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1. INTRODUCTION

This paper is a follow-up to a recent article appearing in this journal on the impact of Sterling's fluctuations (post-ERM exit) on the competitiveness of Scottish registered companies. The previous study, (Struthers, 1994; see also Struthers, 1992) based on a questionnaire survey of the Top 500 Scottish companies (as identified by the Scottish Business Insider database), elicited company responses to a series of questions highlighting the relative importance of the exchange rate factor to non-exchange rate factors in the period following Sterling's exit from ERM in October 1992. The questionnaire was circulated to the Finance Directors of these companies in March 1994. At the time of writing, 145 responses had been received of which 131 (90%) contained answers to some or all of the 55 questions posed. A full discussion of the sectoral analysis of the study appears in the previous article and will not be repeated here. This appears in the form of graphs depicting size variables, export ratios, country of exports etc.

The previous study was structured around five main aspects:

(1) Does the exchange rate really matter to companies as much as other non-exchange rate factors?

(2) Company price responses.

(3) The source of additional exports.

(4) Import and intermediate good effects.

(5) Non-EU market effects.

Three of these issues are developed further in this paper.

2. SUMMARY OF PREVIOUS FINDINGS

The following is a summary of the key findings to aspects 1, 3 and 4 above.

a) DOES THE EXCHANGE RATE REALLY MATTER?

The first issue is whether, in the light of company responses, the exchange rate is the all-important variable which determines the willingness of (diverse) companies to enter (or increase) their involvement in an export market. The previous study cast considerable doubt on this. From that study it appears that the exchange rate should be ranked lower than price, product quality and delivery times, and no higher than unit costs. This is consistent with the findings of Thirlwall (1978, 1992) with reference to the 1967 devaluation. Similarly, even after allowing for a substantial Sterling depreciation in the post-September 1992 period, as well as the average time-lags consistent with J-Curve analysis, there appears to be little evidence of Scottish companies responding significantly in favour of export products. This was true both in terms of the Level and the Value of export markets. Nor was there clear evidence of Scottish companies moving into EU markets in the post-1992 period. A mere 2% of respondents did so.

(b) SOURCE OF ADDITIONAL EXPORTS

The second aspect was with respect to those companies who had enjoyed a favourable export response. A significant proportion of respondents (70%) indicated that their higher export activity derived from additional overall output as opposed to a shift away from domestic output. This finding was consistent with the general supposition among commentators at the time of Sterling's exit from the ERM (e.g. the CBI and Chambers of Commerce) that a falling pound would, in contrast to the post-1967 period, benefit UK industry.
This was due to the existence of substantial unused capacity in UK (and Scottish) industry. CBI estimates published in April 1994 indicated that approximately 59% of UK companies were operating below full capacity; while 92% had sufficient capacity to satisfy expected demand increases assuming the recovery is sustained.

5. The proportion of investment funds generated externally; and

6. Interest rate and employment interactions.

The present paper attempts to address some of these aspects.

3. THE PRESENT STUDY

This study attempts to extend the analysis carried out previously by addressing some of the cost implications of Sterling's exit from the ERM. These aspects are structured around three principal considerations.

3.1. UNIT LABOUR COSTS

This aspect relates to the extent to which Scottish companies have been able to adjust their Unit Labour Costs (ULC) in the period following Sterling's depreciation. The following three questions were posed in this regard, with the results for these along with the other questions appearing in TABLE 1 below:

Question 1

Since Sterling's exit from the ERM and subsequent depreciation has your company been able to keep Unit Labour Costs (wages etc) at competitive European levels?

Question 2

If your answer to Question 1 is YES has this led to your company becoming more competitive within the European market? and;

Question 3

If your answer to Question 2 is YES can you quantify this effect in percentage terms?

The rationale for these questions is clear. Within the EU there has been much debate concerning the extent to which respective member states have been able to compete freely and effectively with each other. As far as the UK is concerned, a strong argument used in favour of Sterling's initial membership of the ERM was that since the currency's level was pegged within the ERM bands and a currency devaluation was thereby ruled out, the UK would not be able to steal a competitive advantage over other EU states via a devaluation. Ultimately this was supposed to lead to a gradual
harmonisation of ULCs across member states. For the UK in particular it was argued that this would force labour costs down, and make UK industry more competitive. Now that the currency has left the ERM what difference does this make to the question of the UK's relative competitiveness in terms of Unit Labour Costs?

Theory might suggest that Sterling's depreciation post-1992 should have led to an offsetting rise in Unit Labour Costs as the inflationary effects of the higher import costs induced by the depreciation fed through to the labour market. However it is more appropriate to analyse the ULC effects in relation to other cost and production aspects such as capacity utilisation levels and interest rates. These aspects will now be considered in turn.

3.2. CAPACITY UTILISATION LEVELS

As indicated above, it has been suggested by commentators such as the CBI that a crucial difference between the UK economy post-1967 (when Sterling was last devalued) and the economy post-1992 is the level of capacity utilisation of industry. To the extent that capacity utilisation levels are (by some definition) low this would offset the potential inflationary effects stemming from the currency depreciation. The level of capacity utilisation operated by a company will determine its response to the currency depreciation. This will also interact with unit labour cost responses. The following questions were asked:

Question 4

Prior to Sterling's exit from the ERM was your company operating at below full levels of capacity utilisation?; and

Question 5

If your answer to Question 4 is YES can you quantify the effect in percentage terms?

3.3. INTEREST RATES, INVESTMENT AND EMPLOYMENT EFFECTS

There has also been much debate since Sterling joined the ERM in 1990 and subsequently left in 1992 with respect to the impact of membership (and exit) on UK interest rates. This debate has, at times, been confused. For example, an argument for Sterling joining the ERM in the first place was the expectation that UK interest rates would stabilise at a lower level. However, despite the fact that interest rates in the UK did fall during the period of Sterling's membership, the longer Sterling remained in the system the clearer it became that continued membership was only possible with accompanying high interest rates. By the time of Sterling's exit from the system in October 1992 it was obvious that the price of continued Sterling membership was high interest rates which was highly detrimental to investment performance.

In the period since October 1992, UK interest rates have of course fallen dramatically. This then begs the question of whether industry has benefited from such declines and the precise form the benefits have taken. In this section of the paper we try to elicit the responses of Scottish companies to these changes in the following questions:

Question 6

Which of the two factors - Exchange Rates or Interest Rates - is most important to your company?

Question 7

Since Sterling's exit from the ERM has the decline in interest rates been beneficial to your company?

Question 8

If your answer to Question 7 is YES please indicate the benefits from those listed:

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Investment Expenditure</td>
<td>[1]</td>
</tr>
<tr>
<td>Increased Capacity</td>
<td>[2]</td>
</tr>
<tr>
<td>Reduced Costs of Production</td>
<td>[3]</td>
</tr>
<tr>
<td>Increased Employment</td>
<td>[4]</td>
</tr>
</tbody>
</table>

In order to try to capture the interactions of interest rates, investment levels and employment levels. The following questions were also asked:

Question 9

If lower interest rates have reduced your company's costs of production has this benefit been offset by higher wage costs?

Question 10

If lower interest rates have increased your investment expenditure can you quantify the effect in percentage terms?
Question 11

What proportion of your company's annual net investment expenditure is financed from borrowed funds (rather than from retained earnings)?

Question 12

If lower interest rates increased employment levels in your company, can you quantify the effect in percentage terms?

Question 13

If from Question 6 you answered that exchange rates are more important to your company than interest rates which of the following would benefit your company most?

- Strong Currency [1]
- Weak Currency [2]
- Stable Currency [3]

Company responses to these questions (and those highlighted earlier in the paper) appear in Table 1. Obtaining information of this nature throws light on the possible interactions which lie at the heart of the debate as to whether the UK economy really benefited from ERM membership. They also highlight some of the arguments for and against Sterling rejoining a reformed ERM.

4. INTERPRETATIONS

Interpretation of the above findings will take two forms. The first will be to draw inferences based on the basic findings as such; the second will attempt to establish correlations using the Chi-Square Test.

Responses to Questions 1-3 present mixed outcomes. Though (from Question 1) there is a substantial majority of respondents (96%) who indicate that they have been able to keep Unit Labour Costs at competitive European levels in the period since Sterling's exit from the ERM and subsequent depreciation, only a much smaller majority (54%) had perceived any overall competitive gain vis-a-vis European markets.

When the interest rate factor is addressed, responses to Question 6 indicate a substantial majority of firms (61%) considered it to be a more important variable to their companies than the exchange rate. This finding is also supported (albeit from a smaller number of respondents) by responses to Question 13 which indicated a sizeable majority of companies (60%) would prefer a stable currency to either a strong or a weak currency. Moreover, responses to Question 7 indicate that falling interest rates in the period since Sterling left the ERM have been beneficial to 81% of respondents; although (from responses to Question 8) this has only increased employment for 11% of respondents, other benefits (such as reduced costs of production and increased investment) being of greater significance. This is despite the fact that 91% of respondents (to Question 9) rejected the suggestion that the benefits of lower UK interest rates had been offset by higher wage costs (reinforcing responses to Question 1). Responses to Questions 4 and 5 only suggest a small majority (52%) of companies had been operating at less than full capacity utilisation prior to Sterling's exit from the ERM. This implies a more cautionary optimism as far as Scottish companies are concerned with respect to capacity utilisation levels than may be true of UK firms generally.

5. CROSS-TABULATION S AND CHI-SQUARE TESTS

Table 2 presents the results of Chi-Square Tests between a number of paired questions in the Questionnaire. Chi-Square statistics measure the discrepancy between observed and expected frequencies. The values in the table show tests of significance at the 1%, 5% and 10% significance levels. Those cited indicate some degree of correlation between the specified variables.

A number of questions listed in Table 1 were correlated with a series of questions from the earlier paper which dealt with the sectoral characteristics of respondents. For example: four sectoral characteristics were assessed - a definition of the sector itself; number of employees; ratio of exports to overall sales revenue; and the relative profitability of export markets to domestic markets. For purposes of Table 2 these are listed as Questions 14-17 respectively.

Section A of the table indicates some degree of correlation between the specific sector the company operates in and its ability to keep unit labour costs at competitive levels (Q1); as well as the extent to which the exchange rate or the interest rate is more important to the company concerned (Q6). The previous paper quantified the sectoral breakdown,
and indicated a significant cluster of companies in the engineering, financial services, retailing computing, tobacco and drinks, and oil-related activities. It is not surprising that responses to Questions 1 and 6 should be sector-dependant. The sectors most exposed to foreign competition such as engineering, tobacco and drinks, and computing were most affected by exchange rate factors rather than the interest rate factor. Similarly, these are the companies most likely to be concerned about keeping unit labour costs at competitive European levels.

In Section B of the table, there is some indication of a correlation between the number of employees in the various companies and responses to Questions 7, 9, 11 and 12. In this section there are some encouraging signs that recent declines in interest rates have not been offset by higher wage costs even in companies with a high level of labour intensity. This has allowed a significant proportion of companies to be able to increase their employment levels as a result of declines in interest rates; especially those whose investment expenditure is significantly financed from borrowed funds (as opposed to retained earnings).

Moving to Section C of the table there is some evidence of correlation between companies' exports to total sales revenue and their improved European competitiveness in the period since Sterling's depreciation (Q16 and Q2). There is also some evidence of a correlation between the level of exports/sales revenue of companies and their degree of capacity utilisation prior to Sterling's exit from the ERM (Q16 and Q4/5). Interpretation of this finding is, however, more difficult to make. One possible interpretation is that the higher is a company's export exposure, the more vulnerable it is to external influences such as the exchange rate and other uncertainties. As a result, such companies may be reluctant to raise their capacity levels, until greater exchange rate certainty, or lower interest rates are in place.

Question 17 (from the previous paper) assessed the ratio of profitability of exports to domestic sales. Once again, there is some limited evidence of correlation between this factor and the strongly negative responses to Question 9; the latter indicating that for a large majority of companies the benefit of lower interest rates had not been offset by higher wage costs (Q9). A potential interpretation of this finding is the possibility that higher profitability for certain export markets yields major benefits for companies. This, combined with the absence of any significant increase in unit labour costs, perhaps allowed such companies to transfer labour to the more highly profitable export markets.

Finally, from Section E there is some evidence of correlation between Q6 and Q7 indicating that falling interest rates in the period since Sterling's exit from the ERM have proved to be beneficial to a large number of companies, especially those for whom the interest rate was viewed as more important than the exchange rate. Correlations between, Q7 & Q11 and Q10 & Q11, also indicate that the beneficial effect of falling interest rates has been felt especially by those companies who finance a significant proportion of their investment expenditure from borrowed funds.

6. CONCLUSIONS

From these findings a number of conclusions may be drawn. These serve to reinforce some of the findings in the earlier papers. These are:

1. It is far from clear that Scottish Companies regard the exchange rate as the most important determinant of their export performance;

2. Whereas in the run-up to Sterling entering the ERM in 1990 currency stability was regarded as of prime importance, the interest rate factor and recognition of the interest rate cost associated with continued ERM membership now seems to be fully recognised by Scottish companies. This does not auger well, at least as far as Scottish companies are concerned, for an early return of Sterling to the ERM;

3. There has been some beneficial employment effects post-1992, though these are operating with time-lags. This is true despite the lack of any strong evidence of a devaluation induced wage inflation;

4. The above notwithstanding, there seems to be some way to go before Scottish companies regard themselves as having become more competitive within European markets: even in the period since Sterling's exit from the ERM. This finding tends to support that in the previous paper which suggested that competitiveness is determined by a composite of variables.
such as unit labour costs, product quality etc, the relative weights of which are difficult to ascribe.

Ultimately the issues raised in this paper as well as those in the earlier papers relate to the fundamental question of whether Scottish companies would favour the re-entry of Sterling to a reformed ERM or even a single European currency. Responses to this question were also obtained by the author; as well as indicators of the extent to which Scottish companies utilise the forward exchange market for currently transactions (see CBI, 1990; Sentance, 1993). This will be the main subject of the next and final paper in this series.

BIBLIOGRAPHY


Struthers, J (1992) 'The ERM, Sterling Depreciation and Scottish Industry', Fraser of Allander Quarterly Economic Commentary, Vol 19, No 4, June, pp60-81


ACKNOWLEDGEMENTS

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### Table 1: Questionnaire Results

<table>
<thead>
<tr>
<th>Question</th>
<th>No of Respondents</th>
<th>Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Since Sterling's exit from the ERM and subsequent depreciation has your company been able to keep Unit Labour Costs (wages etc) at competitive European levels?</td>
<td>76</td>
<td>YES - 96%, NO - 4%</td>
</tr>
<tr>
<td>2. If your answer to Question 1 is YES has this led to your company becoming more competitive within the European market?</td>
<td>60</td>
<td>YES - 54%, NO - 46%</td>
</tr>
<tr>
<td>3. If your answer to Question 2 is YES can you quantify this effect in percentage terms?</td>
<td>25</td>
<td>0% - 10% - 64%, 11% - 20% - 36%, 21% - 30% - 0%, 31% - 40% - 0%, 41% - 50% - 0%, 51% - 60% - 0%, 61% - 70% - 0%, 71% - 80% - 0%, OVER 80% - 0%</td>
</tr>
<tr>
<td>4. Prior to Sterling's exit from the ERM was your company operating at below full levels of capacity utilisation?</td>
<td>100</td>
<td>YES - 52%, NO - 48%</td>
</tr>
<tr>
<td>5. If your answer to Question 4 is YES can you quantify this effect in percentage terms?</td>
<td>50</td>
<td>0% - 10% - 20%, 11% - 20% - 22%, 21% - 30% - 18%, 31% - 40% - 4%, 41% - 50% - 6%, 51% - 60% - 0.5%, 61% - 70% - 8%, 71% - 80% - 10%, OVER 80% - 10%</td>
</tr>
<tr>
<td>6. Which of the two factors - Exchange Rates or Interest Rates - is most important to your company?</td>
<td>113</td>
<td>EXCHANGE RATES - 39%, INTEREST RATES - 61%</td>
</tr>
<tr>
<td>7. Since Sterling's exit from the ERM has the decline in UK interest rates been beneficial to your company?</td>
<td>113</td>
<td>YES - 81%, NO - 19%</td>
</tr>
<tr>
<td>QUESTION</td>
<td>NO OF RESPONDENTS</td>
<td>RESPONSES (%'s)</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 8. If your answer to Question 7 is YES please indicate the benefits from those listed.                                                                                                                                                                                                                                                                  | 116               | INCREASED INVESTMENT - 31%  
INCREASED CAPACITY - 13%  
REDUCED COSTS OF PRODUCTION - 45%  
INCREASED EMPLOYMENT - 11% |
| 9. If lower interest rates have reduced your company's costs of production has this benefit been offset by higher wage costs?                                                                                                                                                                                                                           | 86                | YES - 9%  
NO - 91%                                                                                                                                                                                                                                                                  |
| 10. If lower interest rates have increased your investment expenditure can you quantify the effect in percentage terms?                                                                                                                                                                                                                           | 41                | 0% - 10% - 27%  
11% - 20% - 27%  
21% - 30% - 19.5%  
31% - 40% - 2.4%  
41% - 50% - 7.3%  
51% - 60% - 2.4%  
61% - 70% - 4.8%  
71% - 80% - 0%  
OVER 80% - 9.7% |
| 11. What proportion of your company's annual net investment expenditure is financed from borrowed funds (rather than from retained earnings)?                                                                                                                                                                                                                      | 103               | 0% - 10% - 44.6%  
11% - 20% - 6.7%  
21% - 30% - 4.8%  
31% - 40% - 2.9%  
41% - 50% - 10.6%  
51% - 60% - 1.9%  
61% - 70% - 4.8%  
71% - 80% - 4.8%  
OVER 80% - 18.4%       |
| 12. If lower interest rates increased employment levels in your company can you quantity the effect in percentage terms?                                                                                                                                                                                                                           | 24                | 0% - 10% - 62.5%  
11% - 20% - 25.0%  
21% - 30% - 4.2%  
31% - 40% - 8.2%  
41% - 50% - 0%  
51% - 60% - 0%  
61% - 70% - 0%  
71% - 80% - 0%  
OVER 80% - 0%          |
13. If, from Question 6, you answered that exchange rates are more important than interest rates which of the following would benefit your company most?

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONDENTS</th>
<th>RESPONSES (%'s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41</td>
<td>STRONG CURRENCY - 17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WEAK CURRENCY - 21.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STABLE CURRENCY - 60.9%</td>
</tr>
</tbody>
</table>

*The percentages may not aggregate to 100 due to rounding*

**TABLE 2: CHI-SQUARE RESULTS**

<table>
<thead>
<tr>
<th>CORRELATIONS BETWEEN QUESTIONS</th>
<th>DEGREES OF FREEDOM</th>
<th>SIGNIFICANCE LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q14 and Q1</td>
<td>6</td>
<td>✔</td>
</tr>
<tr>
<td>Q14 and Q6</td>
<td>6</td>
<td>✔</td>
</tr>
<tr>
<td>Q14 and Q6</td>
<td>6</td>
<td>✔</td>
</tr>
<tr>
<td>Q15 and Q7</td>
<td>6</td>
<td>✔</td>
</tr>
<tr>
<td>Q15 and Q9</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Q15 and Q11</td>
<td>48</td>
<td>✔</td>
</tr>
<tr>
<td>Q15 and Q12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Q15 and Q12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Q16 and Q2</td>
<td>8</td>
<td>✔</td>
</tr>
<tr>
<td>Q16 and Q4</td>
<td>8</td>
<td>✔</td>
</tr>
<tr>
<td>Q16 and Q5</td>
<td>64</td>
<td>✔</td>
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<tr>
<td>Q16 and Q6</td>
<td>8</td>
<td>✔</td>
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<tr>
<td>Q16 and Q11</td>
<td>64</td>
<td>✔</td>
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<td>12</td>
<td>✔</td>
</tr>
<tr>
<td>Q16 and Q12</td>
<td>12</td>
<td>✔</td>
</tr>
<tr>
<td>Q17 and Q9</td>
<td>7</td>
<td>✔</td>
</tr>
</tbody>
</table>