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The Effects of the Widening of the ERM Bands on The Irish Pound

by

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The effects of the widening of the ERM bands on the Irish pound

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Abstract: This paper examines the behaviour of Irish exchange rates and interest rates over two periods, one immediately before, the other immediately after, the widening of the narrow band of the Exchange Rate Mechanism of the European Monetary System in August 1993. It is shown that a benefit of the dismantling of the narrow band was that the Irish pound did not come under speculative pressure as sterling weakened late in 1994 and it was possible to check the currency's appreciation relative to sterling by a depreciation relative to the DM. Moreover, the influence of the sterling exchange rate on Irish interest rates appears to have been substantially reduced under the new regime.

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Introduction

The crisis that developed on European foreign exchange markets in the course of 1992 was eventually resolved by the widening of the Exchange Rate Mechanism (ERM) narrow band from 2% to 15% in August 1993. Ireland had been a member of the narrow band of the ERM since its launch in 1979 and, although the Irish pound (Ir£) was realigned in 1983 and 1986 in response to the weakness of sterling outside the ERM, over the period 1987-92 a policy was pursued of holding the Ir£ within 1% of its central rate of Ir£1=DM2.67 and ruling out a realignment of this rate. It was hoped that by making the Irish pound comparable to the franc fort anti-inflationary credibility would be gained and the costs of disinflation reduced. The approach taken by the Irish authorities was facilitated by the entry of sterling into the ERM in October 1990, but that currency's precipitate departure in September 1992 and subsequent 15% depreciation created a major crisis on Irish financial markets. The Irish authorities resisted a realignment in the belief that a devaluation would dissipate the gains that had been made over the period 1986-92 and risk imposing a long-lasting risk premium on Irish interest rates. During the last quarter of 1992 the Central Bank of Ireland intervened on foreign exchange markets and imposed penal short-term interest rates in Irish money markets to defend the pound, but Irish costs, and the level of wages in particular, showed little signs of the flexibility that would have been required to make the sudden appreciation sustainable. There was growing anxiety about the effects of the authorities' exchange rate policy on output and employment. Moreover, the resources that the Central Bank of Ireland had available to defend the exchange rate were limited and there was considerable disappointment in official circles at the apparent lack of support from continental central banks. By the end of January 1993 it was clear to all that the situation was unsustainable and the Irish government obtained permission for a 10% devaluation in the ERM. Contrary to the fears that had been expressed by those who opposed a realignment, Irish interest rates subsided quickly during the rest of 1993 and two years later there is little evidence that the devaluation led to higher inflation.

With the widening of the ERM bands in August 1993, the peg between the Ir£ and the DM lost much of its relevance because the lower intervention limit in the region of Ir£1=DM2.10 was outside the range in which the pound was likely to trade for the foreseeable future. The sharp depreciation of sterling relative to the DM in the first weeks of 1995 provides an opportunity to study how the Ir£ behaved in this new environment. A comparison of this episode with the 1992-93 currency crisis provides insights into how the markets adjusted to the change from participation in the narrow band of the ERM to virtually free floating. Although the experience of post-narrow-band regime is still limited to only a year and half, we shall see that it is none the less possible to draw some conclusions from the behaviour of markets since the relaxation of the ERM band. These conclusions have implications for the prospects of Ireland's participation in Stage III of the EMU.

Two Episodes of Sterling Weakness Compared

As long as the Irish authorities were committed to pegging the Ir£/DM exchange rate, a depreciation of sterling led to a rise in the value of the Ir£ relative to sterling. As a consequence, over the period 1979-92 the Ir£ was quite volatile relative to sterling, and the DM/Ir£ exchange rate movement independently of the DM/Stg£ rate. In particular, there was a long delay before the depreciation of sterling in September 1992 was matched by a fall in the DM value of the Ir£. As a consequence the Ir£ rose from Stg£0.9101 in May 1992 to an average value of Stg£1.0755 between October 1992 and
January 1993. Since the widening of the ERM band, the Ir£ and sterling DM exchange rates have tended to move much more closely together, leading to relative stability in the Ir£/sterling rate. The following graphs show how the Ir£ and sterling have moved relative to the DM (and, by implication, relative to one another) during the months before and after the change in the ERM band:

**DM Exchange rates**

![Graph showing DM exchange rates before and after August 1993](image)

The combination of a peg in terms of the DM and a sharp appreciation relative to Stg£ led to a rise in the Ir£ effective exchange rate index (EERI) during 1992. Over the first half of the year the EERI averaged 67.8, compared with an average of 72.3 over the period October 1992-January 1993. Since August 1993, however, the EERI has remained very stable, with a depreciation relative to the DM and its satellite currencies offsetting an appreciation relative to sterling (and the US$). Once again, the contrast between the two periods is clear from a pair of graphs:

**Effective exchange rate index of Ir£**

![Graph showing Ir£ effective exchange rate index before and after August 1993](image)
Finally, and of greatest significance, is the contrast between the behaviour of short-term interest rates during periods of sterling weakness when the Ir£ was in the narrow band and after August 1993 when this band was no longer operative. When Ireland was participating in the narrow-band ERM sterling weakness inevitably led to expectations of a realignment of the Ir£. As a consequence the interest rate differential between Dublin and Frankfurt widened. When, as in 1986, the Irish authorities devalued promptly, the spike in interest rates was short-lived and of little consequence. Over the period September 1992-January 1993, however, the authorities decided on a trial of strength and resisted devaluation in the belief that only thus could the hoped-for credibility bonus of participation in the ERM be reaped. The result was a prolonged period of financial uncertainty during which the economy was burdened with high interest rates and an overvalued exchange rate, and the Central Bank’s reserves were depleted through intervention to support the Ir£ on the foreign exchanges.\(^2\) In contrast, the period of sterling weakness after the widening of the ERM band was characterised by comparative tranquillity on financial markets and only a small rise in interest rates, as may be seen from the following pair of graphs.

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\(^2\)The costs of the delay in devaluing are set out in Honohan (1994).
the new flexibility of exchange rate policy spared the economy the trauma that would have followed from trying to support a misaligned exchange rate in the narrow band of the ERM.

**Exchange Rate Expectations**

The developments described in the previous section, suggest that following the dismantling of the narrow band, markets did not regard the Ir£ as pegged to the DM. Light can be shed on this issue whether by studying the behaviour of interest rates. Previous research has shown that over the period from Ireland's entry into the ERM in 1979 to the 1993 devaluation, interest rates came progressively more under the influence of German rates and the influence of British rates declined. However, this convergence on German interest rates was conditional on the Ir£ remaining at what markets regarded as a sustainable level relative to sterling. The widening of the Irish-German interest rate differential during the period September 1992 to January 1993 was only the most dramatic example of a consistent tendency for Irish interest rates to rise as sterling depreciated relative to the DM, to which the Ir£ was pegged in the narrow band. To demonstrate the influence of the sterling exchange rate on Irish interest rates, Walsh (1993) estimated the following error correction model:

\[ \Delta i = \alpha_0 + \alpha_1 \Delta dm + \alpha_2 \Delta tge + \alpha_3 \Delta c + \alpha_4 \Delta i_{t-1} + \alpha_5 \Delta dm_{t-1} + \alpha_6 \Delta tge_{t-1} + \epsilon \]

where \( \Delta \) represents short-term (three-month) interest rates in Ireland, Germany (dm) and Britain (tge), respectively, and \( \epsilon \) represents the (real) Ir£/Stg£ exchange rate. Highly significant estimates of \( \alpha_1 \) and \( \alpha_2 \) were obtained for the period mid-1986 to mid-1992 and for various sub-periods. The narrowing of the Irish-German interest rate differential was thus shown to be contingent on the level of the Ir£ relative to sterling and not an automatic benefit of success in maintaining its level in the narrow band of the ERM.

At the time of writing, only nineteen months have elapsed since the break-up of the narrow band ERM, which is hardly sufficient for any elaborate econometric exploration of the behaviour of Irish interest rates under the new regime. None the less, some interesting, although necessarily tentative, results can be reported on the basis of the behaviour of the Irish interest rates after August 1993. Table 1 displays the results of re-estimating the error correction model with monthly data for the period August 1993 through February 1995. For comparative purposes, the results for the period August 1986 through August 1992 are also given. It may be seen that model yields a reasonable fit to the data for the post-ERM period. However, in view of the brief period studied it is surprising that none of the short-run coefficients, \( \alpha_1, \alpha_2 \) and \( \alpha_3 \), is significant, while the estimates of the long-run parameters \( \alpha_0, \alpha_4 \) and \( \alpha_5 \) are generally well-determined. Equation (2) shows clear evidence of multicollinearity - a high \( R^2 \) with mostly insignificant t-ratios.

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3Since the loosening of the ERM band some market commentators have noted, not without frustration, that the Central Bank of Ireland does not appear to be intervening or targeting any particular level for the Ir£ relative to either sterling or the DM.

4See Walsh (1993), Honohan and Cowan (1994), Tovey (1994).

5The variables included were all I(1) and the null hypothesis of no cointegrating vector between them was rejected.
Equation (3) shows that when the sterling exchange rate variables are dropped there is little loss of explanatory power and the "long-run" coefficients on the British and German interest rate variables are better-determined. This result suggests that since the widening of the ERM band Irish interest rates have ceased to be influenced by the level of the Ir£ relative to sterling. This is in marked contrast to the situation that prevailed during the period when the Ir£ was pegged to the DM, when the sterling exchange rate exercised a very significant influence on Irish interest rates. It is striking, however, that the relative importance of German rates was similar before and after the change in the regime. Despite the break-up of the narrow band, Irish interest rates appear to have remained more sensitive to movements in German than in British interest rates.

The fact that all the short-run coefficients are insignificant in equation (3) prompts an examination of the results regressing the level of Irish interest rates on German and British rates and the sterling exchange rate. The results are shown in Table 2, with the results for the 1986-92 period shown for comparison. It may be seen that for the period after August 1993 a reasonable account of the Irish interest rate is given by the German and British rates. The inclusion of the sterling exchange rate adds nothing to the equation. Clearly the same cannot be said for the earlier period when without the exchange rate the results obtained are meaningless and even when it is included the equation still displays extremely significant non-randomness in the residuals. These results are consistent with those reported in Table 1.

Finally, it is possible to explore the topic by looking directly at the behaviour of the Irish-German and Irish-British interest rate differentials. This approach is similar to that taken in Table 2 except that the coefficient of the foreign interest rate variable is constrained to unity. Table 1 shows the results of regressing the Irish-German three-month interest rate differential on the log of the Ir£/Sterling exchange rate and a time trend. A comparison is made between the periods from January 1992 to July 1993 and from August 1993 to February 1995. For the earlier period the influence of the sterling exchange rate is well-determined and not affected by the inclusion of a trend. For this crisis period the estimated coefficient of the sterling exchange rate is more than twice that reported by Honohan and Conroy for the period 1982-92. The negative time trend is similar in magnitude but much less significant than in their result. Interpretation of the results for the period after the widening of the ERM band is clouded by multicollinearity between trend and the sterling exchange rate. However, the "best fit" is obtained when trend is omitted (equation 4). The coefficient on the sterling exchange rate is less than one third that reported for the crisis period and much lower than that reported by Honohan and Conroy for the pre-crisis period. While almost as good an account of the interest rate differential is obtained using the trend variable alone, its positive coefficient is difficult to interpret. If a penalty attached to Irish interest rates as a result of the January 1993 devaluation, it would surely have fallen rather than increased with the passage of time.

Similar conclusions may be drawn from a study of the Irish-British interest rate differential. For the months of the currency crisis the sterling exchange rate was clearly a dominant influence on this differential, and trend adds nothing to the explanation. After August 1993, however, the estimated coefficient of the exchange rate variable is negative, which is difficult to interpret. It is therefore natural to accept the equation that omits the exchange rate and uses trend on its own, which in fact yields a slightly better. The

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6This is the approach used in Honohan and Conroy (1994) for the period 1982m2 to 1992m7.
negative trend could be interpreted as showing that the gap between Irish and British rates narrowed as time elapsed from the devaluation or, alternatively, that the more meaningful equation is the one with the Irish-German differential as dependent variable, and the negative trend here captures the tendency for British rates to rise relative to German rates over the period.

Obviously these interpretations are tentative, but the cumulative evidence for the weakening of the influence of the sterling exchange rate on Irish interest rates following our departure from the narrow band in August 1993 is compelling. It is to be expected that the absence of a formal commitment to the DM allowed the Ir£ to float more freely relative to sterling, averting the speculative pressures associated with expectations of a realignment to which the authorities are reluctant to concede.

Conclusion

This paper has compared the fortunes of the Irish pound during two recent bouts of sterling weakness. During the first, between September 1992 and January 1993, pegging the value of the Irish currency in the narrow band of the ERM led to a dramatic appreciation relative to sterling. The result was a prolonged and costly crisis in Irish financial markets that was resolved by a 10% devaluation at the end of January 1993. During the second period of sterling weakness, at the end of 1994 and early in 1995, the Irish pound was not constrained by the 15% ERM band. Markets weathered this period in relative tranquillity. It appears that they regarded the Ir£ as floating, which permitted it to drift down relative to the DM while rising relative to sterling, thereby stabilising its broader, trade-weighted value.

While too much credence cannot be placed on the econometric results reported in this paper in light of the short time series on which they are based, they are plausible as a summary of how the currency of a small, open economy, with strong trading and financial links both to continental Europe and its traditional partner, Britain, has fared in the new environment that followed the widening of the ERM bands. What is of greatest interest is that abandoning the peg to the DM led to less rather than more uncertainty, as shown by the relative stability of interest rates and of the trade-weighted exchange rate since mid-1993 compared with the crisis that preceded the delayed realignement of January 1993. This highlights the difficulties likely to be faced by Ireland if by 1991 it is deemed to satisfy the criteria for adoption of the single European currency but British opts out of EMU.
### Table 1: Regression of Irish short term interest rates (i) on German interest rates (r\textsuperscript{DE}), British interest rates (r\textsuperscript{UK}) and the Sgd/Er exchange rate (e).

#### Monthly observations

Dependent variable = Δ i

<table>
<thead>
<tr>
<th>Equation number:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time period:</strong></td>
<td>86m8 - 92m8</td>
<td>92m1 - 93m8</td>
<td>93m9 - 95m2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Intercept        | -5.96 | -64.94 | -8.23 | 27.21 | 0.587
|                  | (3.33) | (3.62) | (0.64) | (1.21) | (0.58) |
| Δr\textsuperscript{DE} | 0.1875 | -2.51 | 0.48 | -0.1126 | 0.099
|                  | (1.11) | (1.36) | (0.21) | (0.24) | (0.24) |
| Δr\textsuperscript{UK} | 0.1848 | 1.14 | -2.88 | 0.1621 | 0.354
|                  | (1.65) | (0.61) | (1.67) | (0.40) | (1.06) |
| Δe               | 14.45 | 14.05 |      | -6.7575 |
|                  | (4.00) | (0.68) |      | (0.37) |      |
| r\textsuperscript{DE} | 0.1845 | -0.59 | 1.49 | -0.3389 | 0.404
|                  | (3.49) | (0.27) | (0.51) | (0.51) | (2.91) |
| r\textsuperscript{UK} | 0.0703 | 1.69 | -0.33 | 0.4711 | 0.293
|                  | (2.68) | (1.61) | (0.25) | (2.53) | (2.12) |
| e                | 9.07 | 64.54 |      | -24.26 |
|                  | (3.36) | (3.91) |      | (2.53) |      |
| d                | -0.2650 | -0.64 | -0.26 | -0.7304 | -0.766
|                  | (3.00) | (2.78) | (1.02) | (2.09) | (2.12) |

| R\textsuperscript{2} adj'd | 0.60 | 0.60 | 0.17 | 0.45 | 0.44 |
| Prob(F) (serial correlation) | 0.57 | 0.32 | 0.07 | 0.33 | 0.20 |

**Notes:**
- t ratios in parentheses.
- F statistic for the Lagrange multiplier test of residual serial correlation.
- The equation for the period 1986m8-1992m8 also included an intercept shift dummy for the month October 1986, and e represents the real exchange (see Walsh, 1993).
Table 3: Regression of Irish short term interest rate differentials (di) on the log of the Sg/IrE exchange rate (le) and trend (T).

Monthly observations

<table>
<thead>
<tr>
<th>Equation number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time period:</td>
<td>92m1 - 92m8</td>
<td>-- 93m9 - 95m2 --</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irish - German differential</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>6.55 (3.04)</td>
<td>-0.10 (0.07)</td>
<td>-1.27 (5.2)</td>
<td>1.07 (13.4)</td>
</tr>
<tr>
<td>le</td>
<td>57.176 (4.89)</td>
<td>9.17 (0.78)</td>
<td>18.201 (8.09)</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>-0.209 (1.27)</td>
<td>0.031 (0.84)</td>
<td>0.062 (7.49)</td>
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</tr>
<tr>
<td>R² adj'd</td>
<td>0.84</td>
<td>0.74</td>
<td>0.75</td>
<td>0.78</td>
</tr>
<tr>
<td>D.W.</td>
<td>1.64</td>
<td>1.44</td>
<td>1.15</td>
<td>1.48</td>
</tr>
<tr>
<td>Estimation</td>
<td>AR(1)</td>
<td>AR(1)</td>
<td>OLS</td>
<td>OLS</td>
</tr>
</tbody>
</table>

Irish - British differential

| Intercept       | 5.66 (1.95) | 3.16 (2.77) | 3.74 (6.04) | -0.40 (1.96) |
| le              | 62.03 (4.51) | -6.73 (0.65) | -31.2 (3.91) |
| T               | -0.058 (0.27) | -0.098 (3.11) | -0.11 (5.82) |
| R² adj'd        | 0.87 | 0.91 | 0.92 | 0.85 |
| D.W.            | 1.32 | 1.98 | 2.05 | 1.29 |
| Estimation      | AR(1) | AR(1) | AR(1) | AR(1) |

References


