banking assets by countries<sup>5</sup>. We find that informational

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<sup>2</sup> [Obstfeld and Rogoff \(2000\)](#), [Rose \(2005\)](#), [Rose and Spiegel \(2002\)](#) and [Serrat \(2001\)](#) provide theoretical arguments for such a complementarity between trade in goods and asset holdings.

<sup>3</sup> “Gravity models” in which bilateral trade flows are explained by the size of the two partners and the distance between them have been used since the 1960s and have provided a powerful predictor of bilateral trade flows.

<sup>4</sup> The Bank for International Settlements (BIS) consolidated International Banking Statistics.

<sup>5</sup> We use stock data whereas [Portes and Rey](#) mainly use equity flow data, doing some robustness checks on US-centric stock data.

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