

Currency Unions and Irish External Trade

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Keywords:	EMU, Trade, Ireland



CURRENCY UNIONS AND IRISH EXTERNAL TRADE *

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Abstract

Ireland has participated in two currency unions - a bilateral union with the United Kingdom that lasted until 1979 and as a founder member of European Monetary Union that began in 1999. This paper investigates whether currency unions have influenced Irish trade patterns.

(JEL: F14, F17, F31)

* Lane's work on this paper was supported by the IRCHSS and the HEA-PRTLTI grant to the IIS. We thank Patrick Honohan for helpful suggestions and Luca Ricci for Stata code.

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1. Introduction

The impact of currency union on the volume of international trade has been studied intensively in recent years, following the seminal contribution of Rose (2000). Estimates vary widely across different specifications and samples, with the out-of-sample relevance of estimated coefficients much disputed. In particular, the original Rose estimates have been viewed as having limited relevance for currency unions among high-income countries. This has led to a wave of research that has tried to directly estimate the impact of European Monetary Union (EMU) on trade, rather than rely on estimates obtained from other currency unions. Prominent contributions in this literature include Micco et al (2003) and the survey by Baldwin (2006).

The 'EMU and trade' literature has recognized that differences in the structural characteristics and initial positions of the individual member countries mean that the impact of EMU is unlikely to be uniform across these countries. For this reason, it is useful to consider studies of individual member countries. In this regard, Ireland is a particularly interesting case, since EMU is not its first experience with currency union – until 1979, it was in a long-standing currency union with the United Kingdom. Accordingly, our goal in this paper is investigate the impact of these two currency unions on Irish trade.

Our paper relates to several recent contributions. The time series evidence on the relation between currency unions and trade has been most extensively explored by Glick and Rose (2002), who find a significant impact: for instance, leaving a currency union implies a decline in trade volume of about 50 percent. In relation to Ireland, Thom and Walsh (2002)

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16 1992-2002 and has twenty-two source countries – in contrast, we focus on a single source
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18 country (Ireland) and a much longer time span (1950-2004). Finally, Dwane (2006) provides
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22 applied in studying Irish trade.
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31 **2. Data Description and Empirical Specification**

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58 ¹ A detailed data appendix is available from the authors upon request.
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Our baseline empirical specification postulates a long-run relation between the volume of trade and a set of core regressors, including dummy variables to capture participation in a currency union. This can be written as

$$\log(T_{ijt}) = \alpha_j + \phi_t + \gamma_1 * EMU_IN_{jt} + \gamma_2 * EMU_OUT_{jt} + \gamma_3 * STERLING_{jt} + \gamma_4 * EU_{ijt} + \beta * Z_{ijt} + u_{ijt} \quad (1)$$

where T_{ijt} is the level of trade between Ireland and trade partner j in period t , α_j is a country dummy, ϕ_t is a time dummy, EMU_IN_{jt} takes the value 1 if trade partner j is also a member of EMU in period t for $t \geq 1999$ and 0 otherwise; EMU_OUT_{jt} takes the value 1 if trade partner j is not a member of EMU in period t for $t \geq 1999$ and 0 otherwise; $STERLING_{jt}$ takes the value 1 for the United Kingdom until 1978 and 0 otherwise; EU_{ijt} takes the value 1 if both Ireland and the trading partner are members of the European Union in period t and 0 otherwise; and Z_{ijt} represent time-varying bilateral factors that influence trade volumes (in particular, the log levels of GDP and GDP per capita). The EMU_OUT_{jt} variable is included to allow for the possibility that EMU boosts trade with all partner countries, for the reasons outlined in Baldwin (2006). The inclusion of country dummies means that the focus is only on the within-country variation in trade – differences in the level of trade across partner countries is not explored. Similarly, the inclusion of year dummies means that we strip out the impact of global factors that may affect the general level of trade with all partner countries, such as shifts in global trading costs.

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8 Since trade volumes, GDP and GDP per capita are non-stationary but cointegrated
9 variables, dynamic ordinary least squares (DOLS) is an appropriate estimation framework.²
10 This estimator includes leads and lags of the first differences of non-stationary regressors in
11 order to correct for the impact of serial correlation in the residuals. In view of the limited
12 time horizon, we implement a DOLS(-1,1) specification.
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21 Table 1 reports our baseline specification. The estimates show that EMU is not directly
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40 a significantly negative time-series association with the level of total GDP. The correct
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36 Kingdom, rather than 'step' changes associated with EU membership in 1973 and the
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50 Conclusions

51 We have investigated the impact of currency unions on Irish trade patterns. In contrast to
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14 trade – it will important to re-visit this study in a few years. Finally, in relation to the Sterling
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16 currency union, we have emphasized that the apparent significance of the Sterling link on
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18 trade is misleading – rather, Irish trade with the United Kingdom has shown a negative trend
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20 over many years.
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For Peer Review

Table 1. Baseline Specification

Dynamic OLS Fixed Effects Estimates, 1950 – 2004

	Trade	Imports	Exports
EMU – In	-0.189 (1.046)	-0.054 (1.060)	-0.135 (0.644)
EMU – Out	0.409 (1.047)	0.405 (1.062)	0.004 (0.645)
Sterling	2.428*** (0.422)	0.403 (0.428)	2.024*** (0.260)
EU	.072 (0.179)	0.023 (0.182)	0.049 (0.110)
Log of GDP	-3.853*** (0.902)	-2.967*** (0.915)	-0.887 (0.556)
Log of GDP per capita	6.697*** (0.860)	4.439*** (0.872)	2.258*** (0.530)
F – test (<i>p</i> – value)	443.20 (0.000)	201.45 (0.000)	328.63 (0.000)
R ²	0.972	0.940	0.962
Adj R ²	0.970	0.935	0.959
Root MSE	0.767	0.471	0.542

Notes: ***, **, * indicates significance at 1, 5, 10 per cent levels.

Standard errors given in parentheses.

Number of observations is 1040. All specifications include time and country dummies.

Arellano-Bond test for AR(1) residuals: H₀ rejected in all specifications.

Table 2. Alternative Specification

Dynamic OLS Fixed Effects Estimates, 1950 – 2004			
	Trade	Imports	Exports
EMU – In	-0.209 (0.999)	-0.060 (1.048)	-0.149 (0.606)
EMU – Out	0.509 (1.002)	0.426 (1.050)	0.083 (0.608)
Sterling	0.218 (0.777)	0.069 (0.816)	0.149 (0.472)
EU	0.094 (0.173)	0.016 (0.182)	0.079 (0.105)
UK*EU	-0.328 (0.766)	0.260 (0.804)	-0.588 (0.465)
UK*Trend	-0.079** (0.031)	-0.021 (0.032)	-0.057*** (0.019)
Log of GDP	-4.304*** (0.873)	-3.057*** (0.916)	-1.247** (0.530)
Log of GDP per capita	6.958*** (0.827)	4.505*** (0.867)	2.453*** (0.502)
F – test (<i>p</i> – value)	446.68 (0.000)	197.07 (0.000)	335.40 (0.000)
R ²	0.972	0.940	0.964
Adj R ²	0.971	0.935	0.961
Root MSE	0.755	0.471	0.530

Notes: ***, **, * indicates significance at 1, 5, 10 per cent levels.

Standard errors given in parentheses.

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Figure 1a. Ireland: Export Shares, 1950-2004

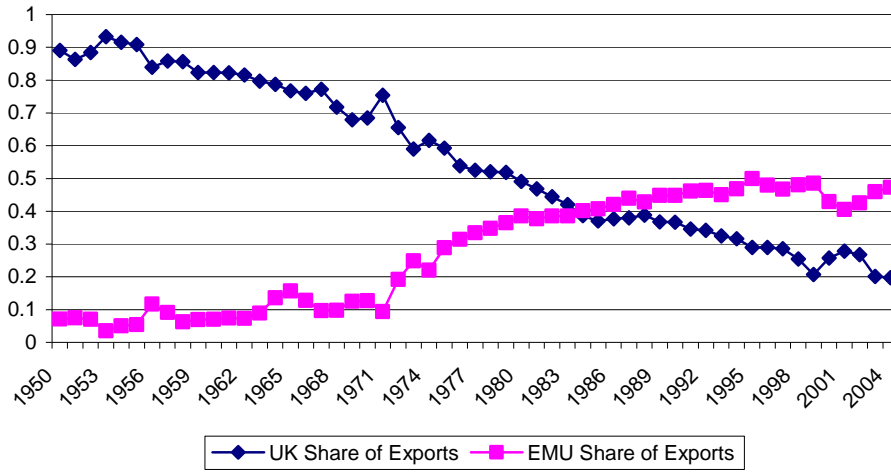
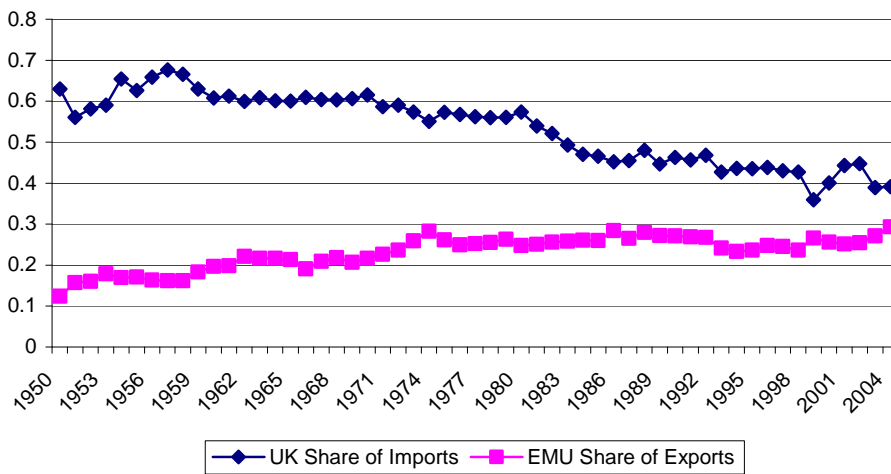


Figure 1b. Ireland: Import Shares, 1950-2004



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The 'EMU and trade' literature has recognized that differences in the structural characteristics and initial positions of the individual member countries mean that the impact of EMU is unlikely to be uniform across these countries. For this reason, it is useful to consider studies of individual member countries. In this regard, Ireland is a particularly interesting case, since EMU is not its first experience with currency union – until 1979, it was in a long-standing currency union with the United Kingdom. Accordingly, our goal in this paper is investigate the impact of these two currency unions on Irish trade.

Our paper relates to several recent contributions. The time series evidence on the relation between currency unions and trade has been most extensively explored by Glick and Rose (2002), who find a significant impact: for instance, leaving a currency union implies a decline in trade volume of about 50 percent. In relation to Ireland, Thom and Walsh (2002)

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Our baseline empirical specification postulates a long-run relation between the volume of trade and a set of core regressors, including dummy variables to capture participation in a currency union. This can be written as

$$T_{ijt} = \alpha_j + \phi_t + \gamma_1 * EMU_IN_{jt} + \gamma_2 * EMU_OUT_{jt} + \gamma_3 * STERLING_{jt} + \gamma_4 * EU_{ijt} + \beta * Z_{ijt} + u_{ijt} \quad (1)$$

where T_{ijt} is the sum of the log of exports and the log of imports between Ireland and trade partner j in period t , α_j is a country dummy, ϕ_t is a time dummy, EMU_IN_{jt} takes the value 1 if trade partner j is also a member of EMU in period t for $t \geq 1999$ and 0 otherwise; EMU_OUT_{jt} takes the value 1 if trade partner j is not a member of EMU in period t for $t \geq 1999$ and 0 otherwise; $STERLING_{jt}$ takes the value 1 for the United Kingdom until 1978 and 0 otherwise; EU_{ijt} takes the value 1 if both Ireland and the trading partner are members of the European Union in period t and 0 otherwise (Ireland joined the European Community in 1973 at the same time as the United Kingdom and Denmark); and Z_{ijt} represent time-varying bilateral factors that influence trade volumes (in particular, the log levels of GDP and GDP per capita).²

The EMU_OUT_{jt} variable is included to allow for the possibility that EMU boosts trade with all partner countries, for the reasons outlined in Baldwin (2006). The inclusion of

² We follow Baldwin (2006) in measuring total trade as the sum of the log of exports and the log of imports, since this is theoretically appropriate in the context of a gravity framework. Trade data are deflated using export and import price deflators.

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33 **3. Results**

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50 ⁴ We note that the magnitudes of the coefficients on GDP and GDP per capita are larger than typically
51 found in gravity studies. One reason is that we are estimating a cointegration equation, where the
52 coefficient captures the permanent impact on trade of a permanent change in the regressors: this will
53 naturally be larger than the short-run impact. A second is that our fixed-effects specification means that
54 only the time-series dimension of the data are examined – the coefficients are much lower if the cross-
55 sectional variation is incorporated.
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26 **4. Conclusions**

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Table 1. Baseline Specification

Dynamic OLS Fixed Effects Estimates, 1950 – 2004

	Trade	Imports	Exports
EMU – In	-0.189 (1.046)	-0.054 (1.060)	-0.135 (0.644)
EMU – Out	0.409 (1.047)	0.405 (1.062)	0.004 (0.645)
Sterling	2.428*** (0.422)	0.403 (0.428)	2.024*** (0.260)
EU	.072 (0.179)	0.023 (0.182)	0.049 (0.110)
Log of GDP	-3.853*** (0.902)	-2.967*** (0.915)	-0.887 (0.556)
Log of GDP per capita	6.697*** (0.860)	4.439*** (0.872)	2.258*** (0.530)
F – test (<i>p</i> – value)	443.20 (0.000)	201.45 (0.000)	328.63 (0.000)
R ²	0.972	0.940	0.962
Adj R ²	0.970	0.935	0.959
Root MSE	0.767	0.471	0.542

Notes: ***, **, * indicates significance at 1, 5, 10 per cent levels.

Standard errors given in parentheses.

Number of observations is 1040. All specifications include time and country dummies.

Arellano-Bond test for AR(1) residuals: H₀ rejected in all specifications.

Table 2. Alternative Specification

Dynamic OLS Fixed Effects Estimates, 1950 – 2004			
	Trade	Imports	Exports
EMU – In	-0.209 (0.999)	-0.060 (1.048)	-0.149 (0.606)
EMU – Out	0.509 (1.002)	0.426 (1.050)	0.083 (0.608)
Sterling	0.218 (0.777)	0.069 (0.816)	0.149 (0.472)
EU	0.094 (0.173)	0.016 (0.182)	0.079 (0.105)
UK*EU	-0.328 (0.766)	0.260 (0.804)	-0.588 (0.465)
UK*Trend	-0.079** (0.031)	-0.021 (0.032)	-0.057*** (0.019)
Log of GDP	-4.304*** (0.873)	-3.057*** (0.916)	-1.247** (0.530)
Log of GDP per capita	6.958*** (0.827)	4.505*** (0.867)	2.453*** (0.502)
F – test (<i>p</i> – value)	446.68 (0.000)	197.07 (0.000)	335.40 (0.000)
R ²	0.972	0.940	0.964
Adj R ²	0.971	0.935	0.961
Root MSE	0.755	0.471	0.530

Notes: ***, **, * indicates significance at 1, 5, 10 per cent levels.

Standard errors given in parentheses.

Number of observations is 1040. All specifications include time and country dummies.

Arellano-Bond test for AR(1) residuals: H₀ rejected in all specifications.

Figure 1a. Ireland: Export Shares, 1950-2004

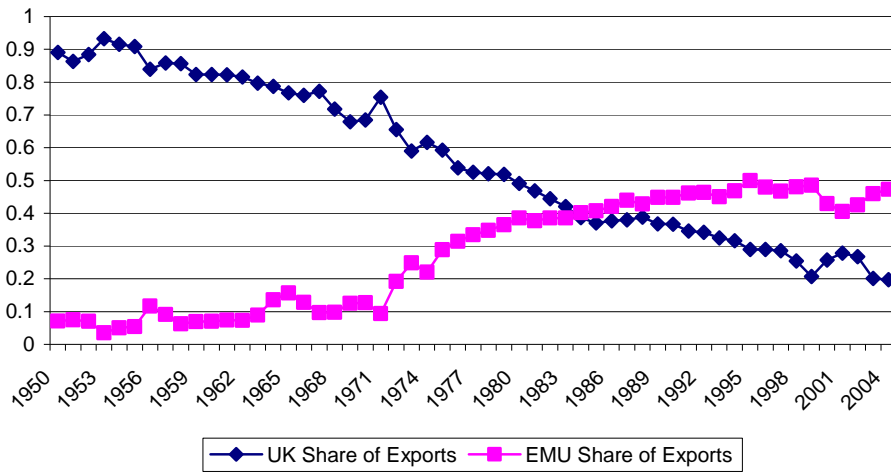


Figure 1b. Ireland: Import Shares, 1950-2004

