

The creation of the euro has reinvigorated a long-running debate about the wisdom of currency unions. **João Santos Silva** and **Silvana Tenreyro** investigate whether the new currency has delivered the promised increase in trade between member countries.

Has the euro increased trade? Short answer: no

What are the costs and benefits of establishing a currency union between countries? In his seminal theory of 'optimum currency areas', Nobel laureate Robert Mundell (1961) envisaged that the main economic benefit would be the increase in international trade stemming from the elimination of currency conversion costs and the possibly greater predictability of prices.

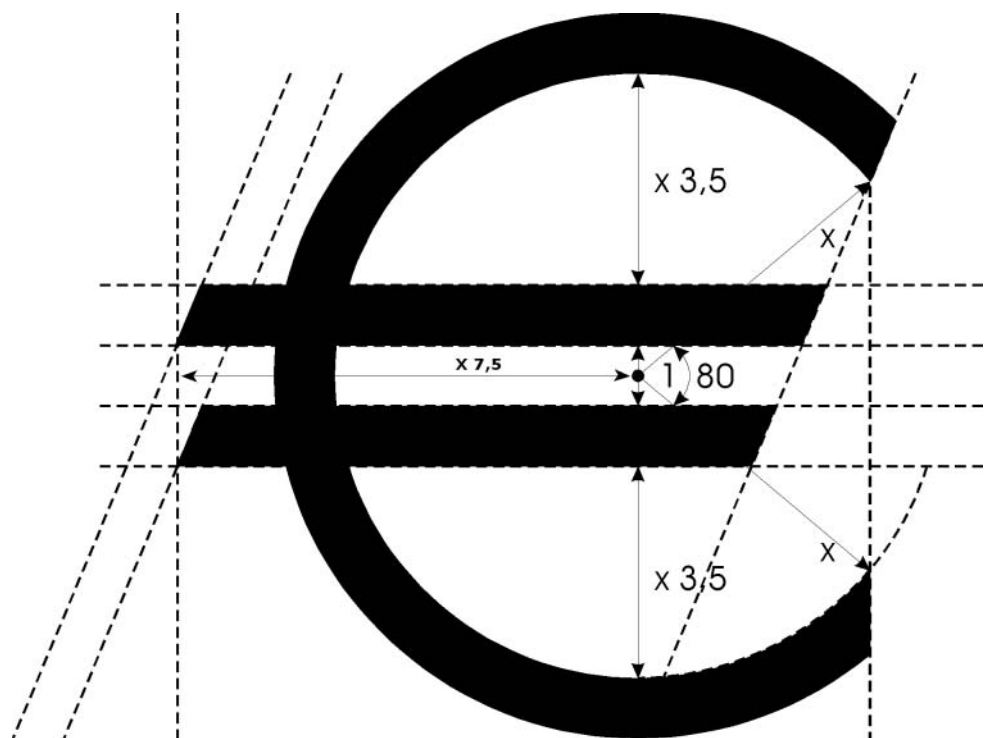
The main argument against currency unions is the loss of member countries' independence to tailor monetary policy to their local needs. But Mundell suggested that three conditions reduce the cost of relinquishing monetary independence – similarity of the economic shocks that members experience; wage and price flexibility; and mobility of capital and labour. These conditions tilt the policy choice in favour of a currency union.

Until very recently, there has been little progress in the empirical assessment of the costs and benefits of joining a currency union. Indeed, 40 years after Mundell's seminal paper, Andrew Rose (2000) would present the first systematic attempt to quantify the effect of currency unions on trade. Rose estimated that sharing a common currency increased bilateral trade between countries by

over 200%. This result was received with some scepticism, and a large number of papers, including some by Rose himself, investigated the robustness of the initial finding.

Empirically assessing the effects of currency unions on trade is a difficult task that raises a number of methodological issues (discussed in Baldwin, 2006), which have not always been dealt with satisfactorily. Despite concerns about the

reliability of the empirical results, most work in this area found a substantial effect on trade from pre-euro currency unions, and a consensus grew that such unions do indeed enhance trade, even if by less than initially estimated. But projections for the eurozone were hard to make because the union involved relatively richer countries that were already fairly well integrated. Time was needed to gauge the trade effect of the euro.



There is little evidence that the creation of the euro has had an effect on trade between the original members

The first evaluation of the euro's effect was undertaken by Alejandro Micco and colleagues (2003), who concluded that the currency increased trade among eurozone members by between 4% and 16%. Subsequent work has addressed various shortcomings of that study, including the short sample period (from 1992 to 2002), the 1993 break in the trade series resulting from changes in the way statistics are collected, as well as other methodological issues discussed in Baldwin's 2006 paper.

These studies generally confirmed the positive effects of the euro on trade. But the range of estimates for the euro's effect is very wide: from 2% to more than 70%. Unfortunately, most of these studies are marred by methodological weaknesses and their results should be viewed with caution.

In an attempt to provide more reliable evidence, our research estimates the effect of the euro on trade using what is known as a 'differences-in-differences' approach. Loosely speaking, this technique is based on the comparison between trade flows for the periods before and after the euro was introduced for two groups of countries: those that joined the euro during the observation period (the 'treatment' group) and a comparable group of trading partners that did not join the euro (the 'control' group). The effect of the euro can then be obtained as the difference in the changes from the pre- to the post-euro period for the two groups.

The use of the differences-in-differences approach is now standard in labour economics and health economics, but has not been used in this context. It is particularly appealing for this purpose because it allows estimation of the euro's effect while taking account of systematic differences between the countries that joined the euro and

comparable countries that did not join, such as the UK and Denmark.

In particular, the method takes account of the fact that the economies of the eurozone countries were already deeply integrated before the currency was introduced. Micco and colleagues also accounted for this in some of their estimates but, as indicated, their work suffered from other limitations.

Our study is also novel in that it implements the differences-in-differences estimation using methodological advances in our earlier work on the estimation of models for trade flows (Santos Silva and Tenreyro, 2006).

We implement the approach using the 'euro-12' (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain) as the treatment group and analysing three control groups of different sizes and various degrees of similarity to the euro-12.

Our new results confirm that long before the euro was created, trade between the euro-12 was already considerably stronger than between comparable countries, even those that were part of the European Union. More interestingly, the results strongly suggest that after controlling for the fact that the euro-12 countries already traded much more intensively, there is little evidence that the euro had any effect on trade between them.

So what Mundell considered the main benefit of a currency union does not appear to have been realised for the euro, at least not for the euro-12. It is, however, possible that the euro has had and will continue to have a significant trade effect for newer eurozone members, the economies of which were not so deeply integrated before joining the euro. More time will be needed to evaluate this possible effect.

The economies of the eurozone countries were already deeply integrated before the currency was introduced

This article summarises 'Currency Unions in Prospect and Retrospect' by João Santos Silva and Silvana Tenreyro, *Annual Review of Economics* 2: 51-74 (September 2010).

An earlier version is available as CEP Discussion Paper No. 986 (<http://cep.lse.ac.uk/pubs/download/dp0986.pdf>).

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Further reading

Richard Baldwin (2006) *In or Out: Does it Make a Difference? An Evidence-based Analysis of the Trade Effects of the Euro*, Centre for Economic Policy Research.

Alejandro Micco, Ernesto Stein and Guillermo Ordoñez (2003) 'The Currency Union Effect on Trade: Early Evidence from EMU', *Economic Policy* 18: 315-56.

Robert Mundell (1961) 'A Theory of Optimum Currency Areas', *American Economic Review* 51: 657-65.

Andrew Rose (2000) 'One Money One Market: Estimating the Effects of Common Currencies on Trade', *Economic Policy* 15: 9-48.

João Santos Silva and Silvana Tenreyro (2006) 'The Log of Gravity', *Review of Economics and Statistics* 88: 641-58.