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Dollarization does promote trade

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A B S T R A C T

This study re-evaluates the treatment effect of dollarization on trade while explicitly controlling for self-selection of policy adoption. Employing a variety of propensity score matching methods, we show that dollarization not only increases bilateral US trade with dollarized countries, but promotes a dollarizer's bilateral trade with other dollar-zone countries as well.

1. Introduction

Thanks to the string of financial crises in Asia, Russia, and Argentina and the relative success of the Euro, dollarization has become an increasingly serious issue for both policymakers and researchers since the late 1990s. An important benefit of adopting full dollarization, as argued by its proponents, is the trade-enhancing effect: by reducing transaction costs, dollarization can promote bilateral trade between a dollarized country and the US (other dollarized countries).[1]

Existing empirical work on this issue, however, has provided mixed results at best. Related empirical studies can be dated back to Andrew Rose and his coauthors' work on currency union membership and trade.[2] Employing a gravity model, Rose and his coauthors find that a currency union membership has large and significant effects on promoting bilateral trade among members. This gravity model approach is later challenged by Persson (2001), who argues that non-random selection of policy adoption and model misspecifications are likely to cause biased results in previous studies.

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[1] See, among others, Dornbusch (2001) and Alesina and Barro (2001).

[2] These studies include Rose (2000), Glick and Rose (2002), Rose and van Wincoop (2001), and Frankel and Rose (2002) Other related studies include Nitsch (2002) Pakko and Wall (2001), and Thom and Walsh (2002).

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Using a non-parametric propensity score matching method, Persson (2001) shows that, after controlling for self-selectivity, the effects of currency union on bilateral trade flows become much weaker. Klein (2005) is the first study in the literature that investigates the trade-enhancing effects of dollarization. Applying Rose's gravity model approach, Klein (2005) finds that dollarization does not significantly increase bilateral trade among six countries that have experienced dollarization, nor does it promote their bilateral trade with the US.[3]

Our study revisits the original work by Klein. We re-evaluate the treatment effects of dollarization on bilateral trade, while explicitly controlling for non-random selection of policy adoption. Using a variety of non-parametric propensity score matching methods, we find strong and robust evidence supporting the trade-enhancing effect of dollarization. We show that dollarization not only increases bilateral US trade with dollarized countries, but also promotes a dollarizer's trade with other dollar-zone countries (other dollarized countries and the US).

The rest of this study is organized as follows. Section 2 describes our data and empirical methodology. In Sections 3 and 4, we estimate the treatment effect of dollarization on bilateral US trade and bilateral trade of dollarized countries, respectively. Section 5 offers our conclusions.

2. Data and methodology

2.1. Data

The data used in this study are drawn from Glick and Rose (2002), which contains annual observations on bilateral trade and a set of covariates from 165 countries between 1948 and 1997.[4]

2.2. Treatment effect and selection bias

The objective of this study is to estimate two sets of the treatment effect of dollarization on trade. First, we evaluate the treatment effect of dollarization on bilateral US trade with the six dollarized countries to address the question of whether the US tends to trade more with these countries after they adopt dollarization. Second, we also estimate the treatment effect of dollarization on bilateral trade of dollarized countries to address the question of whether, by dollarizing, a country promotes its trade with dollar-zone countries as compared to its trade with other countries.

To formally estimate the average treatment effect of dollarization on the treated (ATT), we consider the following equation:

$$\mathrm{ATT} = E[Y_{i1}|D_i = 1] - E[Y_{i0}|D_i = 1] \quad (1)$$

where $Y_{i0}|D_i = 1$ is the value of the outcome (bilateral trade flows) that would have been observed if a dollarized country had not adopted dollarization and $Y_{i1}|D_i = 1$ the outcome value actually observed on the same country. The fundamental difficulty in estimating the ATT is that $Y_{i0}|D_i = 1$ is not observable. We could not observe a dollarized country's bilateral trade flows had it not adopted such a policy. If a country's dollarization choice is completely random, one can easily obtain the ATTs by comparing the sample mean of the treatment group (dollarized countries) with that of the control group (non-dollarized countries). This simple method will generate biased estimates if the dollarization decision is not random. In particular, if the dollarization choice is correlated with a set of observable covariates that are also likely to affect the bilateral trade, then we will have the "selection on observables" problem, which makes traditional linear regression an unreliable method.[5]

[3] These six countries are Bahamas, Bermuda, Dominican Republic, Guatemala, Liberia, and Panama.

[4] The data are obtained from Andrew Rose's website, http://faculty.hass.berkeley.edu/arose/.

[5] See Dehejia and Wahba (2002) and Heckman et al. (1997, 1998). Also, note that the selectivity problem here is neither selection on unobservables (omitted variables) nor a Heckman-type sample selection problem.