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**Two Islands – Two Monies:**

**The Effect of Breaking the Sterling Link on Anglo-Irish Trade\***

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**Abstract:** This paper studies the effect on Anglo-Irish trade of breaking the link between the Irish pound and sterling in 1979. A gravity model is used to explore this issue. No evidence is found of a structural break following the dismantling of the currency union. Nor did the resultant exchange rate volatility have a significant adverse effect on trade. These results do not support the belief that currency unions result in increased trade flows, either directly or by reducing exchange rate volatility.

**Key words:** Currency, trade flows, gravity model, exchange rate, volatility, Ireland, sterling.

**JEL Classification Number:** F33

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## 1. Introduction.

The effect of a currency union on trade patterns is an important issue that has gained topicality due to the recent launch of the euro zone. Advocates of the single European currency list an increase in trade due to the elimination of exchange rate uncertainty among its likely benefits. While it was acknowledged at the time of writing the 'Cecchini Report' (European Union, 1990) that these gains were not well-established empirically, it has recently been claimed that the existence of a currency union has a large positive effect - over and above that of removing exchange rate volatility - on trade between members (Rose, 1999).

The break-up of Europe's oldest currency union - that between the Irish pound and sterling - in 1979 offers the best available natural experiment for studying how a currency union affects trade. The present paper assesses the impact of the break-up of the Anglo-Irish currency union on trade between the two countries. Little or no adverse effect is found. This should dampen expectations that participating in the euro zone will have significant benefits in terms of increased trade.

The outline of the paper is as follows. The next section briefly describes the historical setting and the data used. The following section summarises some relevant previous research. In the fourth section the effect of breaking the sterling link on Anglo-Irish<sup>1</sup> trade are assessed

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<sup>1</sup> For convenience trade between the Republic of Ireland, on the one hand, and the United Kingdom of Great Britain and Northern Ireland, on the other, is referred to as 'Anglo-Irish trade'.

with the help of gravity model. The paper concludes with a short discussion of the implications of the findings.

## 2. Historical background

From 1826 to 1979 the Irish pound (IEP) was pegged one-to-one to the pound sterling (GBP). Following the Irish decision to join the exchange rate mechanism (ERM) of the European Monetary System in 1978, and the UK's decision to remain outside, the age-old link between the two currencies was broken in principle. By the end of March 1979 it proved impossible for Ireland to maintain parity with sterling while remaining in the ERM and the IEP/GBP exchange rate has been floating ever since. The wedge between the two currencies was reinforced by the Irish entry into EMU and adoption of the euro as legal tender in January 1999.

Ireland's trading environment was transformed from a protectionist regime in the 1930s to full integration into the European and world trading system in the 1990s. Liberalisation proceeded gradually.<sup>2</sup> It was not until 1965 that an Anglo-Irish Free Trade Area Agreement (AIFTAA) was signed, abolishing tariffs on Irish exports to the UK from 1966 and dismantling tariffs on British imports into Ireland over the period 1966-75. Both the trade-creating and trade-diverting effects of the AIFTAA would be expected to increase Anglo-Irish trade. Ireland joined the UK in applying for full membership of the EEC in 1961 but was not admitted until 1973. The provisions of the Single European Act were implemented

<sup>2</sup> For an account of the transition to free trade see Meenan, 1970, Chapter 3.

by 1993. These developments would be expected to divert trade from Britain to third countries. Finally, the exchange rate volatility *vis-à-vis* sterling introduced by joining the ERM in 1979 and the EMU in 1999 would also be expected to depress Anglo-Irish trade. The importance of this last effect is the focus of the present paper.

Data on the Ireland's (or Saorstát Éireann as it was known) merchandise trade by geographical region have been published continuously since 1924.<sup>3</sup> Figure 1 shows how the UK's share of Irish trade (exports *plus* imports) has declined over the years. From a level of about 70 percent after the Second World War, this share had fallen below 50 per cent before the sterling link was broken in 1979, and has subsequently declined to little over one quarter.

Many factors may be advanced to account for the long-run decline in the importance of the UK in Irish trade. These include the loosening of Ireland's social and cultural links with the UK following its departure from the United Kingdom. Helliwell (1996) has drawn attention to the very large *ceteris paribus* effect being part of a country has on regional trade patterns.

<sup>3</sup> Until 1936 trade flows were classified by 'country of consignment', thereafter by 'country of origin'. The earlier classification exaggerated the United Kingdom's share of imports due to the importance of transshipment through Britain and Northern Ireland from other countries. Since the completion of the Single European Market in 1993 greater reliance has had to be placed on sampling techniques to collect intra-EU trade data. Statistical offices attach a health warning to comparisons straddling this date. See the *Statistical Abstract of Ireland and Trade Statistics of Ireland*.

The relative underperformance of the UK economy throughout most of the post-war period would also have tended to depress Irish exports to Britain, while the decline of long distance transportation costs would have encouraged exports to other markets. Finally, declining tariffs with third countries, especially following Ireland's entry to the European Economic Community (EEC) in 1973, stimulated an inflow of FDI to Ireland and the use of Ireland as an export platform to Europe by US firms. Ireland is now a significant exporter of 'high tech' products worldwide.<sup>4</sup> The question addressed in the present paper is whether any inferences can be drawn about the effects of breaking the sterling link on the volume of Anglo-Irish trade.

### 3. Previous research

A great deal of research has been devoted to the impact of exchange rate volatility on trade flows (Dell'Ariccia, 1998) but the question how currency unions affect trade has received less attention.<sup>5</sup> Rose (1999) focuses explicitly on the second issue, which he explores using a gravity model estimated on a panel of 186 countries and five observations over the period 1970-1990. In addition to the usual gravity variables he adds a measure of exchange rate

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<sup>4</sup> The value of the exports of the Irish subsidiaries of MNCs, and of GDP, is inflated by 'transfer pricing' to avail of Ireland's low corporation tax rate. Since these companies export mainly to Europe and further afield, this consideration tends to reduce the UK's share in Irish exports. The importance of these companies in the Irish economy increased in the 1990s.

<sup>5</sup> There is, of course, overlap between the two topics since by definition exchange rate volatility is zero between countries participating in a currency union.

volatility and an intercept-shift dummy variable for a common currency. He reports that 'two countries that share the same currency trade three times as much as they would with different currencies'. He estimates that the effect of membership of a currency union on trade flows 'is over an order of magnitude larger than the impact of reducing exchange rate volatility'.

In Ireland the likely effects of breaking the sterling link were debated before the decision to join the ERM was taken in 1978. Those in favour of Ireland joining the ERM and later adopting the euro argued that the gains from reducing exchange rate volatility *vis-à-vis* the continental currencies would outweigh any losses due to the introduction of volatility *vis-à-vis* sterling, those opposed took the opposite view (Economic and Social Research Institute, 1996; Neary and Thom, 1997). No empirical evidence on the effects of exchange rate volatility on Irish trade was available at the time.

Ireland has however been included in previous studies of trade patterns. Fitzsimons, Hogan, and Neary (1999) used a gravity model to assess whether the volume of 'North-South' trade (that is between Northern Ireland and the Republic of Ireland) was exceptionally low, as had been claimed by some commentators. Their data set comprised a pooled sample of bilateral trade in manufactured goods between 28 industrialised countries for the years 1970-92. In addition to the classical gravity variables (income, population, and distance) their estimated model included variables to control for the existence of a common border, the use of a common language, and membership of the European Union.<sup>6</sup> The effects of exchange rate volatility and currency unions were not explored. For the last 14 of the 23 years in this sample the IEP/GBP rate was floating. If breaking the sterling link had an adverse effect on

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<sup>6</sup> They did not allow for any possible effect of the AIFTAA.

trade it would have reduced North-South trade below the level predicted by the gravity model.<sup>7</sup> While the authors did not explicitly address this issue, they concluded that North-South trade was *higher* than predicted by the gravity model. This is *prima facie* evidence that breaking the currency union did not have an adverse effect on one component of Anglo-Irish trade.

Rose (1999) included Ireland in his study and emphasised its importance as an example of how currency unions have major effects on trade. However, the Irish data used in his study are unreliable.<sup>8</sup> Thus no definitive study is yet available of the impact of the change in Ireland's exchange rate regime.

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<sup>7</sup> The break in the sterling link resulted in the use of two monies on the island of Ireland – the Irish pound in the Republic and sterling in the North.

<sup>8</sup> He states: 'The Irish data tell an interesting story. Ireland left its long 1:1 parity with the British pound in 1979 to join the European Monetary System. *Its bilateral trade with the UK fell by fifty percent from 1980 to 1985 and had not attained even its 1975 level before the end of the sample in 1990.* This decline occurred despite large increases in both real GDP and real GDP per capita that would ordinarily lead to a substantial increase in trade.' [p. 20, italics added]. In fact the volume of bilateral trade fell by only 7.0 per cent between the peak of 1979 and the trough of 1982 and the 1979 peak was surpassed in 1984 (see Figure 2). It is not clear why Rose's data, taken from the *World Trade Database*, so seriously exaggerate the slump in Anglo-Irish trade in the early 1980s.

#### 4. A Gravity Model

Figure 2 displays the volume of Anglo-Irish trade over the period 1950-98. Despite the downward trend in the UK's share of Irish trade revealed in Figure 1, the volume of trade between the two countries has grown strongly over the long run. The key question is whether the break in the currency peg significantly affected this trend. It is not evident from the graph that it did: while there was a brief pause in growth during the early 1980s trade has now reached almost three times its pre-sterling-break level.

An obvious approach to estimating how the break in the sterling link affected Anglo-Irish trade is to use a gravity model to predict what the flows might have been if the link had been maintained. The gravity model is highly regarded in the empirical trade literature and can be rationalised on theoretical grounds (Anderson, 1979). It predicts that the volume of trade between two countries will be positively related to the product of their incomes and populations and inversely to the distance between them. Other factors such as language, land frontiers, and so on, can be added as appropriate. In the present study interest centres on the variation over time in the volume of trade between Ireland and the UK. Distance and language do not account for any of this variation, while the role of population is likely to be less important than it would in a study involving bilateral trade between several countries.

A strategic research issue relates to whether the Anglo-Irish experience should be explored on its own or as part of a model estimated on a larger data set. While studying a single case lacks generality it allows the use of a longer time series than is available in pooled data sets and avoids the maintained hypothesis that the effects of all currency unions are identical and can

be captured by a single intercept-shift dummy variable.<sup>9</sup> A further advantage to studying the Irish case is that the break in the sterling link in 1979 was an exogenous event, driven by Irish and British political agenda, whereas other changes in exchange rate pegs were at least in part *ex post* recognition of changes in trade patterns.<sup>10</sup> These considerations favour the use of the available long time series on Anglo-Irish trade to explore the specific effects of the change in the IEP/GBP exchange rate regime rather than relying on shorter time series to estimate an average effect over a very heterogeneous group of countries.

Many different formulations of the gravity model have been estimated empirically and there is little to choose between them. The basic equation estimated here uses the sum of the volume of imports and exports as the dependent variable and the products of real incomes per person and of the populations as regressors. All variables are in logarithms:

$$\ln [(X/P_x)_{ij} + (M/P_m)_{ji}]_t = \alpha_0 + \alpha_1 \ln [(Y/Pop)_i (Y/Pop)_j]_t + \alpha_2 \ln (Pop_i Pop_j)_t + \varepsilon_{ijt} \quad (1)$$

where  $i$  and  $j$  denote Ireland and the UK,  $t$  runs from 1950 to 1998, and

<sup>9</sup> Rose includes in his sample of currency unions some colonies/dependencies/territories that are miniscule by comparison even with Ireland. Examples are the Vatican City and the Falkland Islands, not to mention the Wallis and Futuna Islands, the Northern Mariana Islands, Palau, Nauru, Tokelau, Tuvalu, and Mayotte.

<sup>10</sup> Examples are former British dependencies such as Bermuda and the British Virgin Islands, that now peg their currencies to the US\$.

$X_{ij}$  = the volume of exports from country  $i$  to country  $j$ ;

$M_{ji}$  = the volume of imports from country  $j$  to country  $i$ ;

$P_x$  = export price deflator

$P_m$  = import price deflator

$Y_i$  = country  $i$ 's real GDP

$Pop_i$  = country  $i$ 's population and

$\varepsilon_{ijt}$  = a stochastic error term.

A variable ( $VOL$ ) was added to test for the influence of the volatility in the IEP/GBP rate introduced when the sterling link was broken. ( $VOL$  = s.d.  $\Delta \ln e_t$ , that is the standard deviation over a year of the percentage change in the monthly IEP/GBP exchange rate.) Volatility was of course zero up to 1979 and subsequently varied considerably (see Figure 3).<sup>11</sup> It fell to a minimum in the mid-1990s when the widened ERM margins of fluctuation allowed the IEP to track the GBP closely, but rose again as the deadline for the launch of the euro approached and the IEP began to track the DM more closely.

Table 1 displays the results of estimating this model over the period 1950-98.<sup>12</sup> Tests are included for the stability of the relationship before and after the break in the sterling link.

<sup>11</sup> The correlation between  $VOL$  and  $SL$  is  $-0.86$  over the whole sample period.

<sup>12</sup> Although Anglo-Irish trade data are available since the 1920s, the regression analysis has been confined to the post-war years for which reliable income estimates are available. The income series used are real income per capita in PPP \$ from the Penn World Tables 1950 to 1992, updated to 1998 from national statistical sources. Population data are from national sources.



Intercept-shift dummies for AIFTA and EEC membership are included in the full sample and the 1950-78 sub-sample, but not in the 1979-98 sub-sample because they assume a value of 1 over all these years.<sup>13</sup> The model fits the data very closely. The diagnostics are satisfactory, although there is some evidence of autocorrelation in the residuals of some of the equations. This is addressed by estimating an error correction model, below.

Turning first to the results obtained from the simple gravity model, the income variable is consistently significant at a very high level and its coefficient stable. The population variable is generally significant, although its coefficient is less well-determined. It is reassuring to note that the estimated per capita income elasticity is very close unity, which has been found in many other studies. When included, the *AIFTA* and *EEC* variables have the expected signs, and the former is generally significant at the 5%, the latter at the 10% level.

The effect of breaking the sterling link on the volume of bilateral trade is tested first by comparing the coefficients of the corresponding variables in equation (1) for 1950-98 and equation (4) for 1950-78. These are virtually identical. A second test consists of including an intercept-shift dummy in the equation for the whole period (equation 2). Its coefficient is close to zero and it is not statistically significant. Finally a comparison of the coefficients of equation (5) for 1950-78 and equation (6) for 1979-98 reveals no difference in the coefficient on income, although that on population is unstable. There is some suggestion that the

<sup>13</sup> To allow for the fact that tariffs on imports were dismantled gradually over a ten-year period, different variants of this dummy were used without any material impact on the findings.

population variable was less of an influence on trade after 1979, but the dominant influence of income remained stable.

Formal tests of a structural break in the model after 1978 are reported for equations (4) and (5), based on the Chow test for a structural break (for equation (5) which can be estimated for both sub-periods) and Chow's second test for the predictive failure of the post-1978 forecasts derived from equations (5) and (6). These tests conclusively reject the hypothesis of a structural break in 1979. The decline and recovery of Anglo-Irish trade in the early 1980s was caused by cyclical factors and not attributable to the change of exchange rate regime.

Even if the break-up of the currency union of itself had no effect on trade the IEP/GBP exchange rate volatility it introduced could have lowered the volume of Anglo-Irish trade. To test this hypothesis *VOL* has been added to equations (3) and (7). The negative coefficient of (lagged) *VOL* falls short of the 5% significance level in equation (7) and the 10% level in equation (3). This estimate implies an elasticity of trade with respect to *VOL* of only -0.01 (at its mean value). Eliminating volatility completely in 1992, for example, would have led to an increase of about 0.5% in the volume of trade. This is considerably lower than the estimate provided by (Dell'Ariccia, 1998).

Some attention should be paid to econometric issues that are often neglected in gravity models. The key variables – trade, income, and population – are all non-stationary or  $I(1)$ , while there is evidence of autocorrelation in some of the equations. There is therefore a risk that the high  $R^2$  and other statistics reported in Table 1 are spurious. An error correction model (ECM) was estimated to deal with this problem. The residuals of a regression of



income and population on trade were found to be  $I(0)$ , indicating that at least one cointegrating relationship exists between these variables. The only relationship theoretically supported is the gravity model. The ECM reported in Table 2 was therefore estimated. The results are satisfactory and reinforce the validity of those reported in Table 1. The short-run dynamics highlight the role of variations in income in the adjustment process. Neither  $VOL$  nor  $SL$  is significant. Tests reject the hypothesis of a structural break around 1978. Thus moving from the simple gravity model to the ECM increases confidence in the finding that the break in the exchange rate peg had little or no effect on the volume of Anglo-Irish trade.

## 5. Conclusion

This paper exploits the opportunity offered by the Irish decision to join the European Monetary System in 1979 to study the effects of the break-up of a currency union on trade. The findings are negative in the sense that there is no evidence to support the belief that the currency union of itself increased, or its break-up reduced, the volume of trade between Ireland and the UK. No structural break was found in a gravity model of Anglo-Irish trade after the change in the currency regime. The decline in trade in the early 1980s is fully accounted for by the severity of the recession. Trade recovered as economic growth resumed. The volatility introduced by floating the exchange rate may have led to a very slight reduction in trade, but even this effect is not statistically significant.

The absence of adverse repercussions from dismantling the long-standing currency union between the Irish pound and sterling may have wider implications. The findings increase scepticism regarding the likelihood that there will be significant trade-creating effects as a result of adopting the euro.

Table 1  
*Gravity model of Anglo-Irish trade, 1950-98*  
(t-ratios in parentheses)

| Dependent variable: $\ln [(X/P)_{ij} + (M/P_m)_{ij}]_t$                        |                |                |                |                |                 |                |                |
|--|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|
| Sample period:   | 1950-98        |                | 1950-78        |                | 1979-98         |                |                |
| Equation no:   | (1)            | (2)            | (3)            | (4)            | (5)             | (6)            | (7)            |
| Intercept  | -20.0<br>(4.0) | -21.8<br>(2.6) | -23.7<br>(3.8) | -29.1<br>(2.8) | -16.8<br>(2.6)  | -7.1<br>(0.5)  | -1.7<br>(0.1)  |
| $\ln [(Y/Pop)_i, (Y/Pop)_j]_t$   | 0.88<br>(20.4) | 0.87<br>(17.5) | 0.87<br>(17.7) | 0.83<br>(13.1) | 0.93<br>(15.1)  | 1.04<br>(12.8) | 0.97<br>(11.7) |
| $\ln (Pop/Pop)_t$  | 0.69<br>(2.3)  | 0.80<br>(1.6)  | 0.90<br>(2.4)  | 1.23<br>(2.1)  | 0.48<br>(1.2)   | -0.88<br>(1.1) | -0.35<br>(0.5) |
| <i>AIFTA</i>   | 0.06<br>(2.6)  | 0.06<br>(2.1)  | 0.06<br>(2.5)  | 0.05<br>(1.3)  |                 |                |                |
| <i>EEC</i>   | -0.06<br>(1.7) | -0.07<br>(1.6) | -0.07<br>(2.0) | -0.10<br>(1.8) |                 |                |                |
| <i>SL</i>  |                | 0.01<br>(0.3)  |                |                |                 |                |                |
| $VOL_{t-1}$  |                |                | -1.84<br>(1.7) |                |                 |                | -2.22<br>(1.9) |
| $\bar{R}^2$  | 0.997          | 0.997          | 0.997          | 0.990          | 0.988           | 0.986          | 0.988          |
| D.W.   | 1.4            | 1.43           | 1.33           | 1.87           | 1.27            | 1.06           | 1.15           |
| Chow test for stability of regression coefficients<br>$\chi^2(3), [P(\chi^2)]$ |                |                |                |                | 2.54<br>[0.47]  |                |                |
| LM predictive failure test<br>$\chi^2(20), [P(\chi^2)]$                        |                |                |                | 16.7<br>[0.67] | 11.96<br>[0.92] |                |                |

Table 2  
ECM of Anglo-Irish trade, 1950-98  
(t-ratios in parentheses)

| Sample period:   | Dependent variable: $\Delta \ln [(X/P_{\$/\text{£}})_t + (M/P_{\$/\text{£}})_t]$ |                |                |                |                |
|--|--|----------------|----------------|----------------|----------------|
|  | 1950-98  | 1950-78        | 1950-78        | 1950-78        | 1979-98        |
| Equation no:   | (1)  | (2)            | (3)            | (4)            | (5)            |
| Intercept  | -14.5<br>(1.7)   | -7.22<br>(0.9) | -22.1<br>(1.7) | 5.6<br>(0.6)   | 0.82<br>(0.1)  |
| $\Delta \ln [(Y/P_{\$/\text{£}})_t, (Y/P_{\$/\text{£}})_t]$                    | 0.87<br>(5.0)  | 0.97<br>(3.8)  | 0.96<br>(3.9)  | 1.11<br>(5.2)  | 0.96<br>(3.8)  |
| $\Delta \ln (Pop_t Pop_t)$   | 2.80<br>(1.7)  | -0.45<br>(0.1) | 2.04<br>(0.6)  | 4.27<br>(2.6)  | 3.50<br>(2.0)  |
| $\ln [(X/P_{\$/\text{£}})_t + (M/P_{\$/\text{£}})_t]_{t-1}$                    | -0.80<br>(5.4)   | -0.67<br>(3.2) | -0.89<br>(4.1) | -0.86<br>(4.0) | -0.83<br>(3.8) |
| $\ln [(Y/P_{\$/\text{£}})_t, (Y/P_{\$/\text{£}})_t]_{t-1}$                     | 0.70<br>(5.3)  | 0.68<br>(3.6)  | 0.75<br>(4.1)  | 0.89<br>(4.2)  | 0.82<br>(3.8)  |
| $\ln (Pop_t Pop_t)_{t-1}$  | 0.49<br>(1.0)  | 0.06<br>(0.1)  | 0.88<br>(1.2)  | -0.73<br>(1.3) | -0.43<br>(0.7) |
| $VOL_{t-1}$  | -2.38<br>(1.9)   |                |                |                | -1.28<br>(1.2) |
| $AIFTA$  | 0.05<br>(1.8)  |                | 0.05<br>(1.2)  |                |                |
| $EEC$  | -0.05<br>(1.3)   |                | -0.07<br>(1.3) |                |                |
| $SL$   | -0.07<br>(1.4)   |                |                |                |                |
| $\bar{R}^2$  | 0.58   | 0.40           | 0.47           | 0.77           | 0.77           |
| D.W.   | 1.7  | 1.6            | 1.8            | 2.5            | 2.4            |
| Chow test for stability of regression coefficients<br>$\chi^2(6), [P(\chi^2)]$ |  | 4.25<br>[0.64] |                |                |                |
| LM predictive failure test<br>$\chi^2(20), [P(\chi^2)]$                        |  |                | 10.4<br>[0.96] |                |                |

Figure 1: UK's share of Irish trade, 1924-98

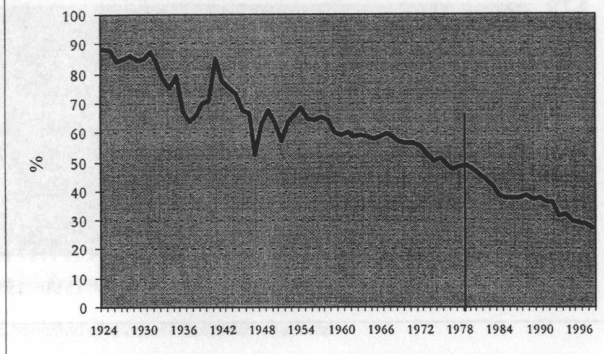
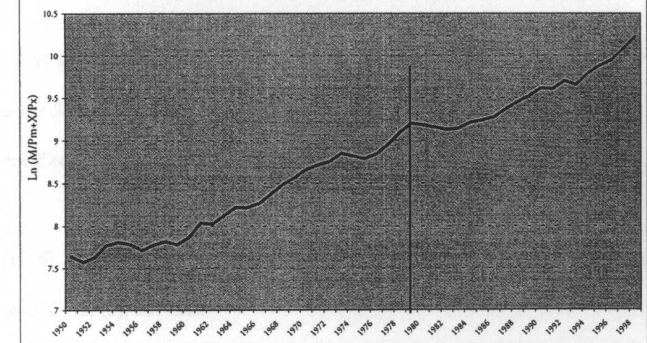
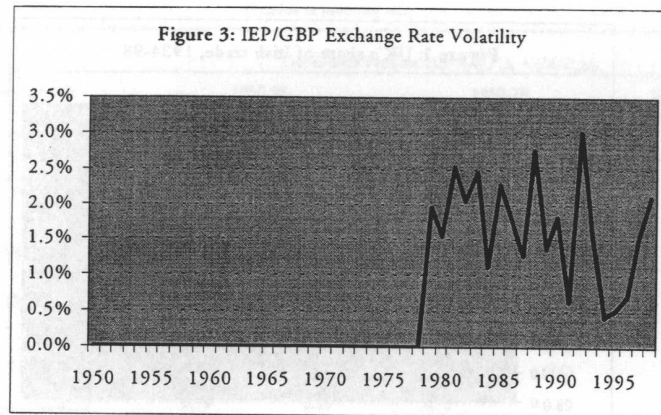


Figure 2: The volume of Anglo-Irish trade, 1950-98





### References

- Anderson, J. E. (1979). 'A theoretical foundation for the gravity equation', *American Economic Review*, 69, 106-116.
- Dell'Ariccia, G. (1998). 'Exchange rate fluctuations and trade flows: Evidence from the European Union', IMF Working Paper WP/98/107.
- Economic and Social Research Institute (1996). *Economic Implications for Ireland of EMU*, Dublin, Economic and Social Research Institute.
- European Union (1990). 'One Market, One Money', *European Economy*, 44 (October).
- Fitzsimons, E., V. Hogan, and J. P. Neary (1999). 'A Gravity Model of North-South Trade', *Economic and Social Review* (forthcoming). Draft version: University College, Dublin, Centre for Economic Research, Working Paper, WP/99/14.
- Helliwell, J. F. (1996). 'Do National Boundaries Matter for Quebec's Trade?' *Canadian Journal of Economics* XXIX (3), 507-522.
- Meenan, J. (1970). *The Irish Economy since 1922*, Liverpool University Press.
- Neary, J. P and D. R. Thom (1997). 'Punts, pounds, and euros: In search of an optimum currency area', *IBAR: Journal of Irish Business and Administrative Research* 18, 211-225.



Rose, A. K. (1999). 'One Money, One Market: Estimating the Effect of Common Currencies on Trade', National Bureau of Economic Research Working Paper 7432, forthcoming in *Economic Policy*.

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