

**CORPORATE MANAGEMENT OF
EXCHANGE RATE MISALIGNMENT -
THE EXPERIENCE OF U.K. FIRMS 1979-82, 1987-92**

by

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ABSTRACT

Neoclassical approaches to the analysis of the impact of a floating exchange regime on business have tended to take the form of models or econometric relationships between exchange rate volatility and trade volumes. These have tended to conclude that floating does not harm trade.

The rationale of this study is to examine the impact of prolonged currency overvaluation from the perspective of individual firms. The research method is a case study investigation of the impact of sterling overvaluation 1979-82 and 1990-92 on two U.K. companies in the auto and chemical industries in a comparative context with their German rivals. Further, the impact of US\$ misalignment in the years 1987-92 on a U.K. exporter highly dependent on the U.S. market is compared with the impact on its German rivals, since both U.K. and German firms were at a disadvantage. In addition, the case is documented of a large U.K. firm which failed during the sterling misalignment which began in 1979.

It was found that external financial hedges offered no solution for managing misalignment and that internal financial, operational and strategic hedging is necessary. However, the necessary strategic adjustments only occurred with a lag, if at all. The lag is owing to the suddenness and unanticipated duration of currency misalignment. The two U.K. corporations were forced into retrenchment whereas their German rivals, with a more stable real exchange rate environment and/or a more balanced product/market strategy, gained a competitive advantage.

The implications for corporate and public policy are investigated in an E.U. context. Corporations must generate flexibility in their product-market strategies and if they cannot do so, the consequences under prolonged currency overvaluation are serious.

It was also found that not only do German firms enjoy a more favourable currency background, but they also benefit from a range of other factors - determinable by public policy - which reduce uncertainty. The reduction in uncertainty from these sources, such as the absence of hostile takeovers, can be of greater importance to the firm than currency stability. Against this background, the conventional self-imposed restriction of the corporate treasury role to financial rather than strategic hedging - and the failure to effectively institutionalize responsibility for proactive strategic currency hedging elsewhere in the firm - will tend to reinforce the higher risk environment facing U.K. firms compared to their German and continental rivals. Thus as far as U.K. firms are concerned, corporations are partial and biased not only in the management of foreign exchange risk but also in the management of total risk.

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The case-studies have been read and commented upon by practitioners who were or are directly concerned with the currency management of the subject companies at the time concerned in the cases. This lends the case-studies some authenticity:

Lesney case-study

Peter Slade, former treasurer

Jaguar case-study

John Burke, treasurer, Jaguar Cars;

Dr. Anton Frantzke, head of corporate planning and controlling, and Dipl.Oec. S. Jost-Heil, both of Daimler Benz;

E. Phillips, financial controller, BMW (GB) Ltd.

ICI case-study

Trevor Harrison, former chief planner, financial controller and treasurer of ICI;
Alan Clements, former finance director and treasurer of ICI;
S. Bryan, treasurer of Hoechst U.K.;
Dr. Brühl, chief economist and member of Currency Committee, Hoechst AG
E. Holm-Hansen, head of corporate planning, BASF plc.

All the above-named have read and commented on respective individual case studies in the text. Any remaining errors or omissions are mine alone.

LIST OF DIAGRAMS, CHARTS AND TABLES

DIAGRAMS

1.1 SCOPE OF TREASURY MANAGEMENT	29
1.2 FLOW DIAGRAM OF FUNCTIONS OF THE CORPORATE TREASURY	30
2.1 NEOCLASSICAL EQUILIBRIUM RELATIONSHIP BETWEEN THE INTEREST RATE, INFLATION RATE AND EXCHANGE RATES	56
3.1 PORTER'S BASIS OF COMPETITIVE ADVANTAGE	96
3.2 ORGANIZATION OF THE FINANCE FUNCTION	105
3.3 APPROACH OF THE CORPORATE TREASURY TO CURRENCY MANAGEMENT	106
3.4 EXAMPLE OF AN ORGANIZATIONAL STRUCTURE WHICH WOULD SUPPORT PROACTIVE CURRENCY MANAGEMENT	107

CHARTS

1.1 OVERVALUATION IN STERLING AGAINST THE US\$, PPP & ACTUAL RATE, 1980-93	20
1.2 OVERVALUATION IN STERLING AGAINST THE DM, PPP & ACTUAL RATE, 1980-93	20
1.3 OVERVALUATION IN STERLING AGAINST THE FRFR, PPP & ACTUAL RATE, 1980-93	21
1.4 OVERVALUATION IN STERLING AGAINST THE YEN, PPP & ACTUAL RATE, 1980-93	21
1.5 OVERVALUATION IN THE US\$ AGAINST THE YEN, PPP & ACTUAL RATE, 1980-93	22
1.6 OVERVALUATION IN THE US\$ AGAINST THE DM, PPP & ACTUAL RATE, 1980-93	22
1.7 GROSS FIXED CAPITAL FORMATION, U.K. & GERMANY, 1980-94	45
1.8 VOLATILITY IN U.K. CAPITAL EXPENDITURE IN MANUFACTURING 1970-94	45
7.1 VOLATILITY IN JAGUAR'S SHARE OF EXPORTS IN TOTAL SALES COMPARED TO BMW & MERCEDES-BENZ	188
7.2 VOLATILITY IN JAGUAR'S OUTPUT COMPARED TO BMW & MERCEDES-BENZ	189
7.3 VOLATILITY IN JAGUAR'S PROFITS COMPARED TO BMW & MERCEDES-BENZ	190
8.1 COMPARISON OF TURNOVER BY PRODUCT, ICI & GERMAN COMPETITORS 1979	240a
8.2 COMPARISON OF TURNOVER & PROFIT BY PRODUCT, ICI & GERMAN COMPETITORS 1992	240b
10.1 AUTO OUTPUT 1972-1992	306
10.2 INDEXES OF CHEMICALS PRODUCTION, U.K., U.S., GERMANY 1979-83	309
10.3 U.K. CHEMICAL INDUSTRY INDEXES OF HOME SALES AND TRADE VOLUME 1979-83	310
10.4 U.K. CHEMICALS TRADE BALANCE 1983 AND % CHANGE ON 1982	311
10.5 U.K. CHEMICAL INDUSTRY: IMPORT PENETRATION BY SECTOR	312
10.6 U.K. INDUSTRIAL PRODUCTION	314
10.7 MANUFACTURERS' MARGINS, U.K., 1980-1994	315
10.8 TOTAL COMPANY LIQUIDATIONS IN ENGLAND & WALES	315
10.9 U.S REAL GDP & INFLATION	316
10.10 U.S CAPACITY UTILIZATION SINCE 1945	317
10.11 RECOVERY LEADERS & LAGGARDS - U.K., U.S. & GERMANY COMPARED 1981-93	320
10.12 GLOBAL FOREIGN DIRECT INVESTMENT 1974-1992	320

TABLES

1.1	CATEGORIES OF HEDGING AGAINST CURRENCY RISK AND DECISION-TAKERS RESPONSIBLE FOR SUCH HEDGING	37
2.1	NEOCLASSICAL APPROACH OF COST MINIMIZATION APPLIED TO HEDGING	48
2.2	HIERARCHY OF FINANCIAL MARKET INTEGRATION	60
2.3	ECONOMETRIC TESTS OF THE IMPACT OF EXCHANGE RATE VOLATILITY	66
3.1	DISCIPLINES SUITABLE IN ADDRESSING RESEARCH OBJECTIVES	82
3.2	STRATEGIC ACCOUNTING INDICATORS	88
4.1	RESEARCH METHODS PREVIOUSLY USED IN INVESTIGATING CORPORATE CURRENCY RISK MANAGEMENT - A SUMMARY	116
4.2	MERITS AND DEMERITS OF VARIOUS RESEARCH METHODS IN INVESTIGATING CORPORATE CURRENCY RISK MANAGEMENT - A SUMMARY	118
4.3	CLASSIFICATION OF FIRMS BY INVOLVEMENT IN DOMESTIC AND INTERNATIONAL MARKETS	129
5.1	STRATEGIC MANAGEMENT OF ECONOMIC EXPOSURE	157
5.2	A FRAMEWORK FOR ECONOMIC EXPOSURE MANAGEMENT	159
6.1	LESNEY PRODUCTS & CO.LTD., SUMMARY PROFIT & LOSS & RATIO ANALYSIS, 1975-1981	169
6.2	EXPORTS FROM THE U.K. AS A % OF TOTAL SALES, 1975-81, LESNEY PRODUCTS & CO.LTD.	172
6.3	PRODUCT-MARKET BACKGROUND	174
6.4	LEADING U.K. TOY MANUFACTURERS BY TURNOVER IN £M	175
6.5	U.K. TOY INDUSTRY FACTORY SALES, IMPORTS AND EXPORTS, 1975-80	176
6.6	U.K. IMPORTS AND EXPORTS OF TOYS BY CATEGORY, 1978-80	177
6.7	RELATIVE SIGNIFICANCE OF LESNEY'S TOY SALES FROM OVERSEAS PRODUCTION, 1978-81	181
7.1	JAGUAR'S 1983 RESULTS UNDER DIFFERING EXCHANGE RATE ASSUMPTIONS	186
7.2	EXTENT OF NATURAL HEDGE IN THREE COMPETITORS	187
7.3	UNIT SALES IN U.K. CAR MARKET	193
7.4	TOTAL U.K. CAR MARKET, UNITS SOLD IN ELITE SECTOR AND % SHARES	194
7.5	EXPORTS AS A % OF TOTAL SALES	195
7.6	COMPARISON OF £ HEDGING STRATEGIES OF TREASURY ONLY 1979-83	197
7.7	TOTAL OUTPUT OF JAGUAR AND ITS GERMAN RIVALS, 1977-81	200
7.8	NET INCOME, BMW AND MERCEDES-BENZ 1977-81	200
7.9	BMW'S PROFITS IN THE U.K. AND % OF COSTS DENOMINATED IN DM	201
7.10	COMPARATIVE VULNERABILITY TO REAL DOLLAR DEPRECIATION	202
7.11	U.S. SALES AS A % OF TOTAL SALES	203
7.12	COMPARISON OF US\$ HEDGING STRATEGIES OF TREASURY ONLY, 1986-92	208
7.13	BMW'S PROFIT/LOSS ON U.S. SALES 1986-92	213
7.14	STRATEGIC OPTIONS TO MANAGE ECONOMIC EXPOSURE 1986-92	216
7.15	CAPITAL EXPENDITURE OF THREE COMPETITORS 1986-92	218

7.16	STRATEGIC OPTIONS TO MANAGE ECONOMIC EXPOSURE, 1992 ONWARDS . .	220
7.17	JAGUAR'S SALES DISTRIBUTION BY REGION IN %, 1985-88	222
8.1	ICI, SUMMARY PROFIT AND LOSS AND RATIO ANALYSIS, 1979-82	228
8.2	ICI'S PROFIT BEFORE TAX EXPRESSED IN 1983 £M, 1979-82	229
8.3	INDICATORS OF COMPARATIVE VULNERABILITY, 1979	230
8.4	ICI'S EXPORTS FROM THE U.K., £M, 1979-82	234
8.5	ICI'S BORROWING, £M 1979-82	234
8.6	ICI'S RELATIVE INFLEXIBILITY 1979	241
8.7	ICI'S LOSSES IN INDUSTRIAL CHEMICALS, £M, 1979-82	242
8.8	COMPARATIVE DEPENDENCE OF ICI ON INDUSTRIAL CHEMICALS, 1979-82 . .	243
8.9	SPECIALITY CHEMICALS AS A % OF TOTAL SALES, ICI AND GERMAN COMPETITORS, 1970 AND 1980	244
8.10	ICI'S DRIVE TO REDUCE ITS PROPORTION OF WORLD SALES FROM U.K. PRODUCTION, 1979-92	244
8.11	% OF TOTAL SALES ABROAD, ICI AND GERMAN COMPETITORS, 1979-92	245
8.12	% OF TOTAL SALES FROM FOREIGN PRODUCTION, ICI AND GERMAN COMPETITORS, 1979-92	245
8.13	NET INCOME AS A % OF SALES, ICI AND GERMAN COMPETITORS, 1979-83 . .	248
8.14	RESTRUCTURING COSTS, ICI 1979-83	249
8.15	PROVISIONS AND ADDITIONS TO RESERVES IN 1980, ICI'S GERMAN COMPETITORS	249
8.16	% OF TOTAL SALES IN N.AMERICA, ICI AND GERMAN COMPETITORS 1980-92	250
8.17	COMPARISON OF PROFIT FROM N.AMERICA IN TOTAL GROUP PROFIT	251
8.18	FACTORS INFLUENCING COMPARATIVE VULNERABILITY IN U.S. UNDER CURRENCY MISALIGNMENT	252
8.19	% OF N.AMERICAN SALES DERIVING FROM U.S. PRODUCTION	254
8.20	HOECHST'S PRODUCTION IN THE U.K. AS A % OF SALES IN THE U.K.	256
8.21	HOECHST'S SALES IN THE U.K., £M, 1979-83	257
8.22	COMPARISON OF SALES & PROFIT, BERGER & ICI PAINTS 1979-83	259
8.23	ICI, SUMMARY PROFIT AND LOSS, £M AND RATIO ANALYSIS, 1989-92	268
8.24	% OF TOTAL SALES IN E.U., ICI AND GERMAN COMPETITORS, 1979-82	271
8.25	% OF TOTAL PROFITS DERIVING FROM THE E.U., ICI AND GERMAN COMPETITORS, 1979-92	271
10.1	U.K. AUTO MANUFACTURERS' UNIT SALES AND EXPORTS 1980-86	307
10.2	AUTOS AS A % OF TOTAL U.K. EXPORTS 1964/88	308
10.3	OUTWARD DIRECT INVESTMENT OVERSEAS BY U.K.COMPANIES,£M 1979-92 .	321
10.4	OUTWARD DIRECT INVESTMENT BY U.K. COMPANIES IN THE CHEMICAL INDUSTRY,£M 1979-90	323
10.5	TRADE AS A PERCENTAGE OF GDP, 1990, SELECTED COUNTRIES & THE E.U.	331

APPENDIX

A.1	SURVEYS INVESTIGATING THE APPROACH OF CORPORATIONS TO CURRENCY RISK MANAGEMENT	371
A.2	SURVEY EVIDENCE ON CURRENCY RISK MANAGEMENT OBJECTIVES	373
A.3	SURVEY EVIDENCE ON THE MOST FREQUENTLY USED METHODS FOR MANAGING CURRENCY RISK	374
A.4	SURVEY EVIDENCE ON THE EFFECTIVENESS OF CURRENCY MANAGEMENT METHODS	375
A.5	EDELSHAIN'S SURVEY EVIDENCE ON THE EFFECTIVENESS OF METHODS . . .	376
A.6	TREASURY RISK POSTURE IN ASSET & LIABILITY MANAGEMENT	377
A.7	METHODS OF PURSUING AGGRESSIVE STANCE VIA CHANGES IN OPERATING VARIABLES	378
A.8	METHODS OF PURSUING AGGRESSIVE STANCE VIA CHANGES IN FINANCIAL VARIABLES	379

ABBREVIATIONS

ACEA	Association des Constructeurs Européens d'Automobiles
ACT	Association of Corporate Treasurers
AMUE	Association for the Monetary Union of Europe
BDI	Bundesverband Deutscher Industrie
BL	British Leyland
CBI	Confederation of British Industry
CEFIC	European Chemical Industry Association
CIA	Chemical Industries Association
DCF	Confederation of world auto producers
DEBA	Discounted cash flow
DIHT	Deutscher Industrie und Handelstag
DT	Daily Telegraph
DTI	Department of Trade and Industry (U.K.)
E	The European
ECU	European Currency Unit
EMH	Efficient markets hypothesis
EMS	European Monetary System
EMU	European Monetary Union
EPS	Earnings Per Share
ERM	Exchange Rate Mechanism
ESRC	Economic & Social Research Council
EU	European Union
FT	Financial Times
G-7	Group of 7 industrial countries
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
IMF	International Monetary Fund
IoD	Institute of Directors
NAFTA	North American Free Trade Association
NIESR	National Institute of Economic Research
NPV	Net present value
OECD	Organization for Economic Cooperation and Development
OICA	Organisation International des Constructeurs d'Automobiles
P/L	Profit and Loss
PPP	Purchasing Power Parity
RoA	Return on Assets
ROCE	Return on Capital Employed
RoR	Rate of Return
SMMT	Society of Motor Manufacturers and Traders
ST	Sunday Telegraph
UNICE	European Employers' Federation
U.K.	United Kingdom
U.S.	United States of America
VDA	Verein Deutscher Automobilhersteller
VDI	Verband der Chemischen Industrie
WIP	Work in progress
WTO	World Trade Organization

CONTENTS

ABSTRACT	2
ACKNOWLEDGEMENTS	3
LIST OF DIAGRAMS	5
LIST OF CHARTS	5
LIST OF TABLES	6
ABBREVIATIONS	9

CHAPTER ONE : PROBLEM IDENTIFICATION

1. BACKGROUND	18
1.1 Conventional orthodoxy	23
2. PROBLEM IDENTIFICATION	28
2.1 Authorized speculation	32
2.2 Exchange rate misalignment	33
2.3 Economic exposure	35
2.4 Internal hedging is diffused compared to external hedging	36
2.5 Ineffectiveness of economic exposure management	38
2.6 Causes of exchange rate misalignment neglected	39
2.7 Rival firms in rival states where the currency is not overvalued	42

CHAPTER TWO: THEORETICAL APPROACHES - NEOCLASSICAL

1. INTRODUCTION	46
2. NEOCLASSICAL METHODOLOGY	47
2.1 Definition	47
2.2 Normative models in finance	47
2.3 Normative models in economics	51

3.	FINANCE	54
	3.1 Contribution of finance theory to currency risk management	54
	3.2 Neoclassical equilibrium and imperfections to equilibrium	55
4.	ECONOMICS	63
	4.1 Exchange rates and competitiveness	63
	4.2 Exchange risk and the individual corporation	65
	4.3 Evidence on macroeconomic performance under fixed and floating regimes	68
	4.4 Microeconomic performance	70
	4.5 Tools for measuring currency overvaluation	72
	4.6 Theoretical channels explaining currency overvaluation under fixed and floating	74
	4.7 Monetary integration to preclude currency overvaluation	77
	4.8 Theory on how exchange regimes change	79
5.	CONCLUSIONS	81

CHAPTER THREE: THEORETICAL APPROACHES OTHER THAN NEOCLASSICAL

1.	INTRODUCTION	82
2.	ACCOUNTING METHODS & STATEMENTS	83
	2.1 Usefulness for investigating individual corporations	83
	2.2 Information that is needed but is not available in accounting statements	84
3.	BUSINESS STRATEGY LITERATURE	91
	3.1 Introduction	91
	3.2 Matching qualifications and opportunities	92
	3.3 Organizational perspective	92
	3.4 Political perspective	93
	3.5 Economic perspective	93
	3.6 Positional versus competence perspectives	100
	3.7 Voluntaristic versus deterministic perspectives	101
	3.8 Deliberative versus emergent perspectives	102
4.	ORGANIZATION THEORY	104
	4.1 Problem identification	104
	4.2 Contribution of organization theory	108
5.	CONCLUSIONS	112

CHAPTER FOUR: METHODOLOGY AND HYPOTHESES

1.	HYPOTHESES	114
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2.	RATIONALE FOR EMPIRICAL APPROACH	116
	2.1 Research methods used in previous investigations	116
	2.2 Disadvantages of the neoclassical approach	116
	2.3 The empirical approach	118
	2.4 Typology of the case study method	119
	2.5 Disadvantages of the case-study research method	120
	2.6 Previous case studies	122
3.	RESEARCH METHODOLOGY	124
	3.1 Research Design	124
	3.2 Sample structure & selection method	124
4.	SELECTION OF CASE-STUDY FIRMS	127
	4.1 Membership of AMUE	127
	4.2 Degree of domesticity/multinationality	128
	4.3 Relative sophistication of treasury	129
	4.4 Degree of product diversification	130
	4.5 Geographical diversification of production	131
5.	SAMPLE SIZE	133
6.	DATA COLLECTION METHODS	134
7.	QUESTIONNAIRE CONTENT	135
8.	CONCLUSIONS	140

CHAPTER FIVE: THE CONVENTIONAL CORPORATE APPROACH TO THE MANAGEMENT OF FOREIGN EXCHANGE RISK

1.	INTRODUCTION	143
2.	CONVENTIONAL APPROACH OF CORPORATIONS TO CURRENCY RISK MANAGEMENT	144
3.	IS THE TREASURY RISK AVERSE OR A RISK TAKER?	147
	3.1 Defining risk	147
	3.2 Finance & economics literature on corporate risk aversion	148
	3.3 Differing structure and motivations of corporate treasuries	151
4.	METHODS TO MANAGE OVERVALUATION - THEORY & EMPIRICAL EVIDENCE	156
5.	EFFECTIVENESS OF EXPOSURE MANAGEMENT METHODS	160
	5.1 Which Currency Exposures are Important - contradictions between theory and empirical evidence	160
	5.2 Theory on the cost of hedging using forward contracts	161
	5.3 Empirical evidence on why corporations are not managing economic exposure	166

CHAPTER SIX: LESNEY PRODUCTS & CO.LTD.

1.	OBJECT OF CASE STUDY	168
2.	ANATOMY OF CRISIS	169
3.	HYPOTHESES	170
4.	VULNERABILITY OF LESNEY TO THE STERLING MISALIGNMENT SYNDROME	171
5.	PRODUCT-MARKET BACKGROUND	173
6.	LIMITED ROLE OF THE TREASURY	178
7.	LIMITED ABILITY TO ADJUST PRODUCT-MARKET STRATEGY	180
8.	CONCLUSIONS	183

CHAPTER SEVEN: JAGUAR CARS LTD

1.	OBJECT OF CASE STUDY	184
2.	BACKGROUND	184
3.	HYPOTHESES	186
4.	METHODOLOGY	186
5.	VULNERABILITY OF JAGUAR TO REAL STERLING APPRECIATION 1979-82 .	193
	5.1 Strategies of BMW and Mercedes-Benz 1979-82	195
6.	LIMITED ROLE OF THE CORPORATE TREASURY	196
	6.1 Hypothesis	196
	6.2 Similarities in treasury management	196
7.	DIFFICULTIES IN ADJUSTING PRODUCT-MARKET STRATEGY	199
8.	VULNERABILITY OF JAGUAR TO REAL US\$ DEPRECIATION 1986-92	202
9.	LIMITED ROLE OF THE CORPORATE TREASURY	207
10.	DIFFICULTIES IN ADJUSTING PRODUCT-MARKET STRATEGY	215
11.	CONCLUSIONS	223

CHAPTER EIGHT: I.C.I.

1.	OBJECT OF CASE-STUDY	224
2.	ANATOMY OF CRISIS	228
3.	VULNERABILITY OF ICI TO £ OVERVALUATION 1979-82	230
4.	LIMITED ROLE OF THE CORPORATE TREASURY	233
5.	DIFFICULTIES IN CREATING A NATURAL HEDGE 1979-82	240
6.	COMPETITIVE ADVANTAGES ACCRUING TO GERMAN RIVALS	247
	6.1 Hypotheses	247
	6.2 German competitors did not share ICI's profits crisis	248
	6.3 German competitors were not forced into a costly restructuring	248
	6.4 German competitors benefited in N.American market	250
	6.5 German exports to the U.K. benefited	255
7.	HOECHST	256
	7.1 Limited role of the treasury in hedging U.K. exports	257
	7.2 Internal hedging strategy	257
	7.3 Comparison between Berger & ICI Paints Division	259
8.	BASF & BAYER IN THE U.K.	264
9.	HOW SUCCESSFUL WAS ICI'S STRATEGIC CHANGE IN MANAGING CURRENCY RISK?	267
10.	ICI'S ORGANIZATIONAL CHANGE	274
11.	CONCLUSIONS	280

CHAPTER NINE: IMPLICATIONS FOR CORPORATE POLICY

1.	INTRODUCTION	281
2.	GENERALIZING THE CASE-STUDIES	282
3.	LIMITATIONS TO GENERALIZING THE CASE-STUDIES	285
4.	WHY HAS THE ROLE OF THE TREASURY REMAINED LIMITED FOR SO LONG?	289
5.	TREASURERS' PREFERENCES ON EXCHANGE RATE AND REGIME POLICY .	292
6.	RECOMMENDATIONS FOR CORPORATE ACTION TO REDUCE VULNERABILITY TO PROLONGED CURRENCY OVERVALUATION	295

CHAPTER ELEVEN: IMPLICATIONS FOR PUBLIC POLICY

1.	INTRODUCTION	302
2.	REPLICATING THE FIRM-LEVEL EFFECTS OF PROLONGED EXCHANGE RATE OVERVALUATION TO INDUSTRIES	303
	2.1 Existing research	303
	2.2 U.K. auto industry	305
	2.3 U.K. chemical industry	309
3.	THE IMPACT ON MACROECONOMIC INDICATORS	313
	3.1 U.K. 1979-83 and 1990-92	313
	3.2 U.S. 1980-85	316
	3.3 Germany following monetary unification 1990	318
	3.4 Conclusion	319
	3.5 The impact on FDI	321
	3.6 The impact on employment levels	324
	3.7 The impact on international monetary relations	325
4.	CAUSAL FACTORS IN PROLONGED EXCHANGE RATE OVERVALUATION . . .	327
	4.1 Finance and economic theory	327
	4.2 Commercial policy	327
	4.3 External shocks	328
	4.4 Divergences in fiscal and monetary policy	328

5.	GOVERNMENTS AS CREATORS OF CURRENCY OVERVALUATION	330
	5.1 Gainers and losers from currency overvaluation	330
	5.2 U.K. 1979-82 and 1990-92	332
	5.2 U.S. 1980-85	333
	5.3 Germany 1990 and overvaluation in the Neue Länder	334
6.	CONCLUSIONS	337

CHAPTER ELEVEN: CONCLUSIONS

1.	CONCLUSIONS FOR CORPORATE POLICY	338
2.	CONCLUSIONS FOR PUBLIC POLICY	340
3.	CONTRIBUTION OF THESIS	354
	3.1 Findings	354
	3.2 Application of research	359
4.	QUESTIONS FOR FUTURE RESEARCH	360
	4.1 Organization theory	360
	4.2 Accounting	362
	4.3 Finance: Agency theory	363
	4.4 Business Strategy	363
	4.5 Economics: Social and institutional research	365
	4.6 Empirical Testing of models	365
	4.7 International Relations	366

APPENDICES

1.	RESULTS OF ACT SURVEY QUESTIONNAIRE	367
2.	PREVIOUS SURVEYS INVESTIGATING FOREIGN EXCHANGE RISK	
	MANAGEMENT	371
3.	ASSET & LIABILITY MANAGEMENT FOR CURRENCY OVERVALUATION ...	377
4.	ROLE OF EXCHANGE REGIME IN PROLONGED CURRENCY OVERVALUATION	380
	1. Objectives	380
	2. Gold standard and overvaluation	380
	3. Flexible regime and overvaluation	381
	4. Bretton Woods and overvaluation	381
	5. post-Bretton Woods floating and overvaluation	382
5.	INEFFECTIVENESS OF CORPORATE LOBBYING & PRESSURE GROUPS	385
6.	CURRENCY RISK IN PERSPECTIVE TO OTHER RISKS STEMMING FROM PUBLIC POLICY - A COMPARISON OF CORPORATE VULNERABILITY IN GERMANY/U.K.	396
	1. Objectives	396
	2. Comparative vulnerability to hostile takeover	396
	3. Comparative vulnerability to high dividend-payout ratios	397
	4. Comparative vulnerability to corporate failure, arising from:	
	4.1 bankruptcy law	398
	4.2 bank relations and withdrawal of credit	399
	4.3 accounting practice	400
	4.4 late payment	402
	BIBLIOGRAPHY	404

CHAPTER ONE

PROBLEM IDENTIFICATION

1. BACKGROUND

Although a floating or managed floating exchange regime between major currencies has been in existence for over 20 years¹, little attention has been paid in the literature as to how corporations manage foreign exchange risk. Thus far, the state of empirical research in over 20 years consists of only 12 surveys of corporations in the U.S., the U.K. and Germany². These empirical investigations are surveyed in **Appendix 2**. Their object has been primarily to gather information on the practices of firms in foreign exchange management. This literature has simply addressed itself to three gaps in knowledge:

1. an investigation into and a classification of exposures;
2. a listing of the techniques to manage them;
3. an investigation into managerial perceptions of the effectiveness of these techniques.

Such information from postal surveys can now be considered as adequate following the extensive Edelshain (1995) 1991 survey. What is inadequate is empirical information on the effects of prolonged exchange rate overvaluation and the problem corporations face in managing it.

Three main reasons can be advanced to explain the slow pace of research over the twenty years. One is that foreign exchange risk management is an interdisciplinary topic. It encompasses the disciplines of finance, economics, accounting, organizational behaviour, management science and international monetary relations. Researchers within the various

¹a semi-fixed exchange regime has only been in existence within the European Union since 1979. The floating regime between ERM currencies and the dollar and yen remains.

²A literature search was not attempted for Japan owing to a linguistic barrier. Only one survey is known to have been completed for French corporations. This was an unpublished mimeo dated 1977 from the LARE laboratory, University of Bordeaux.

disciplines have tended to take a partial approach to the problem (in particular finance theory), but in understanding how overvaluation has come about, an interdisciplinary approach is called for (see **Chapters 2 and 3** and Strange 1970,1972).

A second reason for the limited research into the impact of prolonged exchange rate overvaluation in the U.K. is that in U.K. business schools, where the possibilities for interdisciplinary research are wider, corporate treasury management is usually taught as a minor option rather than a core subject³ and is treated as a peripheral topic for research. According to the ESRC (1994), the U.K. has more than 100 business schools employing 4100 academics. However, only a handful have published work on corporate treasury and currency risk management⁴. One of the most significant examples of persistent overvaluation is in sterling during the periods 1979-82 and 1990-92 (see **Charts 1.1 to 1.4**⁵). Despite the magnitude of U.K. overvaluations and the high degree of vulnerability of U.K. firms (on account of the high proportion of trade in U.K. GDP - see **Table 11.5**) to exchange risk, it is surprising that relatively little resources in the U.K. have been devoted to research this topic.

³This is revealed in a check of the syllabuses of the more selective U.K. business schools of Ashridge, City, Cambridge, Cranfield, Henley, London, Manchester and Oxford.

⁴ The only U.K. researchers who have published empirical research on corporate foreign exchange risk management are Belk at Loughborough, Holland at Glasgow and Collier and Davis at Cranfield. Cooper and Franks at London Business School have developed performance evaluation measures in corporate treasury management but none of the above has investigated the management problem for firms of persistent exchange rate overvaluation.

⁵See section 2.2 for a definition of overvaluation. All the PPP charts in this study are constructed with the average nominal exchange rates from 1973-1989 as the base year. Had an exchange rate in a single year such as 1978 been chosen as the base year, the extent of overvaluation of sterling would have been substantially greater. As far as U.K. firms are concerned, 1978 is the more relevant base year than the average for 1973-89, since it is the firms themselves which have to manage the discontinuity between 1978 and 1979-83.

In the charts, the thick line is the actual exchange rate (based on monthly averages) and the three thin lines represent a PPP band. When the actual exchange rate is above the band, the currency is overvalued, and vice versa. A band, rather than a precise PPP line is used, since a calculation of PPP rates always contains some sort of arbitrariness (see Swiss Bank Corporation 1994).

CHART 1.1
 OVERVALUATION IN STERLING AGAINST THE US\$, PPP & ACTUAL RATE,
 1980-93

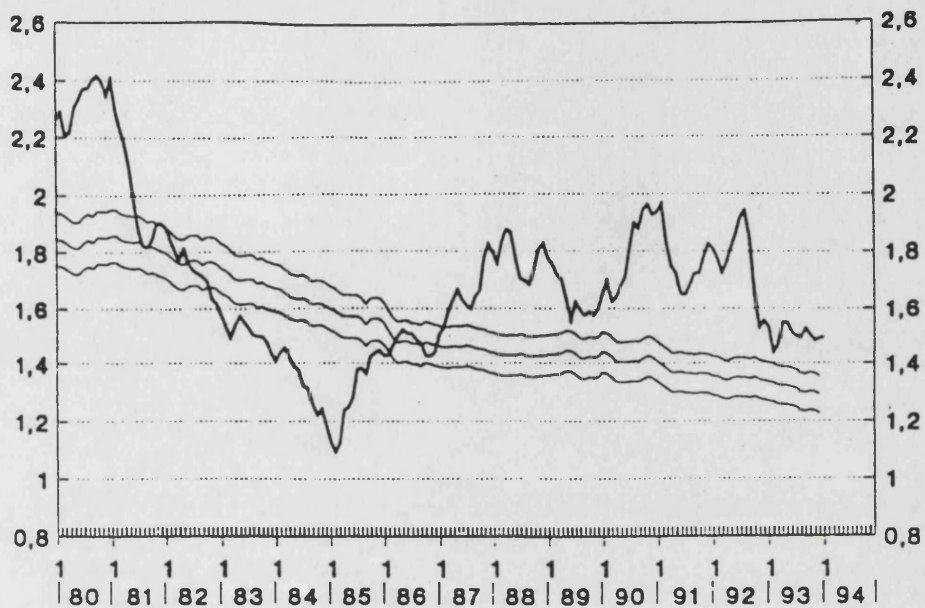


CHART 1.2
 OVERVALUATION IN STERLING AGAINST THE DM, PPP & ACTUAL RATE, 1980-93

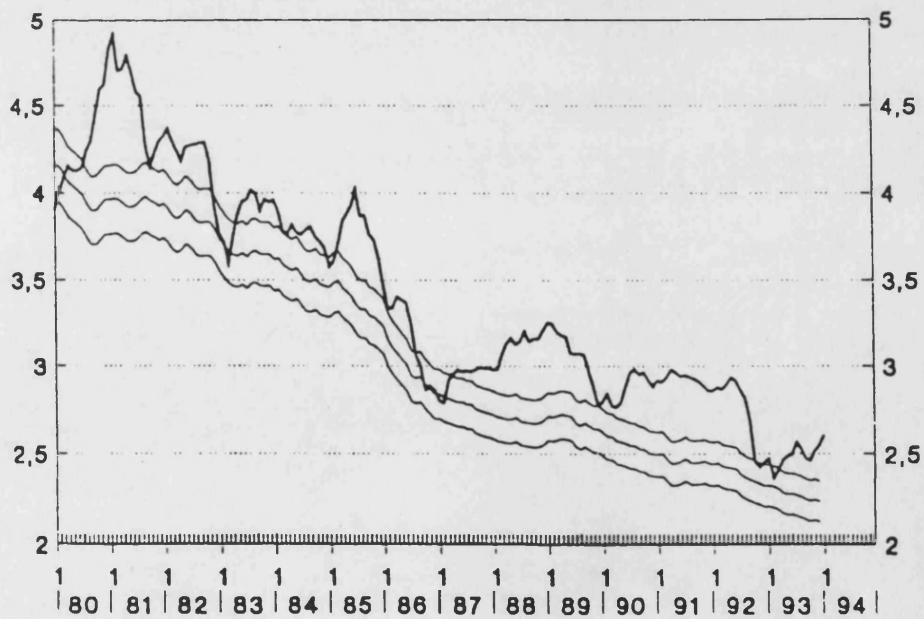


CHART 1.3
OVERVALUATION IN STERLING AGAINST THE FRFR, PPP & ACTUAL RATE,
1980-93

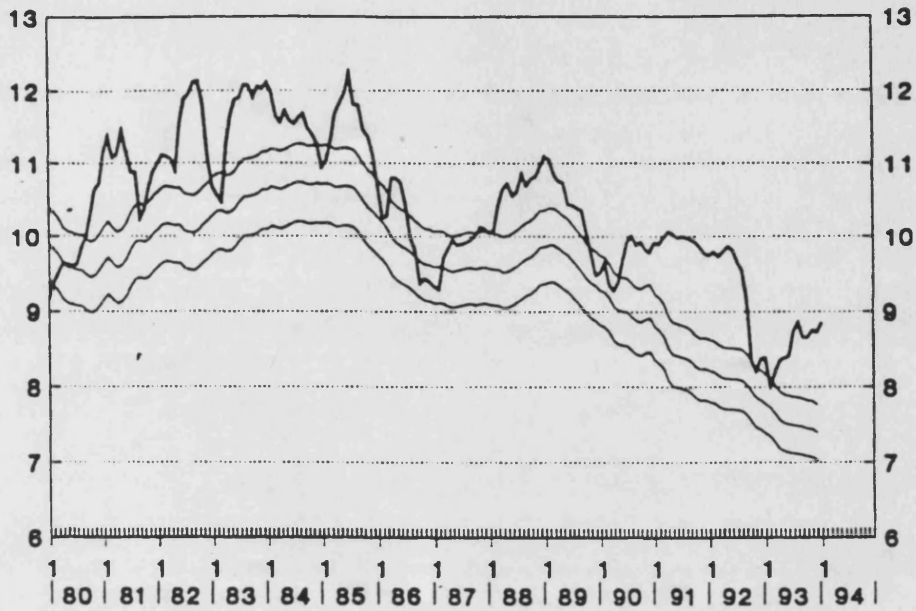


CHART 1.4
OVERVALUATION IN STERLING AGAINST THE YEN, PPP & ACTUAL RATE,
1980-93

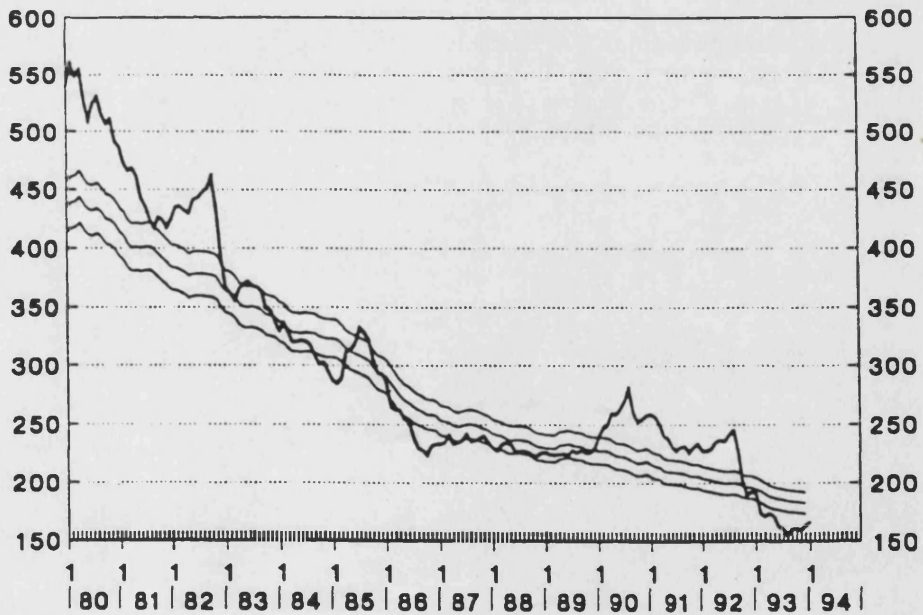


CHART 1.5
OVERVALUATION IN THE US\$ AGAINST THE YEN, PPP & ACTUAL RATE, 1980-93

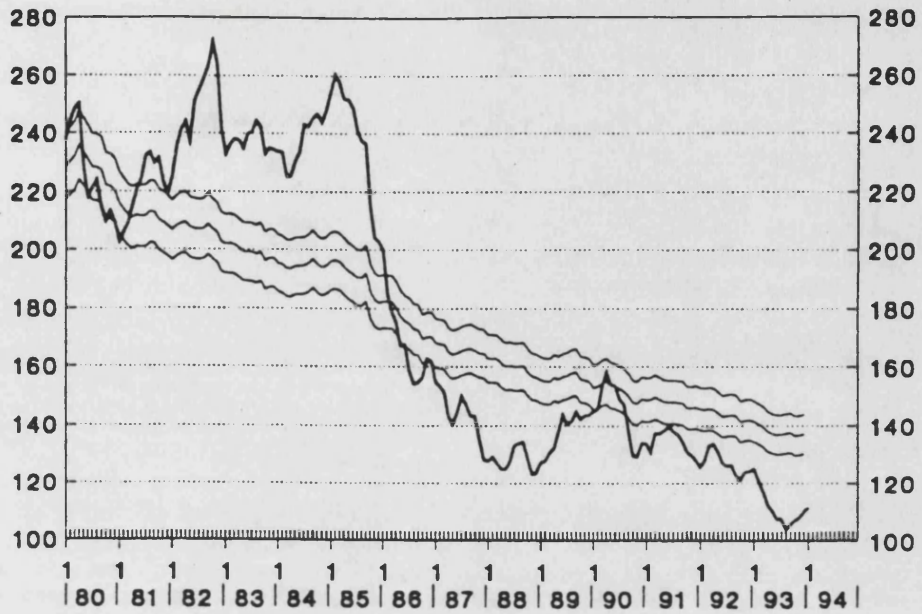
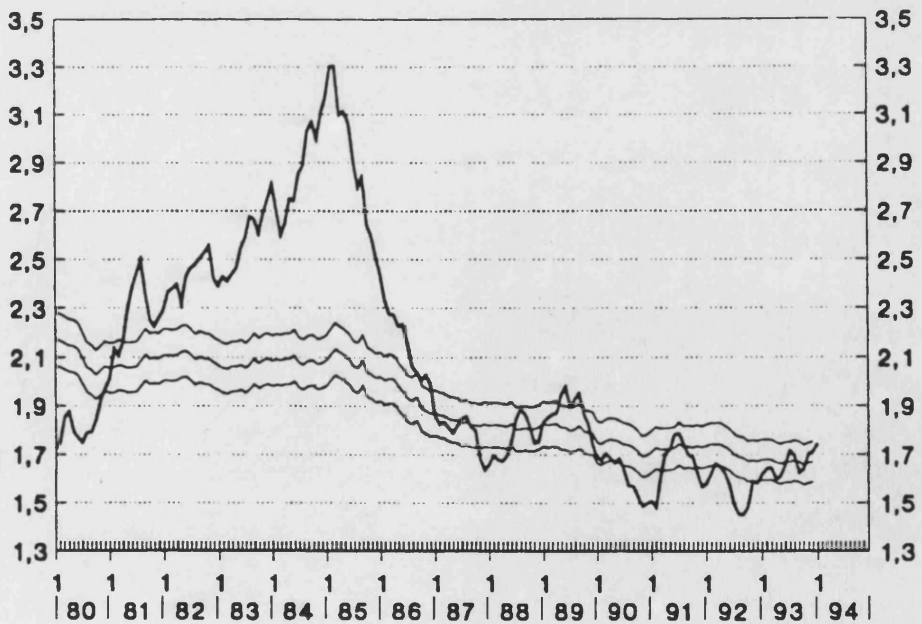


CHART 1.6
OVERVALUATION IN THE US\$ AGAINST THE DM, PPP & ACTUAL RATE, 1980-93



A third barrier to research is the difficulty in access to corporate treasurers and the natural reluctance of treasurers and other line managers to give out confidential information on their firms⁶.

Corporate treasury management is itself only a partial framework for the management of foreign exchange risk. The role of other actors in the process remains unexplored, particularly the role of public policy. This again is surprising, since government is a significant actor in the creation of exchange risk and in the formulation of economic policy to limit it.

1.1 Conventional orthodoxy.

The purpose of this section is merely to quote, at the practitioner level, on what the conventional orthodoxy is perceived to be⁷.

Empirical evidence⁸ shows that firms' perception of their exposures is biased and partial, and not only in relation to currency risk, but also total risk⁹. In managing currency risk, the bias is to use financial hedging, principally forward hedges. The question is why this bias exists, since this underlines the hypothesis that firms experience great difficulty in managing prolonged currency overvaluation.

In the training of treasurers, the Association of Corporate Treasurers uses the example of Laker Airways as an aberration (ACT "Currency Management Test 1" case study question 3). The Laker Airways example is also used in a key textbook (Shapiro

⁶For example, John Grout, treasurer of Cadbury-Schweppes, notified me of the currency hedging problem at MG. Grout had been finance director of BL at the time. However, Grout refused to comment on an MG case study which I prepared.

⁷The conventional orthodoxy at the academic level is summarized in Chapters 2 & 3. The definition of terms is given in section 2, Problem Identification.

⁸see Chapter 5 and Appendix 2.

⁹see Appendix 6.

1992:244-245), and also in Blake (1982:32-33). Laker Airways failed in 1982 following a sharp rise in the real dollar exchange rate against the pound. The impact on Laker was magnified by the fact that its costs were largely denominated in US\$ and its revenues in £.

All the analyses in the above sources have in common a similar theme. Laker Airways is concluded to be irrelevant as an example of currency risk contributing to corporate failure. The conclusion instead is that the airline was run by a risk-taking maverick in a business which is itself highly risky, and that Laker deserved to fail because it was badly managed and did not take the basic steps necessary to manage its currency risk. It is implicit that all Laker needed was a treasury which could have managed Laker's currency and interest rate risk.

The "basic steps" which would-be treasurers should answer is that the US\$-denominated costs for fuel and interest payments on leased aircraft should have been hedged against pounds by using forward and/or option contracts and that Laker, by not hedging, was taking enormous risks. The training of treasurers presents external hedging as a solution presumably because the treasury is responsible for external hedging.

Whilst most M.B.A. textbooks (eg. Shapiro 1992) stress the need for strategic hedging, why then are most firms not putting this into practice¹⁰ ? To implement strategic hedging, Walsh (1986:372-379) suggests a twofold strategy: to render traded products less tradable (via product differentiation), and to make non-tradable factors more tradable (via modifying sourcing practices, input mix and the location of production). The extent to which these are operational depends on the degree of tradability, price flexibility and substitutability of the firm's products and factors of production.

At the practical level, one purpose of this study is to demonstrate that it can be extremely

¹⁰see Belk & Glaum (1992:8).

difficult, if not impossible, for firms to take all, or any of the remedies indicated under the solution of strategic hedging. Whilst the ACT case on Laker acknowledges the need for strategic hedging by stating that means should have been found to increase US\$ revenues to match US\$ costs, such as by increasing the portion of tickets sold in the U.S., the problem is that such strategic adjustments are often not possible, yet they are presented as if they are. Further, the treasurer may not have any influence in the marketing function in order to implement strategic adjustments. Given this lack of influence, it is curious that the treasury literature should prescribe the goal that the currency denomination of costs and revenues should be matched, i.e. to create a "natural hedge":

"A simple method of reducing economic exposure is to change your currencies of cost to match the currency to which your business is exposed on its receivables. Foreign exchange losses on receivables will then be matched by foreign exchange gains on payables, and vice versa". (ACT1 1989:4601)

There is also no empirical evidence that firms put this into practice, even if they actually do have such a goal¹¹. Still less can it be presumed that firms would easily be able to secure such a match. Difficulties are likely to be encountered in sourcing from overseas suppliers in the same foreign currency, or in setting up manufacturing facilities in the same foreign currency.

What the conventional orthodoxy neglects is basically twofold. Firstly, the financial hedge can only buy time. When the hedge expires, it may only be possible to renew it at a much less favourable rate. Secondly, the purpose of buying time is to permit strategic adjustments to reduce vulnerability to currency risk. However, because the treasurer is not assigned responsibility for such strategic adjustments, the risk is that they may never be made. What is remarkable is that this observation has not been documented in the form of case-studies in a way which would permit trainee treasurers to learn from

¹¹Edelshain (see Appendix 2) found 61% of firms have a goal of matching but that only 41% find it effective !

the past hedging problems of companies which are not aberrant examples without a treasury, but which are typical household-name corporations which already have treasuries.

As an example of the conventional orthodoxy, it is notable that much of the literature on hedging in finance textbooks¹² has focused on external hedging, i.e. via the use of financial instruments. This focus is even more marked in specialist journals. Examples for practitioners are "Risk", "Corporate Finance", "The Treasurer", "Euromoney", etc. These are replete with a plethora of techniques and gimmicks¹³ for addressing foreign exchange risk with financial instruments. This focus partly reflects the readership to which the journals are addressed, namely treasurers, and partly the drive by banks to use innovativeness as a marketing tool¹⁴.

By contrast, there is a wide gap in the practical literature on internal strategic hedging of currency risk. Banks do not generally sell services in internal hedging and very few, if any, consultancies have skills in this area. Thus the advertising revenue necessary to finance journals on internal hedging for the practitioner is minor compared to that for external hedging. If it is the corporate strategists who are responsible for strategic

¹²For example, Brealey & Myers (1984:741) describe the case of a U.S. exporter and state:

"you can insure yourself against currency risk by selling the foreign currency forward...Insure or speculate? We generally vote for insurance. First, it makes life simpler for the firm. Second, it does not cost much. Third, the foreign exchange market seems reasonably efficient...Is there any way that (the company) can protect itself against exchange loss? Of course. It can borrow foreign currency against its receivables, sell the foreign currency spot, and invest the proceeds in (the home currency).

Such a simplistic propagation of a solution would not be worthy of repetition here were it not for the fact that Brealey & Myers is the leading textbook used in MBA courses in English-speaking universities.

¹³Banks were found to design new products, or differentiate existing ones, and then look afterwards if a need for them existed in corporate treasuries, rather than the other way round (Glaum & Belk 1992:74).

¹⁴Market innovation does not provide a solution to prolonged overvaluation - see section 2.

currency hedging, then literature on this subject should appear in journals addressed to them. However, such a literature has not developed. This is revealed in an examination of specialist journals such as "Long Range Planning". A possible reason is that currency hedging is perceived as only peripheral within the corporate strategy function.

In conclusion, the conventional orthodoxy is biased in focusing on what external hedging can do, rather than giving equal weight to what it cannot do, and this bias has been carried to extremes in designs for "optimizing" financial hedges. This bias has been fuelled at an academic level by the simplifications of neoclassical equilibrium (summarized in **Chapter 2**) and the approach of mathematical modelling. The result is that variables which may be crucial in the causal process may be omitted in the specification of the models. For example, the approach of the economics literature is to test statistical relationships between exchange rate changes (or proxies such as uncertainty) and trade volumes¹⁵ and to derive policy conclusions from such tests without regard to the causal process involved. The causal process needs to establish whether **individual** firms can manage exchange risk, either via their access to financial instruments (which may, or may not be granted), or via internal organizational and strategic adjustment (which firms may, or may not be able to make). It is argued in this thesis that failure to take full account of the causal process at the corporate level is completely the wrong approach.

¹⁵Such tests are listed in **Chapter 2** and are still being performed eg. Perée & Steinherr 1989, 1994. The 1994 test found that the break-up of the narrow bands of the ERM in 1992 led to higher exchange rate uncertainty which depressed foreign trade in 1993.

2. PROBLEM IDENTIFICATION

The problem of foreign exchange risk management has two distinct components. One concerns the setting up of treasury systems and strategies which reduce the firm's exposure to currency risk. The second problem is that even when all the standard systems are in place, the firm can still suffer spectacular losses by authorized or unauthorized speculation.

What this study seeks to demonstrate is that the effectiveness of treasury systems to manage currency risk can be extremely limited for small and large corporations alike. The above-mentioned speculation is only one component of the limited effectiveness. The other component is that even when all the standard¹⁶ treasury systems are in place - (the whole range of the treasury's activities is depicted in **Figures 1.1 & 1.2** and the place of the treasury in the finance function in **Figure 3.1**) - they have only a limited role in managing the currency exposures of the firm.

In essence, the problem is fivefold. One is that it is impossible to consistently forecast exchange rates correctly, so that hedging decisions are necessarily speculative. Second is that the onset and duration of currency misalignment can take the firm by surprise. Third is that whilst overvaluation can persist for as long as five years, for example, and although long-term forward contracts and currency swaps have become available in recent years, treasurers are reluctant to use them for fear of locking the company into an unfavourable exchange rate¹⁷. Fourth is that the corporate treasury is given

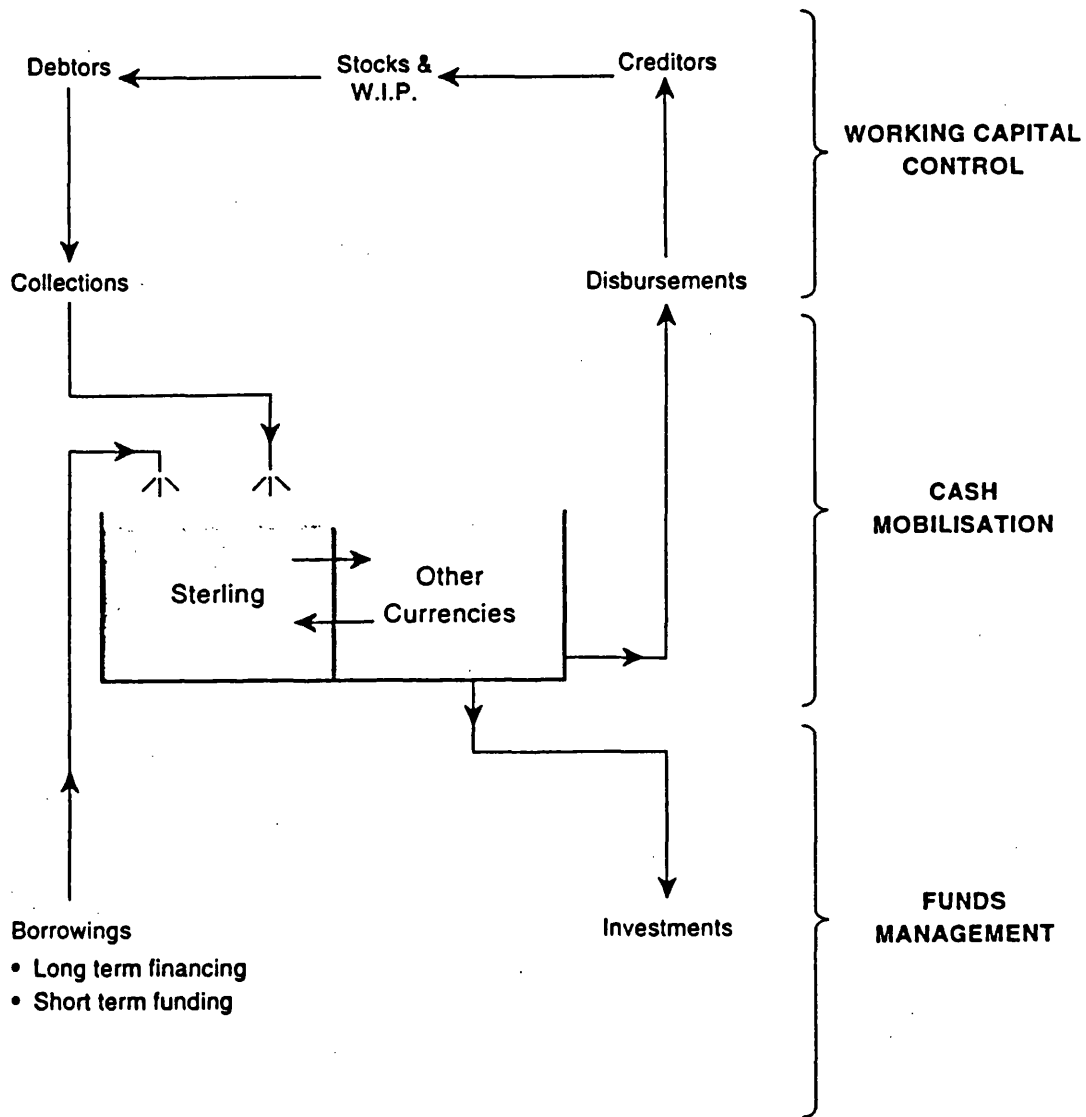
¹⁶The functions of the treasury in large corporations are similar across countries. See **Chapters 5 & 10**.

¹⁷See Hilley et al 1981. Harrison (interviewed 7.6.94) comments that whilst deciding to hedge over 2 years is a difficult decision to make, deciding on a 4-year time span is impossible. For example, ICI's treasury may borrow \$100 M for 10 years, but the treasury is forced to make the decision as the company needs the funds, but the treasury is not forced to hedge the position. ICI's treasury is generally not prepared to cover for 5 years because it is too big a "gamble" for the treasurer to take in view of the uncertainty of future US\$/£ rates and the uncertainty of ICI's future cash flows.

DIAGRAM 1.1
SCOPE OF TREASURY MANAGEMENT



DIAGRAM 1.2
FLOW DIAGRAM OF FUNCTIONS OF THE CORPORATE TREASURY



responsibility for managing currency risk, but the management of currency misalignment requires strategic hedging. However, the treasury has no control over product-market strategy¹⁸ and there may be no formal channels whereby it can even influence it. Even if the treasury did have control over corporate strategy, it is not at all clear that such control is sufficient to manage misalignment, since the adjustment of strategy is an unwieldy and uncertain instrument and its benefits accrue only after long time lags.

The fifth problem is to demonstrate that the above four problems for firms constitute a public policy problem. The concern for firms is that appropriate measures of managing currency risk depend on the cause of the currency risk. For currency misalignment, it is hypothesized that the cause is primarily government policy. If firms cannot manage misalignment via managing the symptoms, i.e. via external and internal hedging, then they need to act on the cause. However, if firms cannot act on the cause, then a real problem exists. It is hypothesized that this is also a public policy problem, since if the mass of firms cannot manage currency misalignment, then serious public policy concerns arise at industry and macroeconomic level. All that it is intended to do in this thesis is indicate the existence of such a problem and recommend a means of addressing it. Space does not permit an appraisal of whether governmental objectives could have been better achieved by other strategies which would not have produced currency overvaluation. Speculation of what other strategies and their consequences might be is the subject of a separate thesis. Instead, if firms cannot change government economic policy which produces currency overvaluation, then a last recourse would be for firms to attempt to influence international monetary arrangements, since the whole point of an international monetary system is to influence national policies (Williamson 1987:210). This is investigated in this thesis in terms of European monetary integration and the possibility for corporate treasuries to use the ECU in place of an overvalued domestic currency.

The problématique and its definitions are considered as follows:

¹⁸See Chapter 3, section 2.

2.1 Authorized speculation.

Returning to the problem of speculation, unauthorized¹⁹ speculation is a problem of management control and audit. This is outside the ambit of this study. Authorized speculation however is a key part of standard treasury practice. This is not because most corporate treasuries are acting as bank dealing rooms and engaged in outright speculation. According to the one U.K. survey (Touche Ross 1991), only 7% of U.K. companies run their treasuries as profit centres. Instead, the concern of this thesis arises because every decision on whether to hedge or not is a speculative decision²⁰. Even if the treasury is highly conservative and the decision is taken to hedge all net uncovered positions, this decision is itself a speculative one. As an example of the management problem involved, Dunhill Holdings gave a profits warning (FT 13.8.1993:15) that because it decided to hedge future income up to 30 months out, sterling profits for the ensuing two years would be £19 M and £13 M lower than without the hedge. This resulted from an unanticipated rise in the yen against sterling.

This problem can be distinguished from one in which hedging is authorized but the authorizers are not in a position to assess their downside risk arising from that hedge. For example, in 1991 Allied Domecq's²¹ treasury believed that the US\$ would fall during and after the Gulf War. It attempted to hedge this by the receipt of premium income from writing US\$ currency options. This strategy involved unlimited losses if the US\$ rose instead, which it did. The speculation cost Allied Domecq £147 M and it cost

¹⁹Royal Dutch/Shell announced (FT 22.2.1993:1) charges of £730 M as a result of unauthorized foreign exchange contracts which its 50 % owned Japanese affiliate had entered into. These losses constituted 82 % of the shareholder's equity in the affiliate. The parent charged £131 M against its own profits for the 1992 financial year. The chairman and president of the affiliate were forced to resign (Economist 27.2.93:96).

²⁰For example, a U.K. wine importer may hedge its imports for the year ahead, but if competing U.K. wine importers do not and the French franc falls significantly against sterling, the fall may be enough to erase the hedger's profit margin. An alternative interpretation, that hedgers are not speculators, is given in Jacque (1979).

²¹formerly Allied Lyons.

the Treasurer, the Finance Director and the Chief Executive Officer their jobs. This example of hedging (or speculation) can be categorized as operational risk.

2.2 Exchange rate misalignment and the "Misalignment Syndrome".

The above examples are merely illustrative of the difficulty in hedging exchange rate volatility²². The basis of this thesis is that the problem of hedging exchange rate misalignment is of a far greater magnitude. The concept of exchange rate misalignment was introduced into the literature in 1983 by Williamson and refined by Camen and Genberg (1990). Williamson's definition of misalignment is of "persistent departure of the exchange rate from its long-term equilibrium level" (1983:35). "Departure" refers to long-term swings of undervaluation or overvaluation in terms of the equilibrium level. The equilibrium level is defined in terms of a currency being at its purchasing power parity²³. This concept of misalignment can be distinguished from that of exchange rate volatility, in which currencies can move (mainly in nominal terms) according to random elements but do not display prolonged under- or overvaluation (i.e. in real terms).

The term "misalignment syndrome" is used in this thesis to denote a state of persistent overvaluation in which firms in the whole economy may be adversely affected, not just those in the tradable sector. The impact on the non-tradable sector can emerge as follows. Firstly, high real interest rates and an overvalued exchange rate can combine to cause a recession. The recession in turn reduces demand for firms in non-tradable and tradable sectors alike. Even if there is no recession, foreign firms may take advantage of the overvalued currency to penetrate the market. Governments should be concerned because of the risk of deindustrialization (Bigman & Leite 1978, Corden & Neary 1982) and hysteresis effects (i.e. the loss in output and employment is not reversed when the

²²Perée & Steinherr (1989) nevertheless assert that short-term volatility may entail only small costs to firms as it can usually be covered in financial markets up to one year out.

²³Doubts arise as to whether the definition of overvaluation in terms of purchasing power parity has any operational meaning. This is because of the difficulty in obtaining universal values of purchasing power parity. This problem makes it all the more necessary to critically survey the theory underlying currency risk. This is the task of Chapter 2.

exchange rate returns to an equilibrium level).

It might be argued that since misalignment can also refer to persistent undervaluation of the exchange rate, then it can also give firms a competitive advantage. This need not necessarily contradict the problem that misalignment presents a major management problem for firms. Firms can neither forecast the occurrence of undervaluation nor its duration²⁴. Secondly, the competitive advantage derived from undervaluation can yield windfall profits²⁵, but also mask the need to control costs. Reduced cost efficiency can exacerbate the shock when undervaluation reverts to overvaluation. Both under- and overvaluation thus present management problems. It can a priori be argued that overvaluation is likely to present the greater management problem, since this must be hedged. By contrast, if a firm speculates that undervaluation will persist, it can implement this speculation by not hedging. However, it must suffer the consequences if undervaluation suddenly ends and the firm's exposure remains unhedged. A company may be profitable when its home currency is undervalued, but it may not be when the currency is correctly valued and indeed it may be illiquid when the currency is overvalued. A significant problem is that a company's internal control systems may not be geared to give warning signals of the effects of changes in the real exchange rates. Even if they were, persistent undervaluation would still be a significant problem for the individual firm because of the problems of adjustment when the exchange rate environment worsens. This thesis concerns itself with overvaluation and the term misalignment is accordingly henceforth taken to refer to prolonged overvaluation.

The problem for firms, then, to which the literature has given scant attention, has the following components. How does overvaluation arise; how does it impact on individual firms; how effective are firms in managing it; does it lead to a loss in competitiveness

²⁴The theoretical basis for this is outlined in Chapter 2 (the Efficient Markets Hypothesis) and the empirical evidence in Chapter 4.

²⁵which is attractive to governments, not only in increasing the tax-take.

and to what extent; does the way in which overvaluation arises have a bearing on what firms should do to manage it, or should they attempt to prevent it occurring in the first place ?

2.3 Economic exposure.

A useful framework for assessing the impact of overvaluation on firms is that of economic exposure. The concept of economic exposure was first introduced into the literature in 1972 by Dufey. It is defined as the change in the present value of the firm's future cash flows as a result of unanticipated changes in real exchange rates. The definition of real exchange rates is important, since nominal exchange rates between two countries can remain constant, but if their inflation rates diverge, their real exchange rates have changed.

Real exchange rate changes can be calculated from the point of divergence of inflation rates, (or from a point in time such as the previous reporting date), thereby avoiding the methodological problem of calculating PPPs alluded to above. Changes in real exchange rates thus have an operational meaning, but it is another question as to whether firms are regularly monitoring real exchange rate changes.

Economic exposure arises because the firm cannot contractually fix, over sufficiently long periods of time, its sales level, price levels, or cost of inputs. These values are subject to change, and consequently so is the revenue and cost structure of the firm, as exchange rates change.

Two other exposures are conventionally classified in the finance literature (Wihlborg 1978). These are transaction exposure and translation exposure. Transaction exposure is a subset of economic exposure, since it refers to the firm's near-term cash flows. It is defined as the risk of changes in exchange rates between the time that a good is sold and the time that payment is received in foreign currency. Translation exposure refers to the

risk that when the results of foreign subsidiaries are consolidated into the parent's currency, translation gains or losses will arise between reporting dates.

It is generally acknowledged (Adler & Dumas 1984) that economic exposure is the dominant and most relevant exposure facing the firm. This is because of the difficulties in hedging future cash flows for long and unknown future periods. For transaction exposure, cash flows only have to be hedged for short periods into the future and for this, financial instruments (i.e. external hedging) are deemed effective.

2.4 Responsibility for internal hedging is diffused compared to external hedging.

Holland (1993:138) distinguishes four categories of hedging, and also reactive and proactive options in hedge decisions. This framework is adapted in Table 1.1 below:

TABLE 1.1
CATEGORIES OF HEDGING AGAINST CURRENCY RISK AND DECISION-TAKERS RESPONSIBLE FOR SUCH HEDGING

	STRATEGIC	INTERNAL OPERATIONAL	INTERNAL FINANCIAL	EXTERNAL
RESPONSE DECISIONS (REACTIVE)	React to recent real change by exploiting strategic flexibility	Alter marketing, production, sourcing.	Netting, Re invoicing, Leading & lagging, asset & liability management	Buy risk management products from banks
TAKEN BY	business units	business units/corp.strategy dept.	corporate treasury	corporate treasury
RESPONSIVENESS DECISIONS (PROACTIVE)	Install capacity to make real changes in strategy	Develop flexibility in operational decisions	Set up treasury systems	Establish close relationships with suppliers of risk management products
TAKEN BY	managing board, advised by corporate strategy dept.	corp.strategy dept.	corporate treasury	corporate treasury

Source: adapted and extended from Holland 1993.

Hedging against currency risk is conventionally subdivided into external and internal hedging. External hedging refers to the purchase of risk management products from banks and brokers. Internal hedging comprises internal financial hedging conducted by the treasury plus operational and strategic hedging. Responsibility for internal hedging tends to be blurred within the firm. From Table 1.1 it can be seen that decision-taking in internal hedging is blurred between the treasury, the corporate strategy department, the business divisions and the managing board. The treasury has no direct control over operational and strategic hedging. The treasury's influence may lie in providing currency forecasts to the business divisions from which they base their own decisions. To distinguish the type of internal hedging undertaken by the treasury, the term **internal financial hedging** is employed here.

Having made this distinction, it will be argued that the treasury's role as a locus of responsibility for managing exchange rate misalignment and economic exposure is limited. It will be demonstrated (Chapter 5 and the case studies) that internal financial hedging and external hedging can be inadequate to hedge away exchange rate misalignment, depending on the circumstances of individual firms. Furthermore, because responsibility for the other categories of internal hedging, namely operational and strategic hedging, is diffuse, such hedging against currency risk is not considered a core part of the relevant decision-takers' responsibilities. Instead, the decisions of the business divisions, corporate strategy department and managing board on business expansion and product-market strategy are taken on the basis of how the firm can create wealth by exploiting imperfections in national and international factor and product markets (Hymer 1960, Kindleberger 1969) via the ownership-specific advantages of their firm (Dunning 1981) and from cost reduction via internalization (Buckley & Casson 1976). To these decision-takers, internal hedging against currency risk is only a secondary consideration. More importantly, it is unclear who the practitioner is who is responsible for internal hedging. One purpose of this thesis is to demonstrate that responsibility is diffused throughout the firm. Furthermore, it is hypothesized, and investigated in the case studies, that because of the diffusion of responsibility, a coordinated approach to strategic and operational hedging tends to be lacking. The question is then raised that if the practitioner responsible for internal hedging cannot be identified, how is economic exposure managed and with what degree of effectiveness ?

2.5 Ineffectiveness of economic exposure management.

There is overwhelming empirical evidence²⁶ that economic exposure is not generally managed at all, particularly in smaller firms (Belk & Glaum 1990 for the U.K., Herrmann 1989 for Germany, Cezairli 1988 for the U.S.). Further, where attempts are made to manage it, survey responses from large corporations indicate that managers

²⁶see Appendix 2.

perceive that the methods used are ineffective (Belk & Glaum 1990 and Edelshain 1995 for the U.K., Glaum & Roth 1993 for Germany, Cezairli 1988 for the U.S.).

The Cezairli and Edelshain surveys are the only ones to have gathered evidence on managerial perceptions of the effectiveness of economic exposure management. Their results were aggregative. No attempt has been made so far to investigate for **individual** corporations how and why the management of economic exposure is ineffective.

2.6 Causes of exchange rate misalignment neglected.

All the existing empirical research has taken exchange rate volatility as an exogenous factor. It is treated as an exogenous given in all of the 12 empirical investigations mentioned above. For example, Walsh (1986:8-70) surveyed evidence that the international parity conditions of finance theory²⁷ tend to be violated and that this is a necessary condition for exchange risk to exist. However, despite using 62 pages to demonstrate the existence of violations of the parity conditions, the more relevant question of what are the principal underlying causes of the major violations is not addressed in Walsh's thesis. This is consistent with the partial analysis of finance theory. Walsh focused on how arbitrage possibilities arise, but this misses the point that it is the banks who tend to employ teams of arbitrageurs, not corporate treasuries. The kind of financial arbitrage that corporate treasurers of MNCs are involved in is the arbitrage of differing countries' tax systems to minimize their tax liability. However, the corporate treasury's role even in this is limited, since its function would simply be to implement the instructions of the Tax Manager, who would probably be a lawyer in the firm's legal department.

Thus it is not arbitrage possibilities in foreign exchange markets, but major violations, which are the relevant concern of firms. This is because it is the firms themselves who

²⁷these conditions are defined in Chapter 2 - Finance Theory

have to manage the violations. Walsh stated that the purpose of his investigation was (Walsh 1986:7):

"a description of the management of foreign exchange risk...(which) should lead to an improvement in the practice of foreign exchange risk management...(since) a complete catalogue of alternative tactics which may be used to manage foreign exchange risk is presented, based upon observed management practices".

The difficulty with this catalogue is that the tactics have differing degrees of effectiveness, depending on the type of exposure and the degree of exchange risk. In ignoring the underlying causes of the violations of the parity conditions and in basing the catalogue on observed management practice only, the catalogue cannot be complete.

What has been particularly neglected is the role of government policy in creating the violations of the international parity conditions. For example, Holland (1993:96) has added a taxonomy of imperfections to the international parity conditions and classifies government imposed distortions as one source of the imperfections. However, Holland perceives such distortions only in terms of a listing of currency regimes and of governmental regulation of financial markets. The exchange rate effects of government policy are not included in the analysis and exchange rate misalignment is not even mentioned.

The external environment facing the firm, particularly the public policy environment, cannot be ignored since there are linkages between government economic policy and the degree of exchange risk. Significantly, the degree of exchange risk facing firms varies across countries. Once it is demonstrated that firms' management of their economic exposure is ineffective, then the adverse impact on those firms which are unable to manage prolonged overvaluation can be seen to be directly the result of government policy. Only one of the empirical investigations so far (Blin et al. 1981) has sought to

draw public policy conclusions from corporate foreign exchange risk management²⁸. However, the Blin et al. study is flawed for three reasons. One is that it concentrated on transaction exposure, which firms can manage, and neglected economic exposure, which firms cannot easily manage. Secondly, it did not consider the problem of prolonged exchange rate overvaluation at all. It concerned itself instead with exchange rate volatility in a general sense. Thirdly, the Blin et al. investigation deliberately excluded small firms and addressed itself only to MNCs.

What is missing in the literature has two components. One is a failure to appreciate that responsibility for internal hedging is diffused within the firm. This has the consequence that exchange rate misalignment and the ensuing economic exposure is not effectively managed. The absence of a literature on strategic internal hedging can be explained in that it is a problem lying partly in the domain of organizational behaviour, partly in strategy and partly in finance, and researchers in the three disciplines do not usually interact. For example, the literature on the international parity conditions in finance - (developed in the early twentieth century eg. Cassel 1921) - has developed completely separately from the literature on imperfections in factor and product markets (developed much later by Dunning and the Reading school). Manufacturing firms create profits by exploiting (or arbitraging) such imperfections, but cannot easily, if at all, arbitrage major violations of the parity conditions in currency markets. Literature on how the firm should organize its resources such that it can exploit imperfections in factor and product markets, and in so doing also protect itself from violations in the international parity conditions, has yet to be developed.

A second component is the absence of an analysis of what an inability on the part of firms to manage exchange rate misalignment implies for public policy. Once these elements are included, the implications for public policy are likely to differ significantly from those of Blin et al.

²⁸The public policy implications are examined in Chapter 11. At the corporate level, Blin et al. concluded that firms are coping with exchange rate volatility.

2.7 Rival firms in rival states where the currency is not overvalued.

Chart 1.2 shows that sterling has exhibited significant periods of prolonged overvaluation against the DM. Currency overvaluation in the U.K. is associated with high real interest rates. The competitive significance of the impact of macroeconomic risk on the firm rests on two propositions.

Firstly, a problem for U.K. firms is that after interest costs, there is an inadequate margin of profit remaining compared to the situation in Germany (Eltis 1992:3). It might be argued that corporations with sophisticated treasuries could avoid high real interest rates in the U.K. by borrowing long term from capital markets. World long term real interest rates are broadly similar, as would be expected from the Fisher open condition²⁹. However, only a small number of corporations, i.e. the largest, with a name in capital markets and a good credit rating can borrow at the world level of real interest rates. Small and medium-sized enterprises do not borrow from capital markets but from banks with credit lines at floating exchange rates which can be withdrawn at any time.

Empirical evidence for the U.K. (CBI 1994) indicates that for new investment, many firms require internal rates of return two to three times higher than the nominal interest rate, or unrealistically short pay-back periods³⁰. This is important for U.K. firms for two reasons. One is that the much greater volatility in the pound's real exchange rate compared to the DM gives rise to risk premia on sterling-denominated assets which penalizes U.K. firms with floating-rate borrowings. Secondly, most financial instruments are of much shorter duration than the firm's product-market planning horizons.

The question of whether these hurdles are unrealistic needs to be balanced against

²⁹see Chapter 2, Chart 2.1, for an explanation of the Fisher open condition.

³⁰Evidence also exists (Miles 1993) that U.K. firms face excessively high required returns for longer-term projects.

whether firms are realistic in believing in a continuation of the boom-bust cycle in the U.K.³¹ In view of the experience of sterling overvaluation indicated in this thesis, firms would indeed be very short-termist if they were suddenly to reduce their hurdle rates in the belief that the U.K. boom-bust cycle had ended.

A second proposition on competitiveness is that the real profitability of corporations would be raised if fluctuations in production were reduced, yet the misalignment syndrome, by definition, produces fluctuations. Real fluctuations in capital expenditure (see U.K. volatility in **Chart 1.7**) and manufacturing output have been much less in Germany than in the U.K.

Thirdly, to increase profitability, it is necessary to reduce the productivity gap between the U.K. and its main competitors such as Germany. Raising investment (see **Chart 1.8**) is only part of the process of raising productivity³². However, the decision at corporate level on whether to invest would be favoured by prospects of relative security of market growth free from discontinuities such as currency misalignment. This is a background macroeconomic factor which favours German over U.K. firms.

2.8 Conclusion.

One of the hypotheses of this thesis is that exchange rate overvaluation has placed U.K. firms at a competitive disadvantage relative to their German competitors. U.K. exchange

³¹Misalignment can also occur under a fixed exchange rate regime, such as the overvaluation in the pound under Bretton Woods before the 1967 devaluation. See Appendix 4. The stop-go cycle in response to an exchange rate constraint was thus already characteristic of the 1960s (see Strange 1971).

³²This is underlined in Buxton et al. (1994), who assert that it is not only instability in monetary policy, but also structural economic weaknesses, that underlie the U.K.'s boom-bust cycles. Buxton et al. argue that in the late 1980s, the true source of inflationary pressure was not wage inflation or a loose monetary policy, but supply-side obstacles to sustained growth. These include decades of under-investment in productive capacity, in education and skills and in research. Buxton's hypothesis nevertheless lends further weight to the role of financial risk in limiting long-term investment, since during prolonged recessions associated with currency overvaluation, tax and corporate revenues are hit which in turn can lead to cuts in budgets for infrastructure and training.

rate policy, underpinned by the monetarist prescription of "leaving the exchange rate to the market" may thus appear irrational³³. One of the reasons why the U.K. government has been able to abjure responsibility for the exchange rate is because it derives support for such a stance from the theoretical base underlying finance and economics. One example is the Bank of England evidence to the House of Commons (1982) Treasury Committee that there is no evidence of a statistical link between exchange rate volatility and the volume and price of world trade and, by inference, growth. The public policy implication is that governments need not be concerned by exchange rate volatility. It is necessary to critically examine the methodology which can give rise to such a policy conclusion. This is the task of Chapter 2.

³³The premise that markets are always right is attacked in Strange (1985:17).

CHART 1.7
GROSS FIXED CAPITAL FORMATION, U.K. & GERMANY, 1980-94

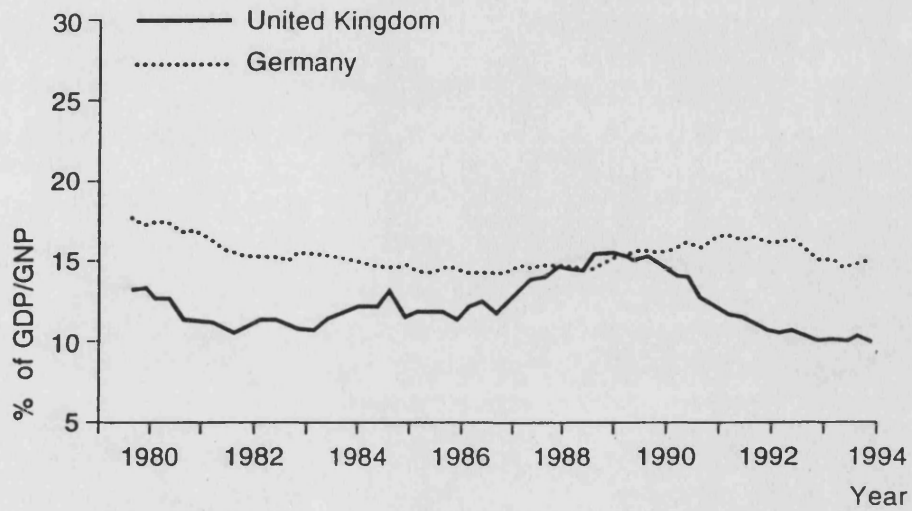
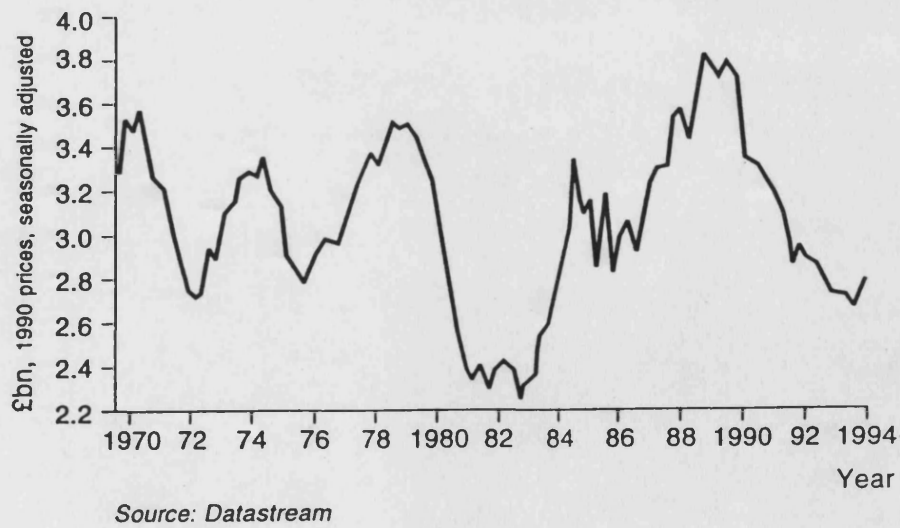


CHART 1.8
VOLATILITY IN U.K. CAPITAL EXPENDITURE IN MANUFACTURING 1970-94



CHAPTER TWO

THEORETICAL APPROACHES - NEOCLASSICAL

1. INTRODUCTION

This chapter argues that shortcomings in the theoretical approach of finance and economics has led to flawed policy conclusions such as that exchange rate volatility does not harm trade. These shortcomings are a macroeconomic bias and partial analysis. The shortcomings stem from neoclassical methodology.

Neoclassical methodology comprises the design of normative models and the application of positive theories. Normative models are concerned with prescription, i.e. what ought to happen, whereas positive theories are concerned with explanation and prediction, i.e. what does happen¹.

Firstly the basis of neoclassical methodology is described. Secondly, normative models in finance and economics relating to the corporate management of currency overvaluation are summarized. Thirdly, the relevance of positive theories, i.e. finance and economics, to deriving policy conclusions from currency overvaluation is investigated.

¹Strange (1988:11-12) presents an alternative interpretation of whether theories should prescribe or explain.

2. NEOCLASSICAL METHODOLOGY

2.1 Definition

The two key assumptions of neoclassical methodology are that individuals (and firms) maximize utility (and profits) and that the market mechanism automatically equates prices and marginal utilities such that an efficient allocation of resources is achieved. Markets are assumed to be clear and a state of equilibrium exists.

Scapens (1989/5) notes that the core elements of neoclassical economics are embedded in positive theories of accounting and that the methodology of investigation into corporate behavior has tended to be decision models based on the profit maximization postulate. These include linear programming models and capital decision models, for example.

Two broad types of normative approaches to corporate foreign exchange risk management can be discerned. The economics literature has focused on the firm's strategic response to movements in exchange rates that alter relative prices. By contrast, the finance literature has focused on the design of securities and hedging operations with which the firm can lay off foreign exchange risk. Thus whereas models in economics focus on internal means of hedging via the firm's strategic responses, finance models focus on external means of laying off risk in financial markets. The finance literature also argues that the hedging and borrowing decisions of the firm are inextricably linked. It might be argued that finance models are only peripheral to the problem of economic exposure management. This is because the finance literature focuses on external hedging and because economic exposure management is primarily based on internal i.e. strategic hedging. The rationale for strategic hedging is to prevent advantage from currency overvaluation being exploited by competitors.

2.2 Normative models in finance.

A model which uses the neoclassical approach of linear programming is that of Lietaer. Lietaer (1971:8), in building a model of hedging against devaluation, notes that the problem for the firm contains three elements: expected costs, strategy risk, and

operational constraints. The objective is to find a combination of financing and hedging strategy that minimizes expected costs and strategy risk and does not violate any of the operational constraints.

TABLE 2.1
NEOCLASSICAL APPROACH OF COST MINIMIZATION APPLIED TO HEDGING (LIETAER 1971)

Expected costs to be minimized	Strategy risk to be minimized	Operational constraints to be minimized
<ul style="list-style-type: none"> - the expense arising out of all the financing and hedging operations, - and the expected devaluation loss. 	<ul style="list-style-type: none"> - the risk generated from relying on future financing and hedging possibilities whose costs are not known with certainty, - and risk arising from misestimating the devaluation. 	<ul style="list-style-type: none"> - the financial requirements for each period in the planning horizon, - constraints such as the availability of loans and swaps - legal constraints.

Lietaer's approach is one of minimizing hedging cost given the constraints of existing hedging instruments. Such an approach is the opposite of this thesis, which seeks to show that existing hedging instruments are quite unsatisfactory as a solution to currency misalignment. Further, in noting that Lietaer acknowledges that strategic hedging is necessary, this study seeks to show examples of firms that are not conducting such strategic management of economic exposure and seeks to explain why not.

An appropriate method to demonstrate this is case-study of the decision-making process of individual firms. However, the use of normative models which incorporate strategic hedging of economic exposure is subject to severe constraints.

Naumann-Etienne (1977) concluded that modelling economic exposure requires firstly, a knowledge of the sourcing and sales characteristics of the operation and secondly, the ability to analyze the effect of unanticipated exchange rate changes on future cash flows by including the ability to include anticipatory measures of competitors' reactions.

Without including the above, simulations of the impact of currency changes on a firm's balance sheet and profit and loss account will be inadequate. Such a simulation is exemplified by the textile company Dawson International. This company calculated that

in the six months to September 30 1992, profits would have been £400,000 higher if the US\$/£ exchange rate had remained at the average of the previous year (FT 25.11.92/24). This simulation was based on calculations derived from crude simplifications of Dawson International's business, namely that 50% of its sales are made in the U.S., 25% are exported to other parts of Europe and Japan and one-third of the remaining U.K. business is tourist related. The inadequacy of such simulations can be seen in the following. Firstly, the simplifications are only assumptions. They do not include factors other than exchange rate changes, such as recession in a particular market, changes in fashion, changes in marketing/distribution etc. which might offset the impact of an exchange rate change. Secondly, it is impossible to know in advance what competitors' reactions and counter-reactions would be to exchange rate changes².

Walsh (1986) attempted to overcome this problem by regression analysis³ in which he assumes that data for competitors' sales revenue and prices can be obtained⁴. Regression

²Mello & Parsons (1992:1) note that most models take the firm's exposure as given and ignore changes in the competitive position created by exchange rate movements and the firm's strategic responses. They have created a model in which the firm's ability to exploit its competitive position depends upon the degree to which its flexibility is matched with an appropriate hedging strategy.

³The mechanics of the regression approach are as follows. Assume a U.K. company whose costs are solely in £ and whose sales are split equally between the U.K. and Germany. Assume that the real £/DM exchange rate rises from the start of year 2. Cash flows from period 0 for the year are assumed given. Because of the rise in the real exchange rate, cash flows for year 2 are likely to be lower than for year 1, assuming all other variables remain the same. Net economic exposure for year 2 can be calculated as follows:

$$\text{Cash flow in year 1 minus cash flow in year 2} = \text{change in cash flow} \times \text{PV factor} = \text{PV}$$

Garner and Shapiro (1984) suggest a regression which does not involve sensitivity analysis to competitor reactions. They regress the firm's cash flows on the average exchange rate prevailing in the past period. The rationale is that variations in a firm's domestic currency cash flows are correlated with variations in the nominal exchange rate. Of the output of the regression, a high correlation coefficient indicates high exposure of the firm to exchange rate changes. In the regression, R squared measures the percentage of total cash flow variability that is due to the currency fluctuations. A low R squared will indicate that currency fluctuations are not an important determinant of overall firm risk even whilst domestic currency cash flows are highly correlated with exchange rate changes.

⁴In reality, it is impossible to know what competitors' cost structures are, which would permit sales revenue and profits to be calculated under different exchange rate assumptions.

analysis as a means of quantifying the impact of economic exposure rests on the assumption that, although the firm's economic exposure cannot be directly observed, it is constant. In reality, a firm is likely to change its exposure if exchange rates change. Capel (1991) notes that if there are adjustment costs, the firm's optimal strategy in each period depends on its previous decisions. Exposure is thus variable and therefore a regression does not yield a reliable measure for it.

Given that regressions will not give a good approximation to economic exposure (Capel 1991), it is necessary to map out the possible reactions and strategies that the firm and its competitors are likely to pursue. For this purpose, models can be of use. However, not one, but several possible reaction patterns may be plausible. Each reaction pattern might also proceed under several different exchange rate scenarios. Thus to obtain a true picture of economic exposure requires a vast range of calculations based on what may be incorrect assumptions concerning the price elasticity of demand, incorrect judgements regarding the pricing flexibility of competitors and incorrect forecasts of future inflation and future real exchange rate changes.

To illustrate in practical terms the problems in calculating economic exposure, assume a firm comprises several business units in several countries. Then for each business unit, calculating the potential impact of exchange rate changes must incorporate the effects on export sales, local sales where the product is in competition with imports, costs of imported inputs, and local inputs with an import content as well as the general level of demand. All these factors will in time have an effect on the capital employed in each of the business units which will also be a factor in the level of future earnings.

Whilst it is possible to assign a value to each of these items for a given point in time and derive a NPV for each business unit in separate currency zones, the resulting number will be of little practical use to the corporate treasurer since it will be dependent on the use of a large number of forecast variables which, as noted above, may not be predictable.

An additional methodological problem exists. The sensitivity of the PV of future

cashflows to real exchange rate changes is a nebulous concept. An attempt to correlate a certain current market value with a future random variable (exchange rates) is ill-conceived (Bromwich 1977, Bromwich & Wells 1983). The unknowns are so significant, such as competitors' future reactions, that the unknowns in turn determine the significance of exchange rate changes on future cashflows.

2.2.1 Conclusion.

Given the above problems, economic exposure cannot be usefully modelled.

2.3 Normative models in economics.

An advantage of economics models of foreign exchange risk management over finance models is that economics models incorporate various aspects of the theory of the firm, such as market structure and output and pricing policies (eg. Krugman 1987, Baldwin 1988 and Baldwin & Krugman 1989). The economics models motivate hedging by price adjustment ("exchange rate pass-through" -see Goldstein 1978, Feenstra 1987) in response to exchange rate changes. The extent of price adjustment, if any, depends upon market structure ("pricing-to-market") and firms' own flexibility ("adjustment costs"). Assume a firm has a monopolistic position in an export market and it faces strong demand and an inability to increase production to meet that demand. The prescription for its pricing policy, given depreciation of its domestic currency, is not to cut export prices. The lower exchange rate benefits the firm via an increased profit margin. The impact of exchange rate changes is therefore felt via changes in profits. It is the impact on profits that provides a decision rule on whether to hedge externally or not.

The effects of exchange rate volatility on firm entry and exit behaviour have been modelled by Dixit (1989). In Dixit's model, higher levels of volatility lead to lower incidence of entry.

The effects of exchange rate uncertainty on investment have been modelled by Pindyck (1988). It is concluded that uncertainty leads to less investment in risk neutral models which assume imperfect competition and asymmetric costs of adjustment.

The effects of exchange rate fluctuations on foreign direct investment have been modelled by Weinblatt & Lipsey (1980), Itagaki (1981) and Cushman (1985). From his model, Itagaki concluded that an expected devaluation of home currency always increases the incentive for foreign production and sale of final goods. Other things being equal, then by the same logic, an expected overvaluation should have the opposite effect. However, such a conclusion cannot be drawn because the key point in the definition of economic exposure is that the real exchange rate appreciation is unanticipated.

Cushman has drawn up four models of direct investment assuming various relations between foreign and domestic production. In these models, the direct effect of risk-adjusted expected real foreign currency appreciation lowers foreign capital cost. This would normally be expected to stimulate inward direct investment. However, Cushman found that when costs of other inputs are also affected, induced productivity changes or output price changes may offset the direct effect and thereby reduce inward direct investment. The result of exchange rate changes is thus inconclusive.

The impact of exchange rate volatility on the capacity decisions of firms has been modelled by Bell & Campa (1991). Bell & Campa, in assuming risk neutrality, imperfect competition and infinite costs of adjustment, find a positive relationship between exchange rate uncertainty and capacity for an export-oriented plant in the U.S. chemical industry. The authors define uncertainty as comprising three elements - exchange rate volatility, market demand and supply costs. They acknowledge however, that these elements can work in opposite directions, again leading to an inconclusive result.

2.4 Conclusions.

Dornbusch (1988) has outlined three separate directions of research which models should take, yet he eventually concludes that "case studies seem a suitable approach" (p.307). Whilst the models summarized above can provide useful benchmarks for the purpose of formulating hypotheses, a drawback is that the results of the models depend essentially on how they are formulated.

Normative economic models such as Baldwin & Krugman can be useful in predicting in what direction prices may change in response to exchange rate changes, subject to constraints. However, the models are not able to provide evidence that firms are not able to hedge a rise in the real exchange rate by corresponding rises in export prices in foreign currency terms. For this, it is necessary to gather empirical data. The models can predict that it is a theoretical possibility that such an outcome can occur, but cannot predict more than this.

Given the limitations of models, the approach of modelling will be eschewed in this thesis. Sections 3 and 4 investigate whether positive theories which are concerned with explanation and prediction constitute a more suitable approach for addressing the research problématique.

3. FINANCE THEORY.

3.1 Contribution of finance theory to corporate currency risk management.

The contribution of finance theory to the topic of foreign exchange risk management is threefold. One is concerned with the properties of markets, such as the efficiency of foreign exchange markets (Burt, Kaen & Booth 1977, Frenkel & Mussa 1980, Bergstrand 1983⁵) and the integration of capital and money markets across countries (Fama & Farber 1978, Aliber 1978, Levich 1985, Akhtar 1987). The conclusion of this literature is that financial price equilibrium exists in developed countries, given highly mobile capital. However, the evidence for a major equilibrium in the financial parity relations is problematic. One reason is that the PPP condition does not hold in the short and medium term and that other imperfections exist which inhibit full integration. For example, the Fisher condition is rejected for equity markets (Holland 1993:116) and the unbiased forward rate hypothesis is disputed (Cornell 1977), but owing to risk aversion, not to foreign exchange market inefficiency⁶.

Second is portfolio theory and the prescription of risk management via diversification (Markowitz 1952, Aliber 1970, Hughes, Logue & Sweeney 1975, Frankel 1979, Soenen 1979, Kohlhagen 1977 & 1981, Errunza & Senbet 1981, Siegel 1983)⁷. Given market efficiency, the Efficient Markets Hypothesis (Fama 1970) holds that firms cannot forecast exchange rates and systematically beat the market by attempting to do so. Given this limitation, then modern portfolio theory (MPT) indicates a strategy of managing exchange risk via the diversification of a corporation's businesses across currency zones. The general conclusion of portfolio theorists is that international diversification improves a portfolio's risk-return characteristics by enlarging the available asset set and by diversifying business cycle risks. However, there are costs in obtaining these portfolio

⁵Bergstrand concludes that the foreign exchange market is no less efficient than domestic money and capital markets.

⁶Inefficiencies in financial markets are summarized in Wadwhani (1987).

⁷This is a different literature from that which views imperfections in factor and product markets as the determinant of FDI. See Dunning & Robson (1987) and Dunning (1990).

gains through the creation of exposure to political and foreign exchange risk. Thus foreign exchange risk still has to be managed even with diversification.

A third contribution of finance theory is a long literature on optimal financing and investment decision rules for corporations and investors. These decision rules in corporations are classified (Naumann-Etienne 1974, Aliber 1978b, 1978c) into the strategic investment, financing and dividend decisions which have the overall goal of maximizing shareholder wealth.

3.2 Neoclassical equilibrium and imperfections to equilibrium.

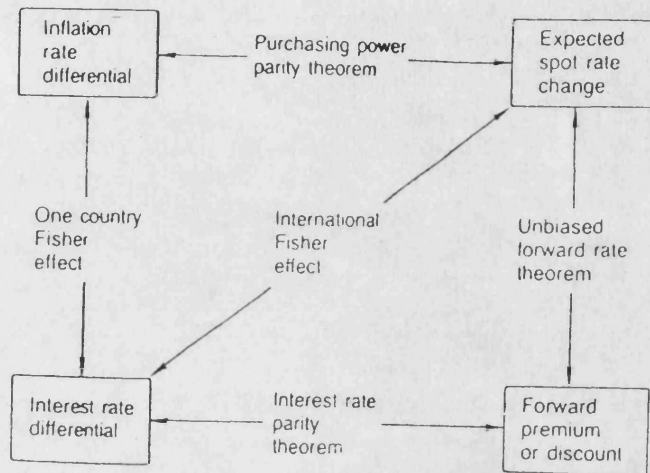
Under the neoclassical equilibrium conditions (see Diagram 2.1), certain decision areas are deemed irrelevant (Senbet 1979) for the firm to make. These are decisions on capital structure, dividends, cash or working capital management, and currency and interest rate risk management. Regarding currency risk management decisions, the theoretical underpinnings which deem these as irrelevant are surveyed in Dufey & Srinivasulu (1983). They summarize the neoclassical equilibrium position as follows:

"Foreign exchange risk does not exist: even if it exists, it need not be hedged; even if it is to be hedged, corporations need not hedge it"

Foreign exchange risk does not exist when all the parity conditions (Diagram 2.1) hold (Giddy 1976,1977). However, in the real world, the assumptions underlying the parity conditions do not hold (Solnik 1978) and the parity conditions are themselves interdependent.

Under neoclassical equilibrium, hedging decisions are irrelevant for reasons stemming from the Capital Asset Pricing Model (CAPM) and Efficient Markets Hypothesis (EMH). Applying the CAPM (Sharpe 1964), it is systematic foreign exchange risk that matters, since unsystematic exchange risk can be diversified away by investors in the process of constructing their security portfolios. The principle of the CAPM is that for any asset, a direct relationship exists between risk and expected return. Thus if hedging reduces the risk of a firm, shareholders will require a lower return. On this basis, it is unnecessary

DIAGRAM 2.1
 NEOCLASSICAL EQUILIBRIUM RELATIONSHIP BETWEEN THE INTEREST RATE,
 INFLATION RATE AND EXCHANGE RATES



for the firm to hedge risk since the change in risk profile will be offset by an identical change in its expected return. Secondly, the EMH indicates that a treasurer engaged in selective hedging will not be able to earn consistent foreign exchange profits in excess of those due to risk taking.

Against the theoretical precept that hedging decisions are irrelevant is the observation that firms are indeed concerned by greater variability in net cashflow from exchange risk, since this increases the risk of bankruptcy. Secondly, a treasurer may seek to hedge not because of a desire for excess returns, but to achieve a desired level of risk/return with which the company's management feels comfortable.

Under neoclassical equilibrium, it is asserted that individuals, not corporations, should hedge currency risk, since reducing risks at the corporate level which are diversifiable at the portfolio level does not benefit stockholders (Makin 1978, Jacquillat & Solnik 1978). This conclusion stems firstly, from the extension of the Modigliani-Miller theorem internationally (Feiger & Jacquillat 1981), such that shareholders themselves hedge via diversification (Grubel 1968, Levy & Sarnat 1970). If firms hedge and this reduces the risk of the firm, shareholders will require a lower return, which invalidates the need to hedge. Secondly, modern portfolio theory (MPT) states that exchange rate fluctuations in earnings are desirable for individual investors and that corporations should not hedge them (Feiger & Jacquillat 1981). In line with MPT, Senbet (1979) demonstrates that hedging by individual investors is valid if they are to bear systematic, i.e. non-diversifiable risk. Diversifiable risks are not "priced" by sophisticated investors and hence do not affect the stock market's required rates of return.

Empirical evidence on capital market imperfections and agency costs however, suggests that firms, not individuals, are better placed to hedge currency risk. Capital market imperfections include bankruptcy risk from currency volatility; institutional barriers to individuals (as opposed to firms) to use hedging instruments; the possibility that firms can mediate risks internally (Cohn & Pringle 1973); and information asymmetries in favour of the firm rather than the investor (Lee & Sachdeva 1977).

3.3 Conclusions.

The concept of agency costs recognizes the existence of other claimants to the assets of the firm, namely managers, workers and government. Finance theory is not interested in the utility functions of these groups and their interests are excluded from financial models, which are primarily shareholder or capital-oriented.

Given imperfections to neoclassical equilibrium, the policy recommendation is that firms should hedge their cashflows and shareholders should hedge their consumption bundles. Thus finance theory has long accepted that imperfections to the neoclassical equilibrium exist, and the firm is viewed as either passively accepting market forces, or alternatively reacting to market imperfections⁸ (Holland 1993:9). This view contrasts with that of the international business literature which perceives the firm as proactive and able to fashion the economic environment to its own requirements (Williamson 1975, Strange et al 1991, Strange 1992). The relevant question as far as prolonged currency overvaluation is concerned is to what extent MNCs can act proactively to avoid overvaluation. A bias in finance theory exists in explaining the causes of overvaluation in terms of deviations from the parity conditions, but at the same time ignoring the causes of the deviations. For example, Dince & Umoh (1981:25) write:

"We are not going to review here the ... causes of instability in foreign exchange. We take it as given that the relationships between domestic inflation rates and foreign exchange rates cause fluctuations. Given the environment in which the MNC must operate, what are the techniques available to protect against those risks ?"

Such an approach fails totally to capture that the currency risk environment facing the firm differs markedly across countries and that this environment must not be taken as given but explained. For example, if prolonged overvaluation is caused by government policy, then corporate-government diplomacy is a core means of protecting against the risk of overvaluation.

⁸Imperfections present an opportunity for firms to exploit them via opportunistic cash and working capital management decisions.

In view of cross-country differences in the currency environment, it would appear that increased financial market integration would be desirable for corporations. With integration, corporate capital costs in a country, and consequently return requirements in real terms, will increasingly adjust to the movements in the global interest rate level. By contrast, under financial market segmentation, prolonged currency overvaluation based on high real interest rates raises a corporation's capital costs and the price of its exports in foreign currency terms. With a higher level of financial integration, improved opportunities will exist for corporations to allocate risks without concern for currency risk. Further, a greater likelihood of increased welfare would arise because corporations would be better able to achieve their desired trade-off between risk and expected return (Fukao & Hanazaki 1987).

The current degree of financial market integration⁹ must be seen in relation to the yardsticks for such integration.

After Oxelheim (1990:4,5,37), four definitions can be distinguished. These delineate differing levels of integration. The highest form is (1) total financial integration, which in turn consists of (2) direct and (3) indirect financial integration. Monetary integration (4) is the integration of foreign exchange markets under a single currency.

Oxelheim defines direct financial integration as capital market integration. Fukao & Hanazaki (1987) conclude that the international capital market has become highly integrated in the sense that a tendency exists for a convergence of real interest rates,

⁹see Oxelheim (1990). Financial market integration can in turn be divided into two elements: integration in capital markets and in foreign exchange markets. The distinction arises from the fact that capital markets deal in the allocation of financial claims over time, whereas the foreign exchange market is engaged in trading differing national means of payment.

Dufey and Giddy (1978:5-7) suggest that a separate component of capital markets can be distinguished, namely the international money market. This is **not** the foreign exchange market, but the Eurocurrency market and its linkages with other segments of national markets for credit. They emphasise that the foreign exchange market is not part of the international money market because the foreign exchange market is not a market for credit. For convenience, the remainder of this study will keep to the conventional distinction within financial markets between the capital and the foreign exchange market.

especially at the long end.

TABLE 2.2
HIERARCHY OF FINANCIAL INTEGRATION

TYPE OF FINANCIAL INTEGRATION	DEFINITION	NECESSARY CHARACTERISTICS
1. Total financial integration	Direct and Indirect financial integration.	see below
2. Direct financial integration	Capital market integration.	This exists when the investor can expect the same risk-adjusted returns on financial securities in different markets.
3. Indirect financial integration	This refers to a situation in which the return on an investment in one country is directly linked to the return on investments in other countries. The indirect linkage is via other markets, namely the product market and foreign exchange market.	Perfectly integrated goods and foreign exchange markets. Highly coordinated economic policy such that the gap between political risk premia is zero.
4. Monetary integration	Single currency	Foreign exchange markets are integrated by way of a single currency.

However, they note that as real interest rates are not unambiguously defined, the extent of this convergence is difficult to assess, i.e. a condition for real interest rate convergence is for exchange rates to follow PPP, but they do not necessarily do so.

Indirect financial integration exists with perfectly integrated goods and foreign exchange markets together with such a highly coordinated economic policy that the gap between political risk premia is zero. Clearly no such conditions exist. Even **within** individual highly integrated countries, such as the U.S., monetary integration does not necessarily indicate that financial integration exists (Oxelheim 1990:5).

Across countries, global total financial integration is decreasing (Oxelheim 1990:344). This is because under total financial integration, the "expected real interest rate" should be the same globally, but since the 1980s it has displayed marked divergence for OECD countries compared to the 1970s. Oxelheim ascribes one cause as increased deviation in PPPs between currencies. This can ensue from the autonomy of governmental interest rate policies. This is illustrated in continued divergence in interest rates across countries by more than can be explained by risk premia, exchange rate expectations and "normal" transactions costs.

A result is the associated increasing disintegration between goods markets. Whereas prices in financial markets adjust rapidly to new information and may overshoot (Dornbusch 1976, Frankel & Meese 1987), goods markets are slow to adjust (Wilson & Takacs 1980, Bordo 1980). Increasing foreign exchange risk premia (reflecting uncertainty on the course of divergent governmental policies) helps to explain the decline in total financial integration. However, this does not exclude the possibility that global capital market integration has increased. **Thus indirect segmentation of both capital and product markets can occur by way of foreign exchange markets (Oxelheim 1990:5).**

The potential role of the foreign exchange market in the indirect segmentation of both capital and product markets is only latent and has awaited other trends to develop to become powerful. Four major features of the foreign exchange market stand out since the commencement of floating in 1973. These are the increase in both nominal and real volatility (Kenen & Rodrik 1986); the increase in size of the market (Bank of England 1986, 1989, 1992); the change in the principal actors involved¹⁰; and the change in the justification of the market's usage from being one based on trade flows to one driven by speculation¹¹ (Bank of England 1989), fuelled by chartism¹². The foreign exchange market has become essentially an inter-bank market in which the underlying trade

¹⁰Up until the abandonment of floating, the principal actors were central banks. These have been superseded by private actors such as banks and brokers.

¹¹illustrated in "bandwagon" effects and overshooting (Dornbusch 1976).

¹²See Goodman 1982:135, Curcio & Goodhart 1992.

transactions of industrial corporations play a relatively insignificant role.

4. ECONOMICS.

One of the hypotheses examined in this thesis is that exchange rate overvaluation has placed U.K. firms at a competitive disadvantage relative to their German competitors. One problem is defining competitiveness. As both governments and corporations would a priori acknowledge the desirability of a competitive exchange rate, what is the link between the exchange rate and competitiveness? What factors other than the exchange rate determines whether an individual corporation is competitive or not? What is the best approach for analyzing these other factors? Are they properly captured using neoclassical methodology? What economic evidence exists to presume that governments and corporations should prefer a fixed over a floating currency regime? What theoretical evidence can shed light on the link between exchange regime and whether a currency is under- or overvalued? Finally, if corporations are dissatisfied with floating, what does theory specify on how exchange regimes can be changed?

The contribution of relevant aspects of economic theory is examined under the following headings:

- 4.1 Exchange rates and competitiveness.
- 4.2 Rationale for investigating exchange risk and the individual corporation.
- 4.3 Evidence on macroeconomic performance under fixed and floating regimes.
- 4.4 Microeconomic performance under fixed and floating regimes.
- 4.5 Tools for measuring currency overvaluation.
- 4.6 Is currency overvaluation more likely under fixed or floating regime?
- 4.7 Monetary integration to preclude overvaluation.
- 4.8 Theory on how exchange regimes change.

4.1 Exchange rates and competitiveness.

Economics defines the competitiveness of an economy in terms of unit labour costs adjusted for exchange rate changes. Thus economics would explain changes in a country's

competitiveness in terms of variables bearing on unit labour costs and on exchange rates. Variables bearing on unit labour costs include the structure and pattern of wage bargaining and an economy's propensity to invest. Both can be strongly influenced by government policy. Variables bearing on real exchange rates include exchange regime and macroeconomic policy and these are strongly influenced or determined by government policy.

At the public policy level, yet another definition of economic competitiveness is prevalent. This is that a country is perceived as competitive if it is in balance of payments equilibrium (Muellbauer 1992, Bergsten et al 1992). A chronic balance of payments deficit, for example, would impose a constraint on economic policy. Such a constraint might be deflation to remove the deficit. Thus, under this definition of competitiveness, unit labour costs adjusted for exchange rates can be perceived as a factor contributing to uncompetitiveness and thus the overall balance of payments position.

From the standpoint of corporations, the economics definition of competitiveness has severe limitations. Firstly, it fails to take into account that the aggregate competitiveness of an economy is the sum of the competitiveness of its individual firms. At firm level, unit labour costs are only one element in a firm's ability to compete in world markets. Market structure is likely to be significant (see Geroski & Jacquemin 1985 in the European context). Multinationals can, a priori, also offset an adverse trend in unit labour costs in the home country by locating production abroad.

4.1.1 Conclusion.

No generally accepted definition of competitiveness appears to exist and that competitiveness means different things to different actors¹³. The economics definition based on unit labour costs adjusted for exchange rates essentially emphasizes the importance of price in competitiveness. Economic theory has little to say about non-price

¹³Krugman (1994) has outlined public policy implications arising from differences between trade and inter-firm competition. However, Krugman did not make reference to the role of real exchange rate changes, or to exchange rate policy.

factors - (which reflects the bias in the literature toward macro- rather than microeconomics) - except for one non-price factor. This is market structure. Market structure in economics is a theoretical analysis of price and output decisions under monopoly, imperfect and perfect competition (see models in section 2.3). Empirical research on how market structure affects specific firms in specific industries has not generally been conducted in economics but in the international business literature.

4.2 Rationale for investigating exchange risk and the individual corporation.

Foreign exchange risk is conventionally defined as the additional riskiness in financial outcomes that results when economic activity is conducted in markets where the currency of determination differs from that of the home market. A completely different research method from that of the models listed in Section 2.3 is macroeconomic. This is to assess the impact of additional risk by testing whether or not a causal link exists between exchange rate volatility and variables such as world trade volumes. The principal examples of this method are listed in Table 2.3.

TABLE 2.3
ECONOMETRIC TESTS OF THE IMPACT OF EXCHANGE RATE VOLATILITY

Exchange rate changes regressed against:	Authors	Findings
trade volumes between selected countries	IMF 1984, Akhtar & Hilton 1984, Cushman 1986, Gosling 1986, Gagnon 1989	no negative impact on trade volumes detected
ditto	Farrell et al. 1983, Kenen & Rodrik 1986, Gros 1987, de Grauwe & de Bellefroid 1987, de Grauwe 1988, Pereč & Steinherr 1994, Bini Smaghi 1990	adverse effects detected
output of three U.S. industries	Ceglowski & Hilton 1987	output is adversely affected in two industries, but not in the third, which is nontradables
employment in three sectors of U.S. economy	Branson & Love 1988	U.S. employment declined with US\$ appreciation 1980-85
U.S. auto competitiveness	Richardson 1988	trends in competitiveness are consistent with changes in exchange rates 1976-85
U.S. corporate profits	Moens 1993	U.S. profits rose when the US\$ was overvalued

A critique of the differing specifications of tests that have been conducted did not emerge until 1990 when Bini Smaghi demonstrated misspecification and erroneous results. A further example of such misspecification is Moens' (1993) finding that U.S. corporate profits rose when the US\$ was overvalued in the early 1980s. This is the only test which uses data on individual firms.

A methodological problem with Moens' study is that the exchange rate may influence operating profits through several channels and within different time runs. Since the sample consisted of 50 large U.S. MNCs, it can be expected that a significant part of profits were derived outside the U.S. However, changes in the US\$ value of foreign currency profits would only be reported according to the MNC's reporting conventions and thus need not be instantaneous. Changes in the real US\$ exchange rate operate

through more subtle, indirect and slower channels. It is these channels that need to be investigated.

Bean (1988) used a crude econometric model of the U.K. economy to investigate the impact of sterling appreciation 1978-81 on U.K. trade and found some evidence of hysteresis effects. However, this evidence is tentative, since it is at aggregate macroeconomic level, not at corporate level. Bean concluded that "further empirical work, most probably at an industrial level, would be fruitful" (p.64). This begs the question as to why Bean did not investigate the problem at the level of U.K. firms in the first place. The Moens, Branson & Love, Richardson and Ceglowski & Hilton studies are mis-specified in using data at the industry level since currency risk is not managed at industry level.

4.2.1 Conclusion.

The limitations of the regressions in Table 2.3 are that they do not prove causality and secondly, that they are open to misspecification¹⁴. Thirdly, because they do not include the decision-making processes and constraints that individual firms face in managing foreign exchange risk, their conclusions reflect the partial nature of their analysis.

¹⁴For example, a correlation exists between the share of investment in GNP and GNP growth (De Long & Summers 1991). It would be more appropriate to examine the impact of currency overvaluation on investment at corporate level, (which this thesis seeks to do), than the impact of exchange rate volatility on world trade volumes.

4.3 Evidence on macroeconomic performance under fixed and floating regimes.

One reason why governments should prefer one type of exchange regime over another is the prospect of a better macroeconomic performance. A methodological problem in comparing performance under two regimes is that different time periods need to be compared. Thus to test whether ten years in the EMS has brought about a better macroeconomic performance than if the member states had stayed with floating is a counterfactual proposition. However, because obtaining a better macroeconomic performance was a primary justification for moving to a system of managed exchange rates in the form of the EMS in 1979, the decades before and after 1979 can be compared to investigate whether a better macroeconomic performance did result. The result is that anti-inflationary policies have acted to suppress economic growth (Melitz 1988).

De Grauwe (1989) has surveyed empirical evidence comparing the two decades 1963-1983 for OECD economies. His finding is that macroeconomic performance has been much worse under floating than under fixed exchange rates, but that this worse performance has not necessarily been caused by floating. In the decade following the switch to floating in 1973, at a global level inflation was higher (IMF 1984), GNP growth was slower¹⁵ and payments imbalances were much greater than in the prior decade under fixed exchange rates.

However, a better macroeconomic performance under fixed than floating rates could be coincidental without specification and testing of the channels whereby exchange rate fixity can lead to a better macroeconomic performance. These channels are detailed in De Grauwe (1989:223-228). In summary, at a global level, higher inflation was not caused by the switch to a floating regime; that world trade has expanded under floating exchange rates; that there was no evidence of a causal link between floating and the slowdown in global GNP growth; and that floating does permit payments imbalances to be reduced. Thus economic theory cannot answer why macroeconomic performance has been worse under floating than under a fixed regime.

¹⁵falling from an average 4.4% p.a. between 1960 - 1973 to an average 1.7 % between 1973 - 1986.

One reason for the lack of an explanation is that the evidence cited above on macroeconomic indicators is at an OECD level, not at a country level. Some countries, notably the U.S. and U.K., allowed inflation to rise dramatically in the 1970s. Thus a more complete explanation of regime performance lies in policy analysis and the priorities given by individual governments to managing the various components of macroeconomic performance¹⁶.

The policy-making context in which exchange regimes are selected cannot be ignored, nor can the role of individual firms in the adjustment process under floating exchange rates. The performance indicators on which the above evidence is based are all macroeconomic. Yet the major impact of floating exchange rates on an economy would be transmitted via the mass of individual firms. How firms react, or are unable to react, to exchange rate changes is an aspect of microeconomic performance. Yet economic theory has little to contribute in this subject other than the theory of the firm and the models deriving from it, which were summarized in section 2.3 above. The definition of competitiveness in economics refers to the competitiveness of economies, not firms. How then can the competitiveness of the firm be reconciled with the definition in economics based on exchange rates and unit labour costs? The concept of economic exposure is an indicator of the competitiveness of the firm, but this is a much wider definition than the economics definition.

4.3.1 Conclusion.

From the above, the economic evidence on whether flexible exchange rates are preferable to a regime of fixed exchange rates is inconclusive.

¹⁶For example, if macroeconomic performance under the ERM is to be assessed, an appropriate yardstick is against the performance of two proponents of floating, namely the U.S. and U.K. in the years following 1979. ERM member-states, in linking their currencies to the DM, prioritized lower inflation over higher growth in the short-term in the belief that this would lead to more robust growth in the long-term.

4.4 Microeconomic performance under fixed and floating regimes.

Methodological difficulties similar to those noted in the previous section make a comparison between corporate performance under fixed and floating regimes in different time periods, or between different countries in the same period, subject to serious qualification. Marin (1982) has nevertheless investigated whether the policy of fixing the Austrian schilling to the DM has led to a better performance at corporate level. Marin outlined three principal channels whereby a hard currency regime¹⁷ could serve as a discipline on Austrian firms and thereby improve Austrian macroeconomic performance.

These channels are firstly, that pay bargains are struck with the expectation of relatively low inflation rates continuing. This in turn reinforces the competitive position of firms. By contrast, given the devaluation policy in the soft currency countries, employers may be more willing to grant inflationary pay claims on the basis that the higher inflation will be offset by depreciation. Rising wage costs lead to price increases, which fuel higher pay demands. This in turn exerts pressure for further depreciation.

Second, the framework of a hard currency policy forces firms in exposed sectors to raise their productivity. With an appreciating currency, firms have an incentive to cut costs. By contrast, a devaluation policy to match past losses in price competitiveness does not have such a property.

Third, an appreciating currency in nominal terms encourages firms to reduce the price sensitivity of their products by focusing on quality segments of the market. This need to focus on quality can have three effects. Quality products can command a higher price and can generate a higher profit margin; the need for quality encourages innovation; innovation in turn encourages investment; and the higher profit margin can provide a

¹⁷A hard currency regime is defined as one in which the government uses a monetary discipline to maintain a low rate of inflation and attempts to avoid imported inflation by allowing the exchange rate to appreciate.

By contrast, in a soft currency regime, the government allows the exchange rate to weaken to offset an unfavourable inflation differential with hard currency countries.

surplus to finance the investment.

4.4.1 Conclusions.

The virtuous circle model stemming from a monetary discipline has three main features. At a macroeconomic level, exchange rate firmness can act as an instrument to stabilize the price level since nominal currency appreciation can reduce the risk of importing inflation. Second, exchange rate firmness can be a precondition of a successful incomes policy. Third, devaluations are unlikely to secure significant improvements in a country's trade balance unless a country's import and export elasticities are high, but under such conditions, the adverse effects of currency overvaluation would be reinforced.

Research is needed to answer whether U.K. firms would display the same benefits from a monetary discipline that Marin found for the sample of Austrian firms.

4.5 Tools for measuring currency overvaluation.

Methods to measure whether a currency is overvalued or not are surveyed in Artus (1978). The purchasing power parity (PPP) and fixed equilibrium exchange rate (FEER) are the principal methods.

In its simple form, PPP holds that exchange rates adjust to reflect differential inflation rates. The mechanism is via arbitrage in goods markets. Thus the parity condition states that the correct exchange rate between any two countries is the one which equalizes the price of the same traded item in both countries. As a measuring rod of whether a currency is overvalued or not, the PPP method has three main drawbacks from the standpoint of the individual firm (see Balassa 1964, Officer 1976, Dornbusch 1980, Darby 1980). First is that the result is heavily biased by the choice of base year, second that the inflation index may not be appropriate for particular firms and third that a PPP measure is between only two currencies, whereas a firm may trade with several currency areas. For example, the pound may be overvalued against the DM, but not against the dollar, because the dollar itself may be grossly undervalued. By using real effective exchange rates¹⁸, the U.K. government would be theoretically correct to declare that the pound is not overvalued.

Regarding the bias stemming from the choice of base year chosen, the conventional answer is to select a base year when the exchange rate of the country being analyzed is in equilibrium. This is taken to mean that exchange rate which results in a balanced current account. The asset market approach to exchange rate determination (see Section 4.6.3) suggests that such an equilibrium exchange rate can, in the case of the U.K. at least, only be determined with great difficulty and caution, if at all.

There are other reasons to expect that prices across countries would not be equalized as PPP theory would suggest. Market structure, differing consumption patterns and the ease of goods arbitrage are relevant considerations. Whilst Manzur (1993:20) found that the

¹⁸Real effective exchange rates are obtained statistically by weighting exchange rate movements according to international trade and correcting for inflation relativities.

PPP hypothesis holds in the long-run - which he defines as 5 years - firms cannot wait for exchange rates to return to equilibrium values in the long-run as they may be bankrupted in the short-run.

To make up for these shortcomings of PPP calculations, an alternative method is that of Fixed Equilibrium Exchange Rates (FEER)(Williamson 1983). These use macroeconomic models to estimate the exchange rate at which the economy can return the trade account into rough balance in the medium term. Whilst much depends on the validity of the macroeconomic models used, the U.K. National Institute of Economic and Social Research calculates, under the FEER method, that the pound was overvalued during its ERM membership in the years 1990-92 by much more than that calculated under the PPP measure.

4.5.1 Conclusion.

The PPP and FEER methods are sufficiently ambiguous to permit their conclusions to be manipulated to suit the purposes of the user.

4.6 Is currency overvaluation more likely under fixed or floating regimes?

4.6.1 Overvaluation under Fixed Exchange Rates.

The main question is whether the coordination rules under which the regime operates are sufficiently flexible to permit downward exchange rate adjustment which could prevent overvaluation from occurring. A second question is the effectiveness of exchange rate fixity as a discipline on cost pressures, which in turn may preclude the need for downward exchange rate adjustment.

4.6.2 Conclusion.

To the extent that a fixed exchange regime may contain cost pressures better than a floating regime, then overvaluation may be precluded under the fixed regime.

4.6.3 Overvaluation under Flexible Exchange Rates.

Theory¹⁹ had, up to 1985, asserted that one of the main advantages of a flexible regime was that exchange rates would be correctly valued, since they would reflect market expectations of the real economy. This was because imbalances in trade flows were assumed to determine changes in exchange rates.

The claim that a flexible regime would permit exchange rates to be correctly valued was underpinned by monetarist theory. Monetarists argue that interest rate volatility is the converse of exchange rate volatility, and that to maintain fixed exchange rates implies volatile interest rates which can be even more damaging to the corporation than volatile exchange rates (Friedman 1970, Bergstrand 1983, Wood 1988). Evidence for the EMS up to 1988 (Taylor & Artis 1988) contradicts this.

Theoretical expectations were quickly proven wrong once floating commenced (Williamson 1985), except for one - that floating would enhance the power of monetary policy. A new theoretical paradigm was required to explain how persistent overvaluation can exist under floating exchange rates.

¹⁹Lanyi 1969, Kouri 1977, Balassa 1980.

A forerunner of a new paradigm was the Mundell-Fleming model (Fleming 1962)²⁰. This shows that exchange rates could be determined not only by trade flows, but also by capital flows. Second it shows that floating could permit countries to insulate themselves to demand or inflation shocks in the rest of the world. This was because the model assumed (unrealistically - see section 3.3) rapid adjustment of trade flows to exchange rate changes, whereas the asset market comes into equilibrium only slowly with less than perfect capital mobility (Black 1977:28). This unrealistic assumption indicates that the model did not take into account the empirical behavior of corporations. Thus to show that the exchange rate could become grossly overvalued in a floating regime through capital inflows had to wait until new literature emerged.

This became known as the asset market approach to exchange rate determination. Previous theory assumed that trade flows were the dominant influence in exchange rate determination and that capital movements were merely accommodating to offset current account imbalances. By contrast, the asset market approach recognizes that currencies are held for their own intrinsic properties. The trade balance depends on competitiveness and the exchange rate depends on the interaction between goods and asset markets. Thus a currency can be demanded on the basis of its asset properties and irrespective of whether the trade balance reflects the competitiveness of the economy, i.e. capital account flows can be autonomous. The attractiveness of an asset depends on its supply and by the distribution of world wealth - underlining the U.S. power of seigniorage. The asset market approach accordingly offers a channel whereby current account imbalances may influence exchange rates.

Under a floating exchange regime, where there are no rules on international coordination of macroeconomic indicators such as interest rates, there is clearly nothing preventing an

²⁰Previous models of exchange rate determination assumed capital immobility. This was in keeping with the post-war order in which controls on capital flows were an accepted feature at Bretton Woods. The Mundell-Fleming model shows that with less than perfect capital mobility, a deviation of the domestic interest rate from the foreign interest rate will set up an inward or outward flow of capital to reduce the differential. In the case of perfect capital mobility, the model showed that the domestic and foreign interest rates will be driven to equality. The net capital inflow plus the surplus in the current account of the balance of payments determines either the exchange rate (under a floating regime) or the amount of reserve gain or loss due to intervention (under a pegged regime).

individual government from raising its real interest rate differential as high as it likes (see White and Woodbury 1980).

4.6.4 Conclusion.

It is possible for a country to experience prolonged overvaluation in its exchange rate under both fixed and floating regimes. However, economic theory cannot answer whether and why overvaluation might occur under both regimes.

4.7 Monetary integration to preclude currency overvaluation.

Monetary integration in the E.U. is unlikely to be durable if existing currencies are maintained in a fixed exchange rate regime²¹(Gros & Thygesen 1991). Whilst a hard currency regime serves as a monetary discipline²², neither the existence of a fixed exchange rate regime nor a monetary discipline under floating are a sufficient condition to prevent prolonged overvaluation²³. The existence of a floating exchange rate regime in the U.K. and in the U.S. during the imposition of a monetarist discipline was not the only factor permissive of overvaluation, since overvaluation had occurred under fixed regimes in both the U.S. and U.K. Thus an additional factor is missing which might explain why governments should choose one particular exchange regime over another, and in particular why in the E.U., governments should proceed beyond economic integration to monetary integration. Economic theory cannot answer either of these questions, since the E.U. is not an optimal currency area²⁴. Given high labour immobility, the case for proceeding to a single currency is whether the benefits of a credible monetary policy exceed the risks deriving from the absence of both Mundell's (1961) criterion of high factor mobility²⁵ and from the absence of a fiscal union. In theory, countries that have similar economic structures may benefit from monetary union but only when fiscal union is in place to cushion adverse effects stemming from labour

²¹see Chapter 10.

²²The advantages and disadvantages of a hard currency regime are summarized in section 4.4.

²³From a policy point of view, however, there is a major difference between them. Under fixed exchange rates, the impact on firms of overvaluation emerged gradually in the 1960s in the U.K. General agreement in the IMF that a fundamental misalignment existed in the value of sterling permitted its 10% devaluation in 1967. Under floating rates however, the impact can emerge suddenly and more pervasively.

²⁴However, Sherman et al.(1990) make the case for monetary integration from the imperative of economic integration via the Single Market. The Single Market can increase the benefits of a single currency in the E.U., complicate national monetary control and threaten the viability of the EMS.

Bofinger (1994) argues Europe is an optimal currency area.

²⁵The potential for countries to join a monetary union depends on the extent of real exchange rate changes that may be necessary between them if they formed a monetary union. If they enjoy a high degree of factor mobility, unemployment would not pose a significant problem and there would be no need for individual countries to have their own exchange rate instrument.

immobility.

4.7.1 Conclusions.

Given the risks, it needs to be recognized that proceeding to a single currency is a political objective and the case needs to be made that the political benefits exceed the costs²⁶.

²⁶see Goodhart (1990) for the economic costs and benefits.

4.8 Theory on how exchange regimes change.

Economics can point to reasons why exchange regimes might change. For example, the balance of advantages and disadvantages of fixed versus floating regimes can change depending on changes in the external environment and other factors. Or the theory itself which underlies exchange rate determination might change to more accurately reflect changes in the external environment.

The question to be addressed here is whether economic theory was important in setting up the EMS and in decisions taken in favour of monetary integration in the E.U.

Conventional explanations of exchange rate determination in the international economics textbooks (for example Dornbusch 1980:175-215, Winters 1991:397-432) all take the exchange regime as given. Two problems exist with the literature on exchange rate determination. One is that the models can be, and often are, wrong. Second is that economics neglects how the given regimes come into existence. These two criticisms are considered in turn.

Firstly, taking merely the example of floating exchange rate models, the empirical validity of such models is aptly put by MacDonald & Taylor (1989:xvii):

"Although the very early, flexible-price monetary models of the exchange rate, which assume continuous purchasing power parity, were quickly replaced by a sticky-price version which allows temporary movements in the real exchange rate, or overshooting, the degree of volatility in real exchange rates over the period (1973-1988) still provides a major puzzle. Moreover, other puzzles such as the failure of exchange rate models to outperform simple random walks in forecast tests, the very weak mean-reverting tendencies of deviations from purchasing power parity, and the empirical failure of the efficient markets hypothesis for many foreign exchange markets are all phenomena that have yet to be satisfactorily explained."

Secondly, the neglect in the economics literature of how exchange regimes change may be explained in that the transition from one regime to another represents a discontinuity. Such discontinuities are not readily applicable to model-building or general theorizing. Economics can explain the breakdown of the Bretton Woods regime in terms of several

economic variables, such as the higher inflation and structural balance of payments deficits in the U.S. A more complete explanation would include a whole range of political, as well as economic factors, in the switch to floating in 1973. It can broadly be concluded that the decision was taken on the expectation that the benefits of floating to the actors concerned would exceed the underlying costs of maintaining the fixed exchange regime. This focus on the actors and their relative gains and losses is an entirely different methodology from that of economics. If this methodology is used, then the unexplained "puzzles" of MacDonald & Taylor are not "puzzles" at all.

Yet Williamson (1985) argues that economic theorists did play a role in the switch to floating because of their overwhelming advocacy of floating. However, they did not play a role in the regime change back to exchange rate fixity in the form of the EMS. Williamson (1985:57) argues that the role of the new theories in the movement to set up the EMS was marginal; neither the asset market view nor the Nurske (1944) vicious circle hypothesis seems to have played a central role in motivating the adoption or form of the EMS. Instead, the EMS is more an instructive political response to crises than conditioned by a coherent body of theory.

4.8.1 Conclusion.

Economic theory says little about the process of regime change²⁷.

4.9 Conclusions.

The economics definition of competitiveness is partial; macroeconomic approaches to investigating the relationship between exchange rate volatility and trade volumes are flawed; macroeconomic performance is found to be worse under floating than under a fixed regime; a fixed regime can act as a discipline on firms and thereby assist in creating a better microeconomic performance than under floating; tools for measuring currency overvaluation are ambiguous; economic theory cannot answer whether and why overvaluation might occur under fixed and floating regimes; economic theory cannot

²⁷That economics omits a full understanding of power in international affairs has long been put forward by Strange (1970, 1972, 1982b).

answer why countries in the E.U. should proceed to monetary integration; economic theory cannot explain how corporate actors can change exchange regime.

5. CONCLUSIONS.

The neoclassical methodology of economics and finance with its emphasis on equilibrium states is one of the factors sustaining the policy conclusion that exchange rates should be left to market forces and that governments should not attempt to "buck the market". The questions that are asked, such as econometric relationships between exchange rate volatility and trade volumes, are framed by what the researchers themselves believe can be answered within the limits of their disciplines..

The question then is to specify what theoretical approaches other than neoclassical can usefully be applied. The three contributions of finance theory noted in section 3 are incomplete in the following ways. The treasurer is given the task of managing the currency risk of the corporation, but decisions on "portfolio diversification" of product-market strategy are taken by other individuals in the corporation. Similarly, finance theory offers a rule of thumb in the form of economic exposure, but it does not provide a blueprint of how it should be managed. Organization theory and strategic management accounting appear more suitable approaches. Thirdly, finance theory specifies that exchange rate overvaluation arises because of deviations of exchange rates from their purchasing power parities, but it does not explain why these deviations occur. Neither does economic theory. Once it is acknowledged that government policy is principally the cause of exchange rate misalignment, then the literature on how corporations manage currency risk can be seen as misguided in that it does not deal with the cause, but merely the symptoms of the problem.

Alternative theoretical approaches which eschew a macroeconomic bias and instead can be applied to examine the problem of currency misalignment from a corporate standpoint and which may yield differing policy implications than neoclassical approaches are examined next.

CHAPTER THREE

THEORETICAL APPROACHES OTHER THAN NEOCLASSICAL.

1. INTRODUCTION.

This chapter investigates what appropriate theoretical perspectives from accounting, business strategy, and organization theory can be applied to the research problématique. It is acknowledged that other disciplines are also suitable in addressing the research objectives, as indicated in **Table 3.1**, and it would be desirable for completeness to include these, were it not for space constraints.

TABLE 3.1
DISCIPLINES SUITABLE IN ADDRESSING THE RESEARCH OBJECTIVES

Impact of prolonged currency overvaluation on competitiveness	The economics definition of unit labour costs adjusted for exchange risk is partial. It is necessary to add a balanced trade account to the definition, but the definition is still not complete. Suitable approaches are corporate strategy and market structure.
Impact of prolonged currency overvaluation on the individual corporation	Economic exposure cannot be measured. Analysis of accounts and corporate strategy would better illuminate the case studies.
Adaptability of individual corporations to prolonged currency overvaluation	corporate strategy organization theory
Evidence on micro-and macro- performance under fixed and floating regimes	social and institutional factors in economics organizational behaviour
Exchange regime and potential for currency overvaluation	regime theory
Theory on how exchange regimes change	regime theory, political integration theory

2. ACCOUNTING METHODS AND STATEMENTS.

The purpose of this section is twofold. One is to indicate the usefulness of accounting information for the case studies. Second is to point to the information that is needed but is not available in the accounting statements.

2.1 Usefulness of accounting information for the case studies.

The international accounting literature's contribution to the problem of foreign exchange risk management is twofold. One is that it specifies the various categories of foreign exchange exposure for accounting purposes. Second, for multinational corporations, it indicates how foreign exchange gains and losses should be consolidated.

In categorizing exposure, the literature (eg. Belk & Glaum 1992) commonly distinguishes between accounting and cash flow exposure to foreign exchange risk. As noted in **Chapter 1**, the accounting concept frequently uses two standard definitions - transaction exposure and translation exposure (Wihlborg 1978).

However, cash flow, or economic exposure, is the principal concern of this thesis since the objective of the case studies is to demonstrate that U.K. corporations experienced difficulties in managing prolonged currency overvaluation. The transactions to which economic exposure pertains are uncertain with respect to both amount and timing. Nevertheless, even transaction exposure can be difficult to manage under prolonged overvaluation as hedging contracts may only be renewable at less favourable rates.

As the periods examined in the case-studies are in the past, information on profitability and a full ratio analysis can be calculated from the accounting statements to provide evidence of such difficulties. Where possible, this can be supported by information such as the trend in export sales, how exports compare to domestic sales and to competitors' sales. By such means, it can be investigated whether German competitors to the U.K. companies improved their market share in the U.K. and derived a competitive

advantage.

2.2 Information that is needed but is not available in accounting statements.

In a sample of 520 U.K. companies' annual reports, Company Reporting (1994) showed that only a quarter provide any meaningful disclosure of foreign currency exposure. This is an improvement on 1991, when the survey authors had found that only 15% of companies analysed their currency exposure in any detail in their reports. In the 1994 survey, it was found that most firms rarely provided quantified data of currency exposure for company debt, assets, cash flow and general treasury management measures. The small minority which did offer some analysis considered indebtedness and a small proportion analysed assets by currency. Only one company - Reuters - analysed cashflow by foreign currency exposure. Given the above indication of the dearth of information, this section focuses on five main data which would be desirable to have for the case studies, but which are not obtainable from the accounting statements.

Firstly, the internal cash flows of each firm and the currency denomination of its sales would be useful in order to perform a sensitivity analysis of real exchange rate changes on profits.

Secondly, even if cash flow information by currency could be obtained, or guessed, it is not known what external hedges the firm has transacted. The accounting statements also do not include information on internal hedging the company already has in place. It is not possible to guess what customized hedging, such as operational hedging, the firm has organized. Such information is not visible, but it needs to be, in order to make a full appraisal in the case studies of the relative capability to hedge prolonged currency overvaluation.

Thirdly, even where accounting statements are mandated to specify the translation method used, it is not known from the accounting statements whether translation exposure is

hedged or not. One factor bearing on the decision to hedge is whether foreign currency cash flows are regular and predictable. If they are not, treasurers are reluctant to put a currency hedge on a foreign cash flow which is indeterminate, since this could lock in a loss. The translation of overseas subsidiaries' results in the group accounts has two different effects - the impact on the balance sheet, and hence gearing, and the impact on profitability, and hence earnings per share. For the ICI case study, it was found that translation exposure is managed, principally because fluctuations in the year-on-year average £/US\$ rate can cause significant changes to reported earnings (Lyle 1992:18). However, it is not known from the accounting statements whether and what translation hedges have been transacted. Without such information, it is impossible to calculate ICI's income statement and balance sheet on varying exchange rate assumptions.

Fourthly, comparisons between corporations in countries with differing accounting standards for translation exposure add to the problem of assessing the impact of currency risk. For this reason, such a comparison using accounting data is not attempted in the case studies, but it is nevertheless worthwhile specifying the problems that can arise for the treasurer.

One of the reasons for the lack of a universally adopted translation accounting standard is that there are four principal conceptual methods of translation (Houston 1989, Nobes & Parker 1991:313). The differing methods give widely differing results, ranging from a large loss to a large profit, depending on the method chosen. The U.S. mandated the temporal method in FAS-8 in 1976. In 1977, the U.K. standard ED21 specified two acceptable methods, but it was not mandatory for firms to use the temporal method as it was in the U.S. The temporal method proved highly unpopular among MNCs because it led to wide fluctuations in earnings (Lassen 1982:125-126). These fluctuations arose because the U.S. standard disallowed firms to establish reserves by which the impact of exchange rate fluctuations could be smoothed out by adjustments to, or charges against, the reserves. Because of the undesirability of large fluctuations in earnings, treasurers found that they were forced to hedge translation exposure in order to report a more stable

earnings trend. Thus financial decisions were being taken purely on financial criteria. After the replacement of the temporal method by the current-rate method in FAS-52 in 1981, a U.S. survey (Doukas 1984) found that the number of firms hedging translation exposure fell from 60% to only 3%. Walsh (1986:75-76) concluded from this:

"Translation exposure has been excluded from consideration in this thesis because it is no longer an important issue...Given both the apparent lack of management and shareholder interest in translation exposure, it will be ignored."

Later surveys (see **Appendix 2**) found that firms do regard translation exposure as important and are indeed managing it (eg. Lyle 1992). The relevance for the case studies of differing translation accounting standards relates to competitive advantage. However, because it is not possible to quantify this competitive advantage from the information in the accounting statements, a possible channel in which competitive advantage can arise from differing translation methods will be noted.

In Germany, there are no national legal requirements on which translation method companies should use (Beck 1989:9). This is in keeping with the German tradition of permitting companies to keep hidden reserves. German corporations, like those of the U.K., are subject to E.U. accounting rules. The relevant E.U. regulation is the 7th E.U. accounting directive. This, however, does not specify rules for translation. Thus, as far as German corporations are concerned, there is complete freedom to choose translation methods (Institut der Wirtschaftsprüfer in Deutschland e.V. 1985:753). However, the effects of exchange rate changes on the company's results and the selected translation method must be noted in the company's financial statements (Hauptfachausschuss des IdW 1984:588, IdW 1985:754). By contrast, the U.K. has followed the U.S. in adopting standards as to which method for translation accounting should be used.

One reason why later surveys contradict the finding of Doukas relates to the appropriateness of various translation methods under differing currency environments.

A comparison of the mechanics and effects of the temporal and closing rate methods and the appropriate circumstances when the methods should be used is given in Lassen (1982:130-135). In summary, the temporal method is suitable when the home currency is strong and the current method when the home currency is a weak one. It is notable that the U.K. and U.S. both abolished the choice/obligation of using the temporal method just as the pound and US\$ entered periods of prolonged overvaluation.

The significance of the U.S. translation standard extends beyond U.S. firms since foreign firms are forced to comply with the U.S. standard in order to seek a listing on U.S. stock exchanges and gain access to U.S. debt markets as per Securities and Exchange Commission regulations. The question for competitiveness as it relates to the corporate treasury is whether the benefits of access to the U.S. capital market are greater than the costs of complying with Securities and Exchange Commission regulations. The relevance for the case studies concerns only the option open to large MNCs to fund US\$ assets with US\$ liabilities more cheaply in the US equity market than by borrowing US\$ in their domestic markets. The peripherality of such benefits to German corporations can be seen in that in the case studies, Daimler-Benz is the only German corporation which has followed this strategy.

A fifth source of information to illuminate the case studies which is not available in accounting statements relates to economic exposure. Whilst a minority of corporations may maintain separate internal accounts on their future cash flows and their sensitivity to exchange risk, there is no consensus on how such accounts should be formulated. The theoretical requirements which would enable accounting reports to provide a measure of economic exposure are highly restrictive. Perfect and complete markets¹ would need to prevail (Debreu 1959, chapter 7). Given the assumption of complete markets, all the assets and liabilities of the firm have market values. This means that the balance sheet

¹In perfect markets, all traders are price-takers, there are no indivisibilities, and markets clear in a frictionless, costless and instantaneous manner. Complete markets are organized markets which permit trading in all goods and factors.

value of net worth equals the market value of the firm. With perfect markets, the present values of all assets will equal their current replacement cost or their net realisable value. Given these assumptions, the consolidated net worth will equal the present value of the firm's future cash flows. However, the perfect and complete markets assumption is not only unrealistic, but contradictory (Bromwich 1977, Bromwich & Wells 1983). One reason is that under perfect and complete markets, currency risk would not exist. Incomplete markets will lead to many assets being non-marketable, and asset valuation and the net present value of corporate cash flows would be ambiguous.

Given the impossibility of calculating economic exposure from accounting statements, a proxy for the results of economic exposure can be derived via a strategic management accounting exercise similar to the following (Simmonds 1989:10):

TABLE 3.2
STRATEGIC ACCOUNTING INDICATORS

	Volume	Unit Revenue	Unit Cost	etc.
<u>Ourselves</u> Current position Change over period				
<u>Lead competitor</u> Current position Change over period Position relative to ourselves				
<u>Close competitor</u> Current position Change over period Position relative to ourselves				
<u>Laggard competitor</u> Current position Change over period Position relative to ourselves				

It is not pretended that all the above information can be obtained from competitors' accounting statements. ICI and its German competitors produce hundreds of products, thus requiring considerable guesswork to draw up unit costs and unit revenues. The framework is nevertheless conceptually useful in the absence of any other operational

means of assessing economic exposure.

As noted by Simmonds, such reports do not mean that relative performance indicators become objectives in their own right. Achievement of relative performance does not imply a strategy that will maximize present value. In fact, it is the other way around. The indicators are the effect, not the cause. If the strategy increases present value, the increase will show through in increased relative volume, increased relative market share and lower relative costs (unless present value is maximized by running down competitive position).

An additional useful accounting concept is that of variance analysis. Given that economic exposure refers to unanticipated changes in real exchange rates, any adverse impact on the company's future performance will be a function of the variance between the expected exchange rate trend and the outturn trend, and the extent to which the company is able to offset the economic risk.

2.3 Conclusion.

The critique of the accounting concept is essentially that it is backward-looking and refers to accounts drawn up at a past date. It is virtually impossible to calculate transaction, translation and economic exposures from published financial statements. These criticisms are not a handicap for the purposes of the case studies. Instead, to investigate whether a deterioration in performance occurred at the time of sterling overvaluation, a ratio analysis is performed where accounting statements are available (ICI, Lesney) and sales data are used as a proxy where accounting statements are not available (Jaguar).

It is not suggested that accounting statements are necessarily amiss in not including the information outlined in Section 2.2 above. Nor is it concluded that the case studies are inadequate because the firms would be unwilling to disclose such information. Disclosure on currency exposures and hedging activities would be undesirable from the corporate standpoint for three main reasons. Regarding foreign exchange exposure, disclosure could

spur an undesirable critique from stock analysts on the firm's product-market strategy before the strategy comes to fruition, thereby potentially sabotaging it. Secondly, disclosing information on foreign currency cash flows is equivalent to giving away up to date information on the firm's trading position to competitors. Thirdly, the corporate treasury would not want to disclose its hedging strategy, as it can be ridiculed if the strategy turns out to be wrong.

3. BUSINESS STRATEGY LITERATURE

3.1 Introduction.

The international business literature makes a significant contribution over that of economic theory in addressing currency risk management. This contribution appears at first sight to diminish the problem of currency risk via a diminution of trade theory in economics.

The basis of trade in classical economics rests on differences in relative factor costs. It was shown in **Chapter 2** that economics defines competitiveness in terms of unit labour costs adjusted for exchange rates. The significance of currency risk is that it adds to costs. However, the business strategy literature asserts that relative factor costs are not the crucial determinant of trade. This therefore tends to diminish the significance of currency risk.

The international business literature comes to this conclusion via its empirical work in market structure and via an analysis of strategy at the level of the individual firm. The degree of exposure to currency risk depends on the degree of competition. Relative factor costs are crucial in the classical trade model because of the assumption of perfect competition. Such an assumption illustrates how economics has treated market structure largely in theoretical terms. The business strategy literature, by contrast, is realist in incorporating imperfect competition. Its contribution is that it has developed an extensive empirical literature dealing with the competitive position of individual firms and even of nations (Porter 1990).

The purpose of this section is to provide a theoretical rationale for the approach of the case studies. This approach is based on the early Harvard framework of strategy dating from the 1950s.

3.2 Matching qualifications and opportunities.

Strategy is seen as a match between qualifications (what a business does well) and opportunity (the firm's environment). The firm's environment is analysed in terms of threats and opportunities which give rise to key success factors. The firm's qualifications are analysed in terms of its strengths and weaknesses. The interaction between qualifications and opportunities then give rise to strategic alternatives and the choice of appropriate product-market strategy. Product-market strategy refers to what products the firm should produce and what markets it should be in. These therefore are the main options facing the firms in the case studies.

Once the concept of prolonged overvaluation is introduced, the options may become constrained because of an adverse effect on, for example, cash flow. The treasury literature prescribes that strategy should be modified where possible towards the goal of creating a natural hedge. The remainder of this section reviews relevant strategy literature to investigate whether it supports or rebuts the treasury principle of creating a natural hedge.

The basic matching approach from the 1950s has since been extended such that the literature on strategy can be broadly divided into three perspectives. These are organizational, political and economic.

3.3 Organizational perspective.

The organizational perspective (Chandler 1962) focuses on the linkages between structure and strategy. Its contribution is in postulating that certain kinds of organizational forms give rise to certain types of strategy. Thus the concept of generic strategy was introduced into the literature. Generic strategies are of three types - cost leadership, differentiation, and organizational forms. A cost leadership strategy can be undermined by prolonged overvaluation, whereas a strategy of differentiation can serve to reduce the impact of the overvaluation. As regards organizational form, the questions to be addressed are whether a particular strategy requires a centralized or decentralized treasury and secondly,

whether the management problems of prolonged currency overvaluation require a particular organizational form. These organizational questions are addressed in Section 3.

3.4 Political perspective.

The political perspective (Cyert and March 1963), focuses on the bargaining process within organizations and between organizations and their environment. It perceives strategy as a consequence of this bargaining process. The question here is how to resolve the contradiction between the treasury prescription for a natural hedge and the lack of responsibility on the part of any entity within the firm to create a natural hedge. In political terms, why does the treasury have a relatively weak influence in effecting its desired state of a natural hedge, i.e. why is the treasury reactive rather than proactive ? This question is examined in Chapter 10.

3.5 Economic perspective.

The economic perspective, led by Porter (1980,1985) has come to dominate the strategy literature since the 1980s. Because of its dominance, it will be discussed at greater length than the other two perspectives.

A distinguishing feature of the economic perspective is its distinction between corporate, business unit and functional strategy. Corporate strategy refers to analysis of which business the corporation should be in. Business strategy refers to analysis of how to compete in a given business. Functional strategy refers to the initiatives needed to enact the business strategy.

From the point of view of the firm, the best way to compete in a given business is to be in a monopoly position and to maximize profits. Literature in industrial economics has since 1945 postulated other objectives of the firm, such as sales maximization (Baumol 1959), managerial theories (Williamson 1963), organizational theories such as satisficing (Cyert & March 1963). Porter (1985) has turned industrial economics on its head and

returned to an analysis of how firms can extract monopoly rents. The functional strategy he has devised postulates five forces of competition. He prescribes that firms should choose a strategy that positions themselves against these five forces. The ways in which this can be accomplished are via cost leadership and product differentiation.

Two conclusions emerge if currency risk management is applied to Porter's analysis. One is that the positioning of the firm in its market is important. To the extent that firms can extract monopoly rents through a superior product range which is relatively price inelastic, the impact of currency risk is diminished. The second conclusion is that to the extent that cost leadership is necessary before a desired market position can be attained, the impact of currency overvaluation can be significant enough to inhibit the investments required to acquire the necessary market positioning.

The remainder of this section summarizes Porter's application of the above principles of a firm's functional strategy and the diminution of the role of factor costs. It then introduces currency overvaluation into the diamond model of a country's competitive advantage.

It is widely accepted that factor comparative advantage is an inadequate explanation for trade to exist and for intra-country differences in competitiveness (Porter 1990:14). Porter cites that the internationalization of competition and globalization of industries has decoupled the firm from the factor endowment of a single nation. Porter thus concludes (p.15) that differential factor costs are less important in explaining comparative advantage than how effectively the factors are deployed.

What explains the effectiveness with which factors are deployed hinges on the elements missing in the Ricardian theory of comparative advantage. This did not take into account economies of scale, product differentiation, technical change and changing demand patterns. These factors reflect imperfect markets, not the perfect competition implicit in Ricardian theory. Thus a technical advantage gives firms the power to circumvent scarce

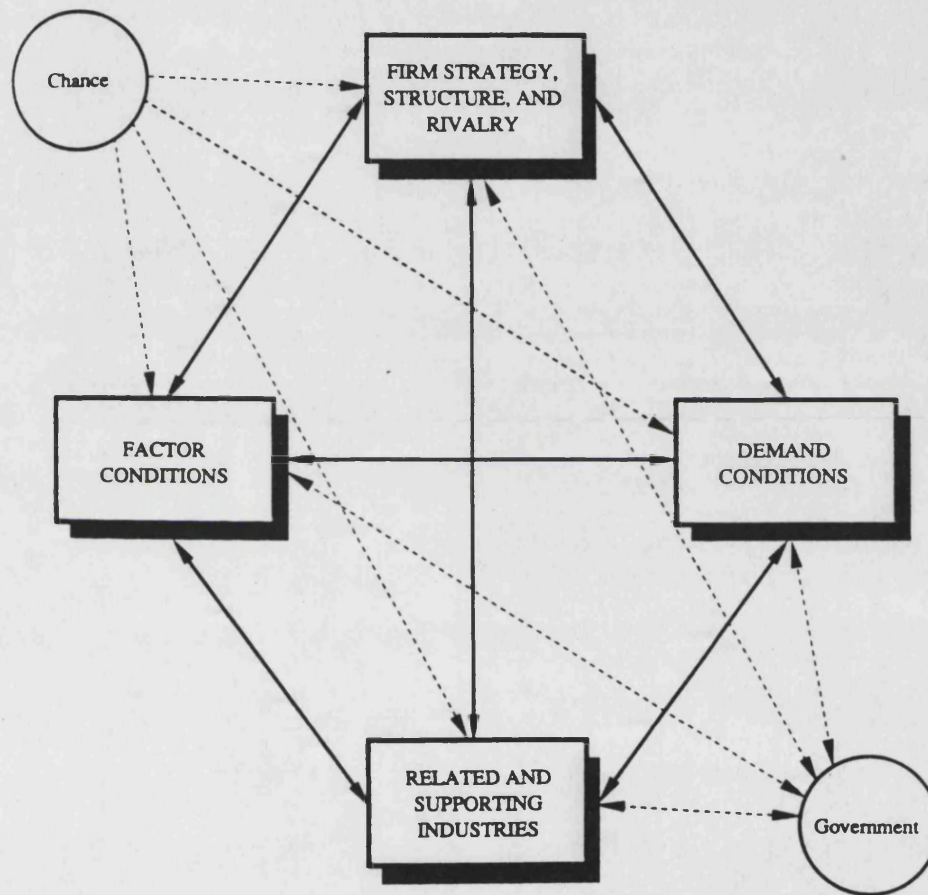
factors via new products and processes. Technical advantage can therefore be more important than low labour costs in comparative advantage; indeed technical advantage might put a reverse process into operation. The need for high quality personnel may mean the most attractive location is an area of high labour costs; this is reinforced by an additional attraction of being near the market. This weakens the case that sterling overvaluation is offset by lower labour costs in the U.K. than in Germany.

Low labour cost, low-skill locations -(such as the U.K., in E.U. terms)- might be important for low-factor cost-sensitive industries. However, if low factor costs are the only advantage of a location, the basis of comparative advantage is likely to be transient (Porter 1990:15). The globalization of competition involves sourcing worldwide, and shifting factor advantage means that sourcing can be shifted to where production becomes relatively cheaper elsewhere. In effect, this argument reinforces the disincentive to produce in the U.K. under prolonged currency overvaluation.

Given that it is imperfect markets that lie at the root of the critique of the Ricardian theory of comparative costs, the basis of this imperfect competition requires explanation. Porter argues that technology gap theories (Wells 1972) do not explain which nations will gain it, nor why the gap is often sustained, rather than diminished. Vernon's product cycle theory (1966) introduces the dynamic missing from the Ricardian analysis by emphasising the firm's domestic market as a stimulus to new products. But it does not explain why technical and competitive advantage is sustained.

The growth of multinational corporations, which exploit strengths gained in one nation in order to establish a position in other nations, underline the market structure of imperfect competition. The strengths of MNCs also suggest why the gap might be sustained. However, the question is left unanswered as to why and how MNCs from a particular nation develop advantages in particular industries. Porter's (1990:18) thesis is that conditions in the domestic economy are of crucial importance in this process. This refutes any notion that the globalization of industries and the internationalization of

DIAGRAM 3.1
PORTER'S BASIS OF COMPETITIVE ADVANTAGE



companies has reduced the role of the nation in the international success of its firms². Both trade and growth theory in economics look solely at cost and ignore quality and differentiated products in competition. The concept of the diamond (Fig.3.1) is introduced to depict four dimensions of competitive advantage of the home environment. These four determinants of national advantage operate as a mutually-reinforcing system and Porter observes (1990:72) that the effect of one determinant is contingent on the state of the others. Moreover, the operation of the determinants and the interactions among them lead to powerful external economies within the nation, often within a particular city or region, that are difficult to tap from another home base (1990:72, footnote 7).

By the same token, it can be hypothesized that the same interactions can lead to powerful external diseconomies if the determinants in the diamond become adverse. This is precisely the case of a discontinuity such as prolonged exchange rate overvaluation. The question is whether the effect of currency overvaluation in one country is large enough and of sufficient duration to play an important role in shifting comparative advantage to a rival nation whose currency is not overvalued³.

The process whereby shifts in comparative advantage from currency overvaluation can occur can itself be plotted using the diamond map. Starting with **factor conditions**, if a country's exchange rate becomes overvalued by a sufficient margin, this could raise the price of the entire stock of factors relative to that of a competing nation. If the overvaluation results from high real interest rates, it implies that **demand conditions**, the second determinant of national advantage, are being depressed. Depressed demand conditions usually coincide with falling profits and investment levels. If these lead to a marked decline in investor confidence and cuts in output, the loss in capacity could in turn reinforce the downward demand spiral as imports are encouraged by currency

²Thus Jaguar's German rivals Mercedes-Benz and BMW derived a competitive advantage partly from the benefits accruing from domestic German production.

³This question is considered for the U.K. auto and chemical industries in Chapter 13.

overvaluation and by the failure of domestic suppliers.

There thus exists a direct link with the third determinant of national advantage, namely **related and supporting industries**. If these are domestic (which the diamond theory asserts as being a source of competitive strength), then by definition, the overvaluation of the domestic currency will render their output more expensive relative to foreign competitors. This will act as an incentive to source abroad and therefore a possible disincentive for the further development of domestic supplier industries.

The fourth determinant, **firm strategy, structure and rivalry**, illustrates the essentially defensive nature of corporations in the face of exchange rate misalignment. Faced with uncertainty as to the duration of the currency overvaluation and the depressed demand conditions, it would appear a rational strategy to postpone new investment until the demand outlook becomes clearer. If no dates can reasonably be forecast for the end of the overvaluation, then it might appear rational to change strategy and switch production abroad, writing off the heavy sunk costs in the domestic industry.

Bearing on such a decision would be the structure of the industry. Technical constraints in the form of discontinuities in the production process might render heavy new investment abroad unviable, unless it could be shown that the overvaluation is permanent. Furthermore, firms might not be able to switch production abroad because suppliers might not exist; the very reason that Porter cites the existence of related and supporting industries as a strength can become a weakness if all operators in an industry are subject to the same rise in costs from the overvaluation. Moreover, the intra-firm rivalry that is seen as essential in the diamond model for efficiency and innovation is constrained by the fact that all firms in the industry in that country face the same overvaluation. Whilst the impact of the overvaluation on their profitability will differ according to, among other factors, the degree of dependence on the domestic economy, the existence of global competition indicates an erosion of home demand and exports. Even with intra-firm rivalry, the strategic choices available are limited - to cut output and source or produce

abroad.

The logic of the argument presented here is that instead of an industry flourishing and building on the existence of the favourable features of the diamond, just one major adverse factor such as prolonged overvaluation of the domestic currency can act as a discontinuity and set in train a process of disinvestment. This can erode the large external economies which act as a source of advantage to the industry. An opportunity is provided for firms in the country whose currency is not overvalued to supplant those in the economy with the overvalued exchange rate.

The question then remains as to why Porter did not incorporate the significance of exchange rate shifts into his analysis. The effect of an overvalued exchange rate is to raise domestic factor costs relative to those abroad. The fundamental basis of Porter's analysis is a critique of the importance of relative factor costs. Thus a stress on the importance of exchange rates would appear to undermine Porter's conclusions. Porter cites (1990:3), mentioning Germany and Switzerland, that nations have enjoyed rapidly rising living standards despite appreciating currencies. However, this neglects to distinguish between nominal and real appreciation. Nominal appreciation merely offsets the lower rates of inflation in these two countries. Porter questions whether a "competitive" nation can be defined as one whose exchange rate makes its products price competitive in international markets. He argues (1990:8) that the expansion of exports because of low wages and a weak currency, at the same time as the nation imports sophisticated goods - (which its firms cannot produce with sufficient productivity to compete with foreign rivals) - may bring trade into balance or surplus, but lowers the nation's standard of living. This argument is relevant in a comparison between the U.K. and Germany.

Here Porter is acknowledging that a nation can have a "strong" currency because its economy is strong. Thus the independent determinants of national advantage within the diamond are such that the economy can offset the seeming disadvantage of relatively

higher factor costs - from a currency which is appreciating in real terms - by generating productivity increases. The productivity increases accordingly make possible the real currency appreciation.

From this standpoint, it can be seen that the exchange rate is a dependent variable and that the four determinants of national advantage are independent variables. Thus the logic of why Porter placed the independent variables within the diamond and the exchange rate outside the diamond is clear.

However, the result is to underemphasize the importance of exchange rate changes. The question is whether Porter's standpoint of the exchange rate as a dependent variable is the more valid one as far as the U.K. is concerned. Porter neglects that exchange rate overvaluation can be of a size and duration that it inhibits the process of investment necessary for both market positioning and for generating the productivity increases. Secondly, the model, in placing the government sector outside the diamond, also underemphasizes the importance of government. This is a serious omission given the role of government policy in prolonged currency overvaluation.

Developing on from the economic perspective in strategy, it is appropriate to review three fundamental tensions in the perspective of strategy. These are a positional versus a competence perspective; a voluntaristic versus a deterministic perspective; and a deliberate versus an emergent perspective. These will be briefly summarized and applied to the problem of currency overvaluation.

3.6 Positional versus competence perspectives.

Already from the mid-1960s to the 1980s, the link between a corporation's qualifications and environment had focused strategy literature on "resource analysis", also termed the "distinctive competences" of firms. It is argued (Nelson & Winter 1982) that it is this bundle of competences that constitute the enduring sources of competitive advantage rather than Porter's assertion of the firm's position in the market. The resource based

perspective has been further developed by Hamel and Prahalad (1985) to focus on the core competences of an organization as the key to strategic advantage.

Porter's positional perspective implies that competences can be bought in the marketplace. The resource based perspective asserts that market position can be eroded via competition and that it is not enough simply to be concerned with position, i.e. to choose a strategy and to implement it well. Instead, they stress that it takes time to accumulate core competences. History matters in that the past choices a firm makes endows it with resources which may be difficult to replicate by "buying in" as Porter claims.

The relevance of prolonged currency overvaluation is that the core competences which might have been built up over years can suddenly be rendered uneconomic. A prime example of such vulnerability is the U.K. aircraft industry. U.K. aircraft-makers cannot suddenly transfer production to another country not subject to currency overvaluation. Similarly, skilled aircraft workers cannot be bought easily in another country unless poached from competitors. Thus both the positional and competence perspective support the notion that currency overvaluation can represent a discontinuity which cannot be managed. Whilst Bartlett & Ghoshal (1991) emphasize organizational capability and the ability to transplant innovations from one part of the world to another, the reality in industries such as the aircraft industry is quite different.

3.7 Voluntaristic versus deterministic perspectives.

Organizational theorists stress that firms can be "prisoners" of their environment. This "trap" represents a voluntaristic perspective of strategy. Hamel and Prahalad (1989) emphasize the need for a strategic intent or mission, i.e. a deterministic perspective of strategy. This implies that to escape the effects of currency overvaluation, corporations must plan their operations to minimize the risk of currency misalignment. This in turn implies global diversification and divestment from dependence on any one country which could be subject to prolonged currency overvaluation.

3.8 Deliberative versus emergent perspectives.

The notion of rational analysis leading to strategic intent and action underlined by Hamel and Prahalad is not shared by Mintzberg (1990a, 1990b). Mintzberg asserts that in the deliberative perspective of strategy, intended strategies are assumed to lead to realised strategies. Mintzberg notes that intended strategies are often not realised and that realised strategies are often not intended. Such unintended realised strategies are termed emergent strategies. This notion accords with the crisis management necessitated by such a discontinuity as exchange rate overvaluation. However, emergent strategies are hardly a recipe for managing prolonged currency overvaluation, since by definition, the strategies only emerge when the damage has already been done.

The literature on emergent strategies has been extended to include a further distinction between experiential and inertial organizations. In experiential corporations, strategies unfold as corporations would learn from the lessons of currency overvaluation elsewhere, whereas inertial firms may simply go bankrupt.

Experiential strategies constitute a further critique on the school of strategy represented by Porter. Firstly, the learning process depends on the people in the organization. Rethinking may only be possible if existing managers are replaced. Secondly, it underlines that strategic change is costly. Dent (1990) advocates strategies for subsistence in that all organizations should have an implicit model of how they interact with their own environment for survival. This is the closest the literature on strategy has reached to prescribing models of how firms should in strategic terms monitor and manage exchange rate overvaluation and the ensuing effects on their competitiveness.

3.9 Conclusions.

The 1950s literature on strategy based on analysis of a firm's strengths and weaknesses and opportunities and threats is useful to apply in the case studies. The purpose is to focus on the options and constraints facing the case study firms when subject to prolonged currency overvaluation. The options and constraints then determine whether the elements

of strategy outlined in this section, (which can be applied to diminish the significance of factor costs), are operational for the case study firms. It needs to be stressed that the options and constraints are unique to each firm. This further underpins the rationale for the case study approach employed in this thesis.

4. ORGANIZATION THEORY.

4.1 Problem Identification.

The major difference between transaction/translation exposure and economic exposure is that transaction and translation exposure present operational problems which can be covered at a cost to the firm. Economic exposure cannot be covered, but can be reduced via diversification. The management of transaction and translation exposure is a routine function and lies solely within the ambit of the corporate treasury function. By contrast, the management of economic exposure is an aspect of the firm's strategy. This is largely a function of the firm's investment policy, over which the treasury generally has no control except over capital budgeting.

Applicable literature from organization theory investigates the optimal organizational structure within the corporation, subject to constraints. The literature is also concerned with the design of methods of performance evaluation which are consistent in that they do not distort efficient resource allocation within the corporation.

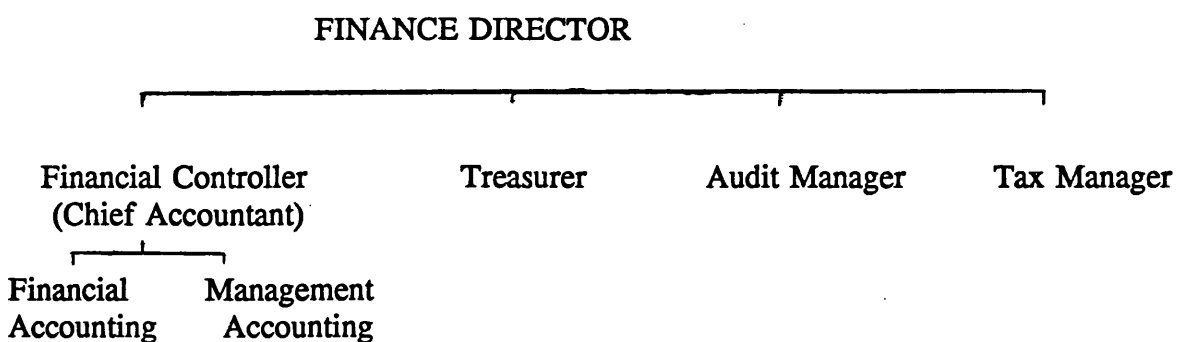
The purpose of this section is to assess whether this literature can provide useful insights to the problem of how the firm manages prolonged currency overvaluation. The central problem is that the overall functional responsibility for currency risk management is usually vested in the treasury, when a firm has one⁴. The treasury's time horizons tend only to be as long as those of financial instruments. Yet it is production decisions that generate the exchange risk in the first place. These investment decisions in production are not taken by the treasury but by the business units. The decisions of the business units

The majority of the 116 responses to Edelshain's (1995) survey of "Times 1000" corporations did not have treasuries. If these companies are too small to set up treasuries, it might be deduced that they are also too small to justify having a corporate planning department to manage prolonged overvaluation strategically. These observations are consistent with this thesis on the difficulties firms face in managing misalignment, since a substitute finance department is hardly likely to have more expertise than a specialist treasurer or specialist corporate planner.

may be subject to the approval of the board, as advised by the corporate planning or strategy departments. This raises two questions relating to the effectiveness of currency risk management. One is that to the extent that the interaction between the two departments is sub-optimal, sub-optimal decision-making is likely to result. Second stems from the prescription of portfolio theory. If prolonged currency overvaluation can only be effectively managed via diversification, what conclusions follow for the internal organization of the corporation ? Should the role of the treasury function be widened to embrace the corporation's investment decisions ?

Within the above problem formulation, it should be noted that the treasury function is limited even within the finance function of the corporation and is only part of the team reporting to the finance director. The organization of the finance function in a typical large organization is illustrated below:

**DIAGRAM 3.2
THE ORGANIZATION OF THE FINANCE FUNCTION IN A TYPICAL LARGE CORPORATION**



Source: adapted and extended from ACT VI:327

The diagrammatic representation indicates that considerable liaison exists between

DIAGRAM 3.3
APPROACH OF THE CORPORATE TREASURY TO CURRENCY RISK MANAGEMENT

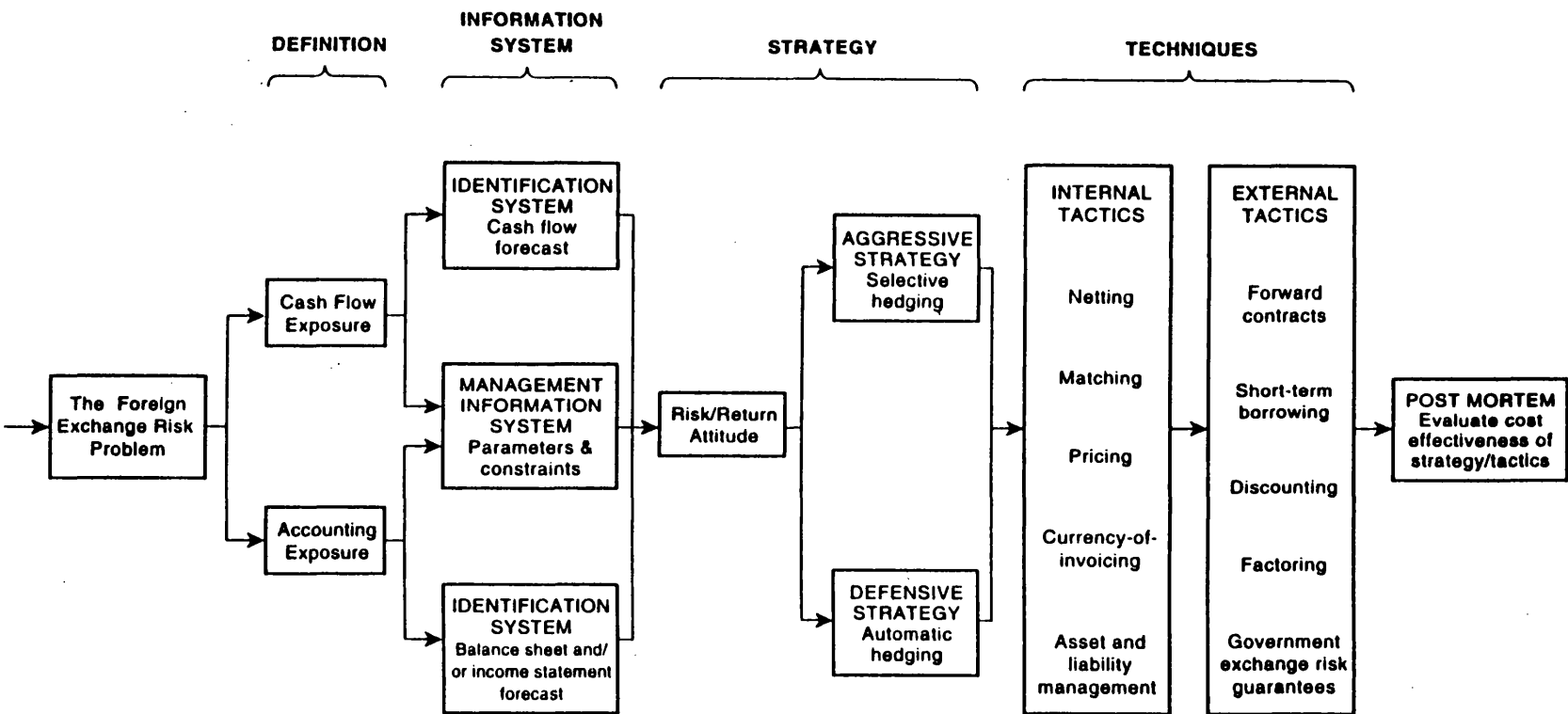
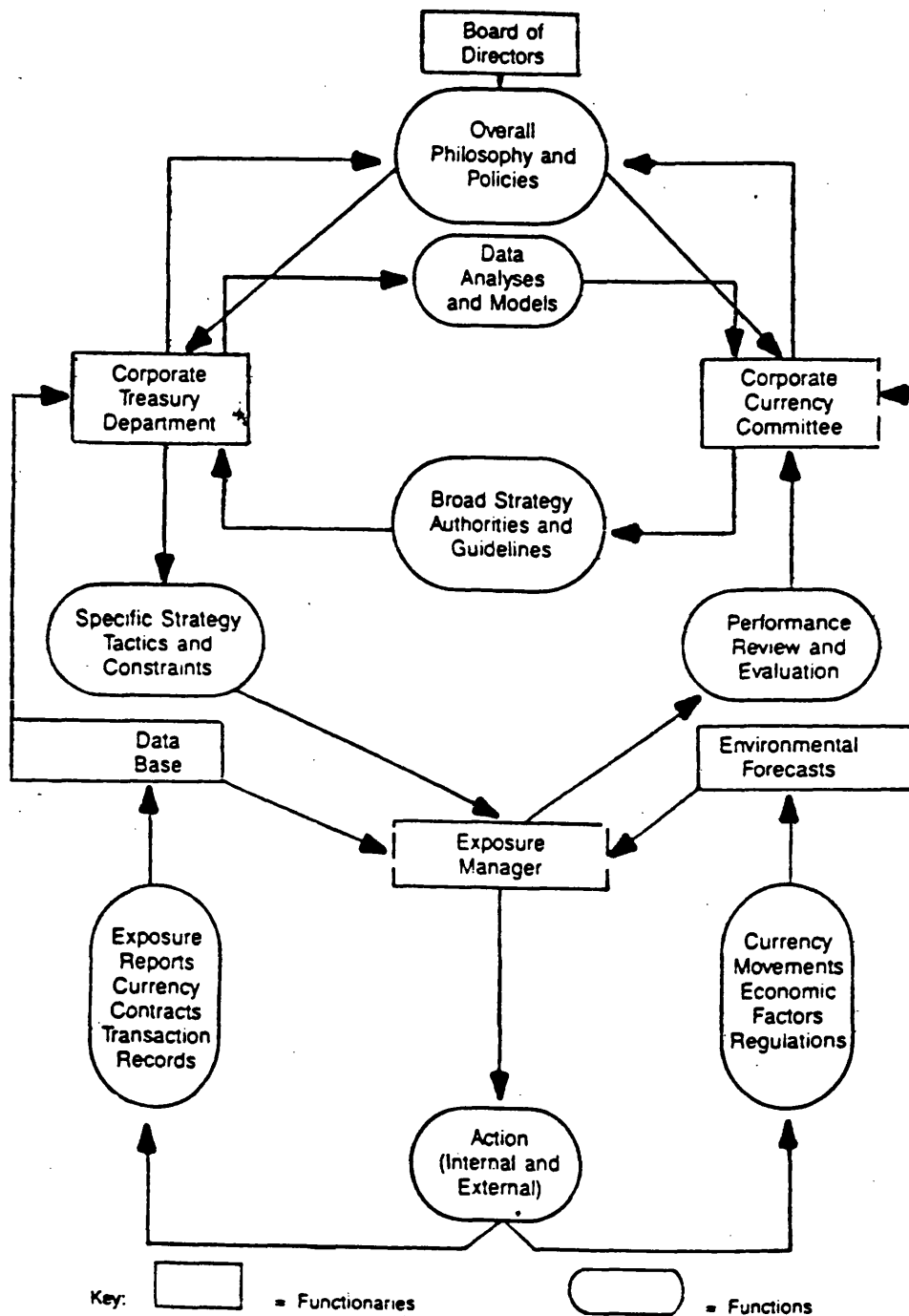


DIAGRAM 3.4
 EXAMPLE OF AN ORGANIZATIONAL STRUCTURE WHICH WOULD SUPPORT
 PROACTIVE CURRENCY MANAGEMENT



Source: IFAC (1995)

treasury and financial accounting and management accounting staff as well as with tax specialists. This liaison may involve decisions on hedging currency and interest rate risks on the balance sheet, on identifying project cash flows and on assessing the tax implications of new projects and of financial decisions. In contrast to the dominance of the purely financial role of the finance function by the treasurer, the finance director will generally focus on issues other than risk management (Holland 1993:17).

The relationship between the treasurer and finance director is a reporting one. Unlike the accounting and audit aspects of the finance function, the treasury has a strong cost reduction or profit maximization orientation. However, in procedures for managing foreign exchange risk (Diagram 3.3), the treasury's reporting is not to the other business divisions of the corporation, but upwards to the finance director. Thus it is the finance director, not the treasurer, whose liaison with the senior management necessitates a seat on the board and at least equal status to the heads of the business divisions.

The question is how the treasury can proactively (Diagram 3.4) influence the business divisions and whether its subordinate position in relation to the heads of the business divisions is a handicap.

4.2 Contribution of Organization theory.

Organization theory sees the firm as a pluralistic organization and emphasizes that totally comprehensive rational analysis and its consequent implementation extending right across a major corporation is impossible to achieve (Tomkins 1991:207). The basis of this conclusion is threefold.

One is that the totally comprehensive analysis of an organization is by its very nature so complex that by the time it is completed it will no longer be rational because life moves on before the implementation is complete.

Second is that the necessary specialization of functions is not necessarily consistent with action rationality.

Third is that internal barriers to change exist as the natural consequence of attempting to combine together multi-interest groups possessing different power and influence. The combination can be a set organizational schema in which some approximate balance of interests has been achieved. Once the organizational schema is broken, the internal barriers to change arise because change affects some interests more than others.

Organization theory concludes that because some interests in the corporation will only perceive how they are affected as the change unfolds, successful change needs ongoing management until a point is reached where stability is reattained.

Applying the theory to corporate currency risk management, the objective is to integrate the treasury and corporate strategy roles in managing exchange rate misalignment. The theory indicates that resistance will arise from three sources. One is from the specialization of functions which results in a lack of understanding of each other's expertise. Second is from the possibility that the treasury and corporate strategy departments have merely an advisory role to the heads of the business divisions. Third is from concern as to whether the functions of the treasury and corporate strategy and business division heads will be upgraded or deemphasized in relation to each other in the corporate hierarchy.

This latter concern is understandable because if one of the functions is upgraded in the decision-making process, a fear would arise on the part of each interest of not having the necessary expertise to make "rational and correct decisions". The treasurer's expertise lies in short-term financial management and not in product-market strategy. Similarly, the corporate strategist's knowledge of financial strategy may be limited. For the above reasons, organization theory's contribution to the problem of economic exposure management is only partial at best.

As the above conflicts and separation of interests reflect similar conflicts in the academic literature, it is necessary to delineate the links between finance theory and strategic

analysis, and organization theory and strategic investment decisions.

The literature linking finance theory with strategic analysis has to deal with the fact that finance theory typically treats investment decisions as a self contained financial problem and nothing to do with strategy. The real conflict between strategy and finance relates to the firm's attitudes to risk and this is linked in with organization theory in that personnel preoccupied with day-to-day decisions cannot focus on the long-run. Thus finance theory dictates that investment decisions be based on discounting the net present value of cash flows arising from the investment, but the treasury staff who might be monitoring such calculations can only make them in tangible areas of investment. Non-tangible, or strategic benefits of the investment, would be excluded.

The literature has attempted to overcome this problem with portfolio matrices, pioneered by the Boston Consulting Group in 1970. In these matrices, performance is measured by growth/market share axes and the discounted cash flow technique is not used. The critique of portfolio matrices is that they provide only very broad views of what kind of activities a firm may wish to invest in, rather than providing direct assistance in formulating assumptions to drive any financial appraisal.

The literature linking organizational decision processes and strategic investment decisions indicates that major investment decisions are iterative and only part rational on account of internal political bias and cognitive overload (early work on this topic is Braybrook and Lindblom 1963). In addition, the literature highlights that the investment decisions involve complex learning processes which organizations are poor at (Argyris 1977).

The above brief survey does not include the whole range of strategic factors that can outweigh currency risk. The analyses of strategic investment appraisal by Simmonds (1987) and Bromwich and Bhimani (1989) both recognize the need to trace the benefits of strategic investments on a range of market factors. The authors show that such appraisals involve significant pitfalls. For example, a broad assessment of increased

market share without an analysis of order-winning criteria is unsatisfactory. General statements that investment appraisals should include data on, for example, product enhancement, diversification, risk reduction and increased internal benefits do little more than say that something more is needed.

The problem of decision rules in investment appraisal with regard to currency risk is similarly complex. This is well borne out in Steven's (1977) claim that a currency adjustment can produce virtually any result regarding the relative profitability of domestic versus foreign production. Thus a devaluation of the dollar may discourage U.S. direct investment abroad, encourage it, or leave it unchanged, depending on how it affects the relative profitability of foreign production. This in turn depends on the dollar-denominated content of the foreign subsidiaries' cost function, the degree of substitutability of domestic and foreign production and the slope of the revenue function.

4.3 Conclusions.

Two important points emerge from the above literature. Firstly, it underlines the bespoke nature of the procedures managing currency risk. Secondly, it underlines the importance of the role of the marketing, product development, purchasing and functions other than treasury, in managing exchange risk and the need for close cooperation between them. However, organization theory does not provide a blueprint of how organizational integration between the functions should be accomplished. Not enough is known about the role of the Currency Committee indicated in Diagram 3.4 and future research is needed before conclusions can be drawn.

5. CONCLUSIONS

Conventional accounting statements are backward-looking and provide little information on how a corporation is managing foreign exchange risk. Accounting theory makes a useful contribution in pointing to the need for internal accounts based on the present value of future cash flows, which is the essence of economic exposure. However, a practical means for the treasurer to quantify economic exposure remains undeveloped. Strategic management accounting and variance analysis provide an indication to the company of its economic exposure. Lack of information prevents these techniques being used in the case studies, but ratio analysis nevertheless is adequate to give an indication of how the subject company fared during past periods of currency overvaluation.

The business strategy literature has deflected attention away from exchange risk by highlighting the importance of non-price factors. What the case studies attempt to demonstrate is that in instances of prolonged currency overvaluation, price factors can become of such overriding importance that they outweigh the non-price factors.

The contribution of organization theory is complementary to that of the business strategy literature in diminishing the importance of price factors (and therefore exchange risk) by highlighting optimal forms of organizational structure which can deal with exchange risk. However, empirical reality has not caught up with theory. The limitation of the role of the corporate treasurer in the strategic management of currency risk is probably not related to the complexity of integrating treasury strategy with product-market strategy. Instead, it is the impact of the Efficient Markets Hypothesis that is likely to explain the lack of progress in the setting up of "optimal" organizational structures. The hypothesis that firms cannot forecast exchange rates enforces a reactive pattern of adjustment on the part of corporations to exchange rate changes.

If corporations cannot change their organizational structure to deal with exchange rate fluctuations and misalignment, an alternative strategy is direct action at the cause, namely

government policy. Such direct action might take two forms. One is via the political process to change exchange regime. The other is via treasuries' own use of a basket currency in place of volatile national currencies.

CHAPTER FOUR

METHODOLOGY AND HYPOTHESES

1. RESEARCH HYPOTHESES & APPROACH

HYPOTHESES	APPROACH & CHAPTER INDEX
<p>1. firms experience major difficulties in managing prolonged currency overvaluation.</p> <p>Sub-hypotheses:</p> <p>a. the role of the corporate treasury in the management of foreign exchange risk is limited.</p> <p>b. other organizational entities within the corporation are also neither channelled to effectively manage prolonged overvaluation, nor indeed may be capable of such management.</p> <p>c. whereas the onset of currency misalignment can be very sudden, strategic changes to manage it are slow and reactive, rather than proactive. In consequence, firms can be forced into retrenchment.</p> <p>2. Prolonged overvaluation may adversely impact the competitiveness of individual firms.</p>	<p>case-study of corporate policy</p> <p>CHAPTERS 6 TO 8</p>
<p>3. The adverse impact on firms that are vulnerable should also be evident at industry-level and, depending on circumstances in individual countries, in the macro-economic competitiveness of the economy. In this case, the interest of government as a stakeholder should therefore be significant.</p>	<p>replication of data in 3 countries</p> <p>CHAPTER 10</p>
<p>QUESTIONS ARISING FROM THE ABOVE ARE:</p>	
<p>1. How does prolonged currency overvaluation arise ? Does the way in which overvaluation arises have a bearing on what firms should do to manage it ?</p>	<p>analysis of the causes of misalignment</p> <p>CHAPTER 10</p>
<p>2. Should firms attempt to prevent prolonged overvaluation occurring in the first place i.e. can firms collectively influence governments to preclude prolonged currency overvaluation ?</p>	<p>interview of pressure groups and interpretive review of corporate-government relations</p> <p>APPX. 1 & 5</p>
<p>3. If not, can currency exposures be managed jointly (including business divisions) or separately (only by the treasury) ?</p>	<p>Future research</p> <p>CHAPTER 11</p>
<p>4. Can international monetary reform, such as regime change, aid in preventing exchange rate overvaluation and what shape should such reform take ?</p>	<p>APPX. 4</p> <p>CHAPTERS 2,11</p>
<p>5. What is the place of currency risk in the overall risk facing the firm ?</p>	<p>CHAPTER 9</p>
<p>6. What is the significance of factors other than currency risk - which are determinable by public policy - in reducing the risk environment facing the firm ?</p>	<p>APPX. 6</p>

The hypotheses are investigated using a twofold classification of research type: exploratory, and comparative/descriptive.

The investigation is exploratory because the impact of prolonged overvaluation on individual corporations and how corporations have attempted to manage misalignment has not so far been documented. It is similarly exploratory because corporate treasurers' preferences on exchange regime have also not so far been investigated. Belk's survey of U.K. corporate treasurers' attitudes (which were found to be positive) to the ERM was not until 1993.

The investigation is comparative because of the need to compare U.K. firms with their competitors based in a country which is not subject to prolonged currency overvaluation (see Charts 1.1 to 1.6). This permits the formulation and testing of hypotheses. One hypothesis is that the competitors derived an advantage from the exchange rate policy of their home government. Additionally, it permits a dynamic to be introduced by an investigation of what strategies and counter-strategies competitors actually pursued in response to the misalignment in one country. Not one of the empirical investigations made so far has included a study of competitors' reactions. This is outside the scope of the survey research method. The approach of this study is therefore backward-looking in that it investigates the actual decision-making process of firms in the past. This backward-looking approach is not considered a limitation to the topic's usefulness since there is little in current international monetary arrangements to prevent governments, notably the U.S. and U.K., from pursuing policies which lead to prolonged currency overvaluation again.

The conventional distinction between pure and applied research is too rigid in the sense that in the social sciences, applied research can generate its own theories. The relevance can be seen in whether empirical evidence substantiates a rebuttal of the policy implication of basic monetarist theory, namely that exchange rates should be left to market forces.

2. RATIONALE FOR EMPIRICAL APPROACH

2.1 Review of research methods used in previous investigations.

The table below provides a quick guide.

TABLE 4.1
RESEARCH METHODS PREVIOUSLY USED IN INVESTIGATING CORPORATE CURRENCY RISK
MANAGEMENT - A SUMMARY.

Category	number of previous investigations	of which include economic exposure, or competitors' reactions.
<u>Theoretical</u> 1. finance theory 2. economics 1. abstract models 2. econometric relationships 3. actual experiments/ simulations	several several 3	2 Naumann Etienne 1977, Mello & Parsons 1992 1 Moens 1993 2 Rodriguez 1980, Walsh 1986
<u>Empirical</u> 1. postal survey 2. multiple interview 3. case study	8 6 several	4 Broder 1984, Cezairli 1988, Herrmann 1989, Edelshain 1995 3 Beck 1989, Belk & Glaum 1990, Glaum & Roth 1993 1 Holland 1993

The above-mentioned contributions are summarized in Chapter 2 or Appx.2.

The finding is that the majority of studies have not even included economic exposure as a subject of investigation. This is true of the early empirical studies but it is particularly so of the theoretical investigations.

2.2 Disadvantages of the neoclassical approach.

The finding in Chapter 2 is that the usefulness of models to incorporate competitors' reactions is limited by informational requirements. As this study seeks to investigate the actual decision-making process whereby actual firms have attempted to manage prolonged currency overvaluation, modelling is an inappropriate medium compared to one of investigating the actual decision-making structures and constraints facing the individual

firm.

Hypothesis-testing via econometrics is also rejected, since to test the relationship between U.K. corporate profits and periods of sterling overvaluation omits essential detail of the structure whereby individual firms can or cannot manage overvaluation. Further, the likelihood of misspecification as per Moens' study¹ is significant. In particular, aggregate data for corporate profits would include MNCs which derive a significant part of their profits from foreign operations and would not include in the sample those firms that ceased to exist because they had failed during the overvaluation.

The merits and demerits of the research methods are summarized as follows:

¹see Chapter 2.

TABLE 4.2
MERITS AND DEMERITS OF RESEARCH METHODS IN INVESTIGATING CORPORATE CURRENCY
MANAGEMENT - A SUMMARY

Approach	Merits	Limitations
models	can be used to generate predictions or hypotheses	-models of economic exposure are non-operational because it is impossible to obtain data on competitor reactions -the predictions are about limited issues, with heroic assumptions
econometric tests	can obtain exact data on a relationship	-do not prove causality -open to misspecification -represent partial analysis as aggregate data is used
actual experiment	can assess exactly the impact of exchange rate changes on the firm	-costly. Firms are unlikely to cooperate unless the researcher indemnifies them against losses. -results apply to subject firm only. -exchange rate changes would be those of the market, not those desired by the researcher
postal survey	-can obtain data for a large sample -useful when little is known on the sample -inexpensive	-responses depend on quality of questions -responses depend on who responds and their motivations in replying -lacks explanatory power (see section 7.2)
multiple interview	-avoids problem of non-response in postal surveys -avoids ambiguity and response errors possible in postal surveys	ditto
case study	-permits detailed information on economic exposure and its effectiveness to be investigated -permits competitor reactions to be investigated	-time consuming to gather data -cannot replicate to the whole population of firms

2.3 The empirical approach.

Previous postal surveys are exhaustive, but they are concerned with exchange rate volatility and they do not refer to any particular period of exchange rate misalignment. Further, as the firms are all anonymous, it is impossible to trace how exchange rate misalignment has affected individual firms and how they, and their competitors, have reacted to it. For this, a case-study approach is the most suitable medium.

Whilst surveys² find that firms are not managing economic exposure effectively, if at all,

²see Appendix 2.

they do not prove the hypothesis that prolonged exchange rate overvaluation cannot be managed at the level of the firm. Evidence such as output cutbacks and profits crises are required. Surveys include only the surviving firms, not those firms that have failed. An additional reason why the postal survey method is unsuitable to investigate the impact of prolonged currency overvaluation on firms is that the most pronounced overvaluations in sterling and the US\$ were in the early 1980s and the actors who were responsible for managing their impact are likely to have moved on.

2.4 Typology of the case study method.

The advantages of a case-study approach are principally fivefold (Scapens 1989:7-9). Applying these to the management of prolonged overvaluation, the method can describe the existing system of management within individual firms. Differences or similarities in practice between different companies can be highlighted. Secondly, illustrative case-studies can illustrate new or improved practices and their effectiveness. Thirdly, experimental case studies can examine the difficulties of implementing new procedures for managing prolonged overvaluation and to evaluate the benefits and costs of such procedures. Fourthly, exploratory case-studies explore the reasons for particular management practices as a first step for generating hypotheses for empirical testing at a later stage. Fifthly, explanatory case-studies attempt to explain the reasons for particular management practices to seek out specifics, rather than to produce generalizations.

It is necessary to select methodologies for illuminating the case-studies to address the research objectives. Cases are not a methodology but a method. As a method, their advantage is that they can investigate the actual practice of foreign exchange risk management within firms. The basis of the case-study method (see Mohr 1985) therefore lies in positivism, whereas the research method of models is based on normative theories. The methodological advantage of the positive approach is that it is concerned with the way in which variables interact in the real world, but it is quite separate from the normative decisions which are up to individual decision-makers (Scapens 1989).

2.4.1 Conclusion.

Case-studies can provide an analysis of how firms can or cannot manage prolonged overvaluation that other research methods cannot.

2.5 Disadvantages of the case-study research method.

As a research method³, the principal risk is that the cases selected are special cases⁴ and not generalizable.

A second risk is lack of rigour in the collection, construction and analysis of the empirical data that give rise to the case-study. This lack of rigour is linked to the possibility of bias. Bias may be introduced from two sources. One is the subjectivity of the researcher, i.e the evidence presented is the investigator's interpretation of the evidence (Yin 1993:70). Second is possible bias from the field informants on whom the researcher relies to obtain an understanding of the case under investigation (Hamel 1993:23). Relevant data may be ignored.

A third risk is that the subject may request anonymity. This may mean that data has to be disguised and altered, such that the case becomes mere fiction (Easton 1982:2).

The above disadvantages need to be assessed in the context of the purpose of the research, which is basically to validate a hypothesis. Hypotheses can be formed from a focused critique of the literature relating to the subject under investigation. Indeed, explanatory theories were all preceded by descriptive theories on which they could base themselves (Houle 1986:45). The case-study research method is descriptive and is

³As an illustrative, or teaching method, disadvantages of cases are principally fourfold. Cases can become obsolete. Secondly, learning from case-studies does not necessarily translate into better business performance, either on the part of the individual student or of the organization which is the subject of the case.

A third criticism of cases is that they rarely provide a holistic view, despite claims to the contrary; that they may ignore the dynamic process of management; and that cases tend to be solution- and information-oriented, not people-oriented.

Fourthly, cases do not stimulate real-time learning of business management in that cases do not tend to simulate learning under conditions of uncertainty. The case also lacks the essential ambiguity and the stress of reality. Business schools can use an additional teaching aid that may make up for shortcomings of cases, namely project work.

⁴Easton 1982:1 defines a case-study as a description of a situation facing an organization.

espoused to permit an understanding of the empirical foundations of theory, since the test of a theory is its empirical validity. Theory must then be validated through a specific object of study based on deductive reasoning. Thus all theories are initially based on a particular case. The in-depth study of this case will tend to elicit more hypotheses that can be validated by other cases. This process will assess the general applicability of the cases (Hamel 1993:29).

Thus whilst the case-study research method is microscopic, "it has nevertheless become the ideal tool for micro-(sociological) investigation. Studying other cases makes it possible to moderate not only the limits, but the failings, of such a micro-study, as comparison between the cases puts the first study into perspective" (Hamel 1993:34).

Giddens (1984) asserts that the case-study is only microscopic for want of "a sufficient number of cases" but that the appropriate number of case-studies depends on the study's actual aim. Thus the value of representativeness is not so much a function of the case under investigation as it is a function of the object of study⁵. In this thesis, the object is to investigate whether the firm can immunize itself from the effects of prolonged currency overvaluation. Thus the investigation can be constructed from a single case, so long as the single case proves adequate to meet the objectives of the investigation (Hamel 1993:35). Hamel goes further and states that (p.35):

"Even if the number of cases is a significant factor in the definition of an... investigation, it is not a paramount issue. Nor could this issue, in and of itself, serve to define such an investigation. In other words, although the number of studies conducted is important, no...investigation can be defined on the basis of that issue alone."

To move from the microscopic to the macroscopic, the case may be regarded as an

⁵The virtue of models is that the explanation for a phenomenon determined through a model has general applicability and thus does not necessarily apply to any particular case or even adequately address the object of study.

The model and case methods can be reconciled in terms of the object of study. Thus, for example, econometric models showing that world trade volumes have increased under floating exchange rates is a general observation, but it may not apply to specific cases of exchange rate volatility (eg. misalignment) and to particular firms.

experimental prototype. This makes an analogy with laboratory tests in the exact or natural sciences. General applicability results from the set of methodological qualities in the selected case, and the rigour with which the study, or the analysis resulting from this experimental prototype case, is conducted. Yin (1989:21) has introduced a distinction between analytical generality and statistical generality. Yin believes that the case-study, "like the experiment, does not represent a 'sample', and the investigator's goal is to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization)".

Regarding bias and subjectivity, according to Hamel (1993:31):

"Recent research on ideology and common sense tends to show that the value of meanings given by actors to their social experiences is relative to such experiences. Under such circumstances, it would be difficult to confer a negative status (of bias) on them, because these meanings constitute the direct knowledge that social actors have of their experience or of their social reality."

Regarding bias introduced from field informants, it should be noted that the natural bias of treasurers is to show that they have performed well, rather than to provide evidence to the researcher that they did not do what the treasury was supposed to do, namely manage foreign exchange risk. What the case-study can uncover instead from treasurers is that they did what they were able to do within the constraints facing them. Thus one value of the case-study is to examine the constraints and indicate whether these constraints are also likely to be present in other firms.

2.6 Previous case studies.

Only very few examples of the case study approach exist. Millman (1990) has written cases for a non-specialist readership on how selected U.S. MNCs set about managing their currency risk. Srinivasulu (1981) has written a brief case study on how Volkswagen has changed its strategy between 1970 and 1980 in response to changes in the US\$/DM nominal (but not real) exchange rate. By neglecting real exchange rate changes, Srinivasulu neglected both economic exposure and currency overvaluation. Collier & Davis (1985,1990) have used the case study method to compare how U.K. and U.S. MNCs manage transaction and translation exposure. They do not examine economic

exposure. Lewent & Kearney (1990), both treasurers of Merck & Co., have written a case study which includes details of how Merck manages its economic exposure. The fact that Merck is a pharmaceutical company renders the case study less useful to other companies with low value-added production and differing risks. The only known academic documentation of individual companies' economic exposure management is that of Holland (1993). However, these are brief illustrations of a few paragraphs rather than valid examples of the case-study method. To date, no case-studies have been documented which have the purpose of demonstrating that firms have not been able to manage exchange rate misalignment, in the sense that they have been unable to immunize themselves from its adverse effects.

If firms are not able to manage exchange rate misalignment, the key question for treasurers is how misalignment arises in the first place and what they can do to prevent it arising. One aspect of the empirical research is to investigate the attitude of U.K. corporate treasurers to exchange regime. The postal survey method has been selected to investigate this (see section 7).

3. RESEARCH METHODOLOGY

3.1 Research Design

A two-stage survey was used to investigate how corporations manage economic exposure. The first stage consisted of preliminary interviews with relevant actors to assess the suitability of companies as subject material for case studies. The process whereby the case studies were selected is described in section 4. The second stage involved the documentation of case-studies. These appear in Chapters 6 to 8.

3.2 Sample Structure & Selection Method.

Which corporations are selected for analysis is an important choice. This is because, firstly, no corporation is the same in terms of its exchange risk profile and secondly, no country is the same either.

3.2.1. Selection of countries.

The U.K. and Germany are selected as they represent two contrasting financial environments facing firms in each country - one of sporadic misalignment in the U.K. and relative real exchange rate stability in Germany (up to 1994). The two countries also exhibit a high ratio of trade to GDP; a high degree of openness in terms of access and competitiveness given that the two sample countries produce similar goods; a high degree of interaction between firms and governments on exchange regime; and a high degree of interaction between governments in deciding exchange regime⁶.

The U.K.'s largest export market is Germany. Sterling overvaluation is most crucial against the DM. Since 1973, except for a brief interlude in 1990-92 when the pound was in the ERM, and in the mid-1980s, when the pound shadowed the DM, the U.K. and Germany have pursued differing exchange policies. The German authorities have pursued a policy of currency stability whereas the U.K. has not. Furthermore, the U.K. has experienced massive lobbying on the part of firms regarding the value of the exchange

⁶These latter two factors are not evident to the same extent between an E.U. member state and the U.S. and Japan, as they are between E.U. member states.

rate⁷. Corporations in both countries are active lobbyists on exchange regime through the Association for the Monetary Union of Europe (AMUE). Moreover, the E.U. provides a ready institutional framework in which corporate concerns can be both articulated and acted upon in public policy. In terms of international monetary relations, the most realistic prospect for the creation of an alternative world currency to the dollar is emerging from the E.U. Thus the role of corporations in this formative stage in international monetary relations is of significant interest.

The selection of these two countries stems additionally from the differential in growth performance that has for long been a focus of the economics literature. However, this literature (see, for example the survey article by Crafts 1992) has focused on macro-economic variables in the two economies. The research that has been conducted at company level in turn focuses on comparisons of technical organization and education and training levels of the workforce (eg. NIESR 1994 on the chemical and engineering industries). No research has been traced which examines the impact of currency overvaluation on individual competing firms and how these competitors are able to manage it on a comparative basis, either via treasury hedging or via adjustment in product-market strategy.

The selection of the two time periods 1979-83 and 1990-92 is precisely because these were periods when the U.K. currency was grossly overvalued, as illustrated in **Charts 1.1 to 1.4**. The 1987-92 period is selected to investigate how a U.K. exporter and its German competitors fared under US\$ misalignment.

An additional reason for selecting the two periods of sterling overvaluation is to examine whether two selected U.K. companies were able to learn from the first period by adapting themselves when the second period occurred.

The above focus on the U.K. should not deflect attention from the fact that corporations in other countries have also been subject to major discontinuities in the domestic

⁷This has found institutionalized form in the CBI.

exchange rate. For example, Swiss companies suffered from the sharp real appreciation of the Swiss franc in 1978-80. U.S. companies similarly suffered prolonged overvaluation of the US\$ between 1980 and 1985 (Charts 1.5 and 1.6). Whilst an investigation of how individual U.S. corporations fared would be timely, this would involve researching several additional case studies. Time and space constraints do not permit inclusion of U.S. corporations.

4. SELECTION OF CORPORATIONS.

The effects of changes in real exchange rates will be significant on firms when three factors are present. First is a high ratio of exports as a percentage of domestic turnover. Second is a highly competitive market place. Thus not only export markets are lost under overvaluation, but significant inroads are made by competitors into the domestic market. Thirdly, the production process is subject to significant indivisibilities. Long lead times exist before investment projects come onstream and production cannot easily be transferred to locations where exchange rates are not overvalued. The above three features are characteristic of much of manufacturing industry.

Having narrowed down the selection of firms according to the above three factors, five further selection principles are applied:

4.1 Membership of the Association for the Monetary Union of Europe (AMUE).

Three reasons for attempting to draw the entire sample from AMUE members can be advanced. One is that corporations would not rationally lobby for a single currency unless they believed that they could benefit. Thus members recognize the saliency of the linkage between currency risk and monetary integration and secondly, believe that they need to express their political weight in favour of a single currency. Thirdly, it is hypothesized that firms are forced into political action out of desperation at not being able to manage currency overvaluation.

Investigation of the motives of the AMUE founders supports the expectation regarding issue saliency, but not the hypothesis that they formed or joined the AMUE because a single currency can prevent prolonged currency overvaluation. The founders were all MNCs⁸. None has suffered a profits crisis or a severe management problem on account of currency misalignment. The currency risk profiles of the companies display marked differences. Total Oil and BAT are both heavily weighted to a US\$ exposure, whereas the other companies are not. Fiat, Solvay and Robert Bosch's main production is

⁸principally Total Oil (France), Fiat (Italy), Philips NV (Holland) and in the U.K., BAT.

domestic, but both are heavily dependent on exports to other E.U. member states. Only Philips produces throughout the E.U.

A principal motive for setting up the AMUE is "the elimination of unwanted costs stemming from the present multiplicity of currencies" (AMUE 1992). However, all the founders, being MNCs, have sophisticated treasuries employing currency dealers to profit from currency trading. The fact that the AMUE states that it "is greatly pleased to take in SMEs, which will get the most benefit from the elimination of unwanted costs" (AMUE 1992) suggests that the founding MNCs have set up the pressure group for benevolent reasons. Lending weight to such a hypothesis is evidence that Philips deliberately engages in price discrimination, given the non-transparency of prices arising from the multiplicity of currencies in the E.U. Further evidence of the benevolent motive is that the chairmen of Fiat (Agnelli 1991), Philips (van der Klugt 1989) and BAT (Sheehy FT 9.7.1993:20) have all frequently made speeches exhorting the use of the ECU, yet none of these companies has put their chairmen's exhortations into practice⁹.

Why these companies founded the AMUE is stated as "following suggestions from the founders of the EMS and of the ECU, namely the French President and the German Chancellor" (AMUE 1992). The founding chairmen are all an exceptional part of the business elite in terms of their desire to influence public policy¹⁰.

4.1.1 Conclusion.

Given the above factors, AMUE members are not suitable to use as case-study material to demonstrate the difficulties firms experience in managing prolonged currency overvaluation.

4.2 Degree of domesticity/multinationality.

A second criterion for sample selection would be to use companies across a broad

⁹Why corporate treasuries have not been able to substitute into the ECU in place of an overvalued domestic currency is the subject of a separate investigation (Jenkins 1994).

¹⁰The chairman of Total, for example, is a former President of the European Commission.

spectrum, from purely domestic to multinational, in order to demonstrate that examples from all categories could experience difficulties in managing prolonged overvaluation. Table 4.3 indicates a broad scale of such domesticity/multinationality.

TABLE 4.3
CLASSIFICATION OF FIRMS BY INVOLVEMENT IN DOMESTIC AND INTERNATIONAL MARKETS

Type of firm	Product markets	Factor markets	Foreign subsidiaries	Debt capital	Equity capital
Domestic 1	D	D	-	D	D
Domestic 2	I	I	-	D	D
MNC 1	I	I	I	D	D
MNC 2	I	I	I	I	D
MNC 3	I	I	I	I	I

D = high involvement domestically

I = high involvement internationally

Source: adapted from Holland (1993:3)

Ideally, it would be useful to select case studies from each of the above categories. The scale is also useful to indicate how companies change their rankings in response to diversification or to currency risk management. BL is an example of "MNC 1", but BL's individual subsidiaries of Jaguar and MG/Triumph during the 1979-83 overvaluation can be considered to be in the "Domestic 2" category, since neither produced abroad. At the highest tier, ICI is in category "MNC 3".

4.3 Relative sophistication of treasury.

Given the obvious conclusion that the absence of a treasury in small companies is a handicap, case-studies of large companies should be selected in order to investigate whether the highest degree of sophistication of the treasury is essential for management of prolonged overvaluation.

The degree of sophistication can be scaled according to degree of domesticity/multinationality, but such a classification is misleading if it suggests it is a yardstick of the effectiveness of the treasury. The treasurer of a small firm might have a seat on the board and take initiatives in product-market strategy, eg. Lesney, thereby reaching the highest level of treasury involvement in product-market strategy which is

called for in this thesis.

By contrast, ICI's treasury, which is in the highest category of MNC 3 on account of its degree of involvement in international **financial** markets, will be shown in the case-study to have little input in strategic adjustments.

The scale can also be used to compare competitors. ICI's treasury can be categorized as more sophisticated than those of its German rivals, since during the 1979-83 overvaluation, ICI was already issuing debt and equity in foreign currencies. The case study will investigate whether ICI treasury's sophistication is an advantage in terms of the management problems arising from overvaluation. The limited role of the corporate treasury however, can be seen in that BL treasury's international involvement was hampered by BL's credit rating.

4.4 Degree of product diversification.

In general, a company with a single or narrow range of products has less opportunity to make strategic adjustments - such as to diversify its product range - in response to prolonged overvaluation than a company which already has a diversified product range.

Jaguar is a good example of dependency on a single or narrow range of products. ICI is a good example of a company with a diversified product range with part of turnover coming from high-margin pharmaceuticals and paints which may be able to withstand currency overvaluation.

The system of classification in **Table 4.3** can also be used to demonstrate that the German competitors to the subject companies of the case studies had higher involvement internationally in product markets, but have tended to remain domestic in debt and equity markets. This will be useful to investigate whether the greater involvement in product markets conferred a more significant advantage to the German companies than being less involved internationally in debt and capital markets than their U.K. competitors.

4.5 Degree of geographical diversification of production.

In general, restricting production to the domestic economy can be expected to increase vulnerability to prolonged overvaluation of the domestic currency. By contrast, a high involvement internationally in factor markets should diminish the impact of an overvalued domestic currency.

Jaguar and Lesney can be considered to be good examples of companies whose concentration of production in the domestic market and high dependence on exports left them vulnerable to sterling overvaluation. By contrast, ICI is a good example of a company which is highly diversified geographically. Could this protect ICI from prolonged overvaluation, particularly in relation to its German competitors, which may also be geographically diverse ?

The significance of geographical diversification can be seen in that in the auto industry, BMW did not produce outside Germany until 1994 and its sourcing in factor markets was also largely domestic. However, although BMW's involvement has been largely domestic in terms of factor markets, BMW could not be placed in the "Domestic" category since its involvement in product markets has long been international. This is evidenced in BMW's strong marketing and distributional skills. However, the high international involvement in product markets leaves BMW vulnerable to possible DM currency misalignment on account of its high export dependence. Daimler-Benz can be categorized as "MNC 1" during the 1979-83 sterling overvaluation period of the case study, but has since transformed itself into "MNC 3". Similarly, BMW has transformed into "MNC 2" but has not felt it desirable to seek an overseas stock market listing which would place it in the highest "MNC 3" category. Reasons for the preference of the German companies to remain at the domestic level in capital markets are summarized in **Appendix 7**. Similarly, in the chemical industry, Bayer, BASF and Hoechst are all in the "MNC 2" category, whereas ICI is in "MNC 3".

4.6 Conclusion.

The above system of classification for selecting case studies is not necessarily complete for additional reasons to those mentioned above. Differing industries have a differing

optimal firm size. The larger the firm size, the more likely it can be expected that the firm will be able to manage exchange risk. One reason is because the firm is more likely to have a treasury department which would provide expertise in managing transaction exposure¹¹. A second reason is that large firms are more likely to have the resources to withstand prolonged overvaluation by, for example, diversifying abroad. However, the larger the firm size, the less the involvement the treasury may have in strategic adjustment¹² - and the less easily the firm may be able to strategically adjust itself compared to a smaller, nimbler enterprise. Also, firms which are diversified may not derive their income from any one particular industry, but from several. The significance of this is that the industries may not be balanced in terms of economic exposure, and the firm's industries may all be highly vulnerable to currency risk eg. Daimler Benz's involvement in both the aircraft and car industries.

In conclusion, the selection of appropriate case studies is not a simple matter. However, for the purpose of documenting disequilibrium situations, the simplistic system of classification in Table 4.3 is adequate.

¹¹though it is not assumed that the existence of a treasury department will result in the ability to manage exchange risk, i.e. including economic exposure.

¹²One of the treasury's roles is to provide input to business divisions on future exchange rates, but the treasury's role in the strategy of business divisions is diminished by the fallibility of forecasts.

5. SAMPLE SIZE.

The selected case-studies are not a randomly-picked sample at all but are hand-picked according to the above selection criteria. This does not indicate that the case studies are special cases, for four reasons.

Firstly, it is not the case-studies alone that provide the evidence, but the previous surveys, summarized in **Appendix 2**, to which the case studies are merely an adjunct.

Secondly, the case-studies permit far richer detail of a different type than that gathered by the surveys. The strategies of the individual firms and their constraints, compared with competitors, require substantial detail. Given the limit on length of Ph.D theses, a doubling of the number of case-studies would involve the sacrifice of necessary detail.

Thirdly, once it is demonstrated that the treasuries of MNCs cannot manage exchange rate overvaluation, then small firms without treasuries can, a priori, be expected to fare even worse.

Fourthly, the three case-studies examine the problem of currency misalignment from a different angle (see sections 4.4-4.6).

5.1 Conclusion.

Although preferable to have more than three case studies, the three are arguably sufficient to demonstrate the hypotheses of this thesis.

6. DATA COLLECTION METHODS.

6.1 Primary sources.

Firm-specific primary data was collected via a mailed questionnaire and via semi-structured face-to-face and telephone interviews and written correspondence. The direct interface was necessary to obtain unpublished information on German corporations' U.K. sales and profits and to assess the reactions of U.K. companies to the sterling overvaluation. Similarly, the case-study on the possibility of ECU-denomination was highly dependent on the cooperation of the finance directors and treasurers in the subject companies. An additional reason for the semi-structured multiple interviews was that the case-studies focused primarily on how the subject companies manage their economic exposure. This is itself a highly bespoke function since each company's market position and vulnerability to currency risk is different.

6.2 Secondary sources.

Secondary data comprised three main sources.

Firstly, company annual reports provide information on trends such as profitability. However, they are of limited usefulness since they often do not separate out the profitability of sales across borders, or may not even give data on sales in specific countries.

Secondly, secondary sources such as the Financial Times Top 100 U.K. exporters provide aggregate data on exports, and rankings of companies in terms of exports. Data from a variety of sources such as brokers' circulars and press articles, industry surveys from the Economist and Financial Times, can be used to build up a picture of the company's strategy prior to interview, when the unknowns can then be addressed.

Thirdly, macroeconomic data was accessed from statistics published by the OECD and IMF. Time series on various indicators was charted using Datastream.

7. SURVEY QUESTIONNAIRE

7.1 Objective

Using financial instruments to hedge a currency exposure is in reality an attempt to manage the symptoms, rather than dealing with the underlying cause. To the extent that treasurers perceive this, the logical corollary would be for treasurers to recognize that they should seek to prevent currency misalignment from occurring in the first place. To investigate whether this is the case for the U.K., U.K. treasurers' preferences on exchange regime were surveyed. The rationale is that one constraint on governmental freedom to produce currency misalignment would be obligations which result from belonging to an exchange regime. The U.K. is a founder member of the EMS, but the U.K. government refused to join the ERM at the time of its foundation in 1979. Six member states agreed to keep their exchange rates within narrow 2.25% bands either side of a central rate fixed to the DM. Throughout the 1980s, U.K. corporate treasurers had to manage far greater real volatility in their domestic currency than their German competitors.

The survey was conducted six months before the U.K. joined the ERM in October 1990 and one objective therefore was to ascertain whether U.K. corporate treasurers wanted the U.K. to join the ERM, at what rate and within what bands, and whether the regime change should be taken further to monetary integration.

It is noteworthy that no previous investigation has been made and that none of the empirical investigations into foreign exchange management provided any information from which conclusions can be drawn. Every one of the empirical surveys assumed the exchange regime as exogenous and simply asked respondents what their management practices are, given existing institutional arrangements. These arrangements are floating for the U.S. and U.K. and, for Germany, a combination of semi-fixed exchange rates within Europe and floating against the US\$ and yen. Thus new work had to start completely from scratch.

7.2 Advantages and disadvantages of the survey method.

The survey was necessarily postal on account of the wide geographical spread of the sample and the large size of the sample. Alternative methods of personal or telephonic interview would have been far too expensive. The defined group was of corporate treasurers only. Other possible respondent groups could be chairmen or chief executive officers. Responses from these groups on exchange rate preferences - but not regime - were already obtained by the CBI from its members. Thus one purpose of the research was to investigate whether any significant differences existed between the preferences of U.K. corporate treasurers and those of their superiors. An additional advantage of the postal survey method over multiple interviews is that respondents are given time to consider their answers.

Limitations to the postal survey method are firstly, the researcher defines the questions and the responses are only as good as the questions that are set. The questions were therefore kept as simple as possible and the range of responses to each question kept to a minimum.

A second drawback to the survey method is its lack of explanatory power of the practices used by firms. It was recognized in advance of the survey that whilst U.K. treasurers might favour monetary integration in the E.U., such a response could be inconsistent with their actions. For example, if they acknowledge the risk-reduction properties of the ECU as against sterling, then why are U.K. treasurers not using the ECU on any significant scale? Similarly, if survey responses indicate that treasurers are in favour of monetary integration, then are they taking action to secure monetary integration and if not, why not? The lack of explanatory power of the responses inherent in surveys would thus logically involve hypotheses to be formulated which would require further research.

7.3 Procedure.

In April 1990, the entire membership of the U.K. Association of Corporate Treasurers was mailed a questionnaire (see Appendix 1). Four measures were taken as an aid to maximizing the response rate:

Firstly, to avoid the problem of misdirection, the questionnaire was mailed directly using the names of all members of the ACT as per its regularly updated mailing list. A high degree of personalization was thus achieved. The envelopes bore the name of the Association. The intention was to reduce the possibility that the questionnaires would be regarded as unsolicited junk mail.

Secondly, the questionnaire was accompanied by a signed letter from the Secretary General of the ACT requesting members to complete it. This acted as an official endorsement.

Thirdly, the anonymity of respondents was guaranteed. It was hoped that this would both facilitate response rates and prevent respondents answering in a "public relations manner".

Fourthly, to avoid misinterpretation, the questionnaire was kept as short and simple as possible. To avoid pre-programmed responses, the concepts of exchange rate misalignment and economic exposure were purposefully not mentioned.

7.4 Nature of sample.

The membership of the ACT comprises those with a broad range of experience, ranging from treasurer and finance director of large MNCs to those who have just passed the association's examinations and have a minimum of two years' practical experience in treasury work. Not all the firms represented are manufacturers nor are all firms British. Most firms represented are U.K.-domiciled, but the subsidiaries of foreign MNCs in the U.K. are well represented. In consequence, a good representation of treasurers' views on exchange regime could be obtained.

7.5 Typology of Questions.

The first three questions sought treasurers' opinions on the completion of the single market and its relation with internal exchange rate stability. Questions 5 to 7 sought treasurers' preferences on the desirability of sterling joining the ERM and at what rate and within what bands. Questions 8 to 12 sought treasurers' preferences on exchange

regime and, if in favour of monetary integration, what form this should take.

The questions were of four types:

1. those which require a tick to record a certain classification.
2. ratings scales.
3. open questions.

Only four questions out of twelve were considered to warrant an open category. No questions requiring rankings were included in order to avoid subjectivity.

The first type of question produces nominal data which could be analysed using crosstabulations. Ratings scales produce ordinal data. In statistical terms, correlation analysis should not be applied to ordinal data, but in the social sciences this restriction is widely ignored¹³.

7.6 Analysis of results.

Of the 1150 questionnaires sent out, 210 were returned, giving a response rate of 18.3 %. This was disappointing when it is considered how highly personalized the mailing of the questionnaire was and considering its ACT endorsement. However, in terms of the general yardstick for response rates in the social sciences of around 20%, the response can be considered adequate. This is particularly in view of evidence that the respondents tended to occupy senior positions in their firms and had definite views on the subject matter. By contrast, the poor response from relatively junior members of the treasury profession can be deduced to result from their relative lack of knowledge of the subject. Thus their views can be considered to be of less interest to the research. In consequence, the poor response is not a serious impediment to obtaining useful conclusions from the survey.

¹³According to Havlicek and Peterson (1976:1334), the Pearson correlation coefficient can be used in nearly all situations in which there is a need for a measure of the relationship between two variables regardless of the shape of the distributions of scores or the type of scales being used. Thus Pearson's r can be computed between samples of scores which are skewed in the opposite direction or same direction, when one distribution is normal and the other non-normal, when the type of scale used for either or both measures is non-interval, or any combination of these violations, and know that probability statements will be fairly accurate.

The data from the responses was not analyzed statistically. This was partly because it was not intended to classify the data according to industry, size of firm, nationality of firm etc. Another reason was the massive uniformity of the response, with 86% in favour of sterling joining the ERM. The small minority of responses against exchange rate fixity was not significant. In several instances, multiple responses for the same firm gave conflicting results. eg. BAT Industries plc.

8. CONCLUSION.

The U.K. and Germany are selected for an empirical study of the comparative impact of exchange rate misalignment on corporations. The impact of sterling overvaluation on ICI and Jaguar is documented for the periods 1979-1983 and, in the case of ICI, also for 1990-1992. The impact of US\$ misalignment on Jaguar is documented for the period 1987-93.

To obtain a comparative effect, how German competitors fared relative to ICI and Jaguar is also examined.

A large U.K. corporation which failed at the time of sterling overvaluation, Lesney Products, is also documented.

8.1 Overcoming the disadvantages of the case-study research method.

The three risks noted in Section 2.5 were avoided in this thesis by the following means. Firstly, replicability was tested by examining whether the impact of currency misalignment on the subject firms was also evident in industry-wide data. Where comparison is made with Germany, macroeconomic data is also cited. This nevertheless leaves open the possibility that certain industries might be better able to manage misalignment than those selected in the case-studies. This nevertheless does not invalidate the cases.

It is useful to delineate two polar cases in which deductive reasoning might lead to the expectation that firms should be able to manage prolonged currency overvaluation without difficulty. One concerns protection from foreign competition via the production of non-traded goods. The other concerns the production of traded goods which are protected from foreign competition by patents.

The polar case of the production of non-traded goods is that of the barber, who also enjoys additional protection from local customer loyalty. This still does not mean that

barbers are immune from the effects of currency overvaluation; the misalignment syndrome and associated high interest rates, recession and unemployment may result in a significant cut in demand for haircuts, particularly in localized areas of high unemployment. This therefore underpins the thesis even in the case of non-traded goods. Whilst other factors, such as a change in fashion to shorter hair, can offset the impact on barbers of the misalignment syndrome, a strength of the case-study approach is that it is intended to include all possible factors. To avoid bias, the proper procedure is to use rival hypotheses and rival theories as quality control (Yin 1993:112).

A second polar case which might invalidate replicability is where the effects of overvaluation might be diminished even in the case of traded goods. For example, patents, such as on pharmaceuticals, may give rise to very high margins and protection from foreign competition. One of the case-study firms, ICI, derived 67% of its profits from pharmaceuticals in 1992, yet this did not prevent it from suffering a profits crisis during the 1990-92 sterling misalignment.

Regarding subjectivity, the advantage of the case-study method is that it permits investigation of alternatives. Thus in the example of barbers, barbers can be asked what they themselves believe impacts on their business more - is it changes in hair fashion or recession or some other factor? Similarly, the possibility of omitting vital information was reduced by asking the key practitioners to read the case-studies and inviting their comments. Thus where some information is unobtainable, such as the exact details of the external hedges which Jaguar and its German rivals implemented, the information is not necessary, since the treasurers can be asked themselves how they perceive the effectiveness of their external hedging. Similarly, the academic discipline underlying the case-studies was not one but several, so that the broad question "What are the major problems here?" - aside from currency misalignment - could be addressed in each case. For instance, the business strategy literature could be applied to ask whether "other factors" than currency risk, in the case of Lesney, for example, could be low price, a large unfocused customer group, or low distributor margin, providing reasons for inadequate distribution. Instead, it was found that significant "other factors" were a lack of expertise in product development and in selecting appropriate acquisitions. Similarly,

organization theory could be applied in the case of ICI to investigate whether organization was a hindrance to managing currency overvaluation. Similarly, ICI Paints was compared with that of Hoechst's paints subsidiary to investigate the significance of product quality and market penetration as "other factors" than overvaluation.

The third possible disadvantage of case-studies, that they become fictional in order to safeguard anonymity, was avoided. Only actual examples using actual data were selected.

The limitations of the case-study research method need to be seen in context - that whilst case-studies are special cases in that they are all individual, so too is the impact of currency misalignment. One of the hypotheses of this study is that firms need product-market flexibility in order to manage misalignment. The three case-studies selected are good examples of this requirement for flexibility. Jaguar, for example, was chosen as an example of what a high degree of inflexibility in both product and market strategy can mean for a business. One reason why Lesney was selected is because it benefited from a high degree of flexibility, with low fixed costs, based on inexpensive die-casting and makeshift rented factories; and low variable costs, based on the use of flexible female labour on part-time contracts. Yet even this high degree of flexibility was insufficient to prevent Lesney's failure. ICI was selected partly for its flexibility stemming from substantial geographical and product diversification, plus the resources (a strong balance sheet in 1979) to generate flexibility. Yet if a company such as ICI could not immunize itself against overvaluation, then it is difficult to conclude that many other U.K. companies could do so.

CHAPTER FIVE

THE CORPORATE APPROACH TO THE MANAGEMENT OF CURRENCY RISK

- THEORY AND EMPIRICAL EVIDENCE

1. INTRODUCTION

The purpose of this chapter is to examine the theoretical basis to the hypothesis that the conventional approach of corporations to currency risk management is inadequate to deal with the problem of prolonged currency overvaluation.

Section 2 outlines the conventional corporate approach to currency risk management.

Sections 3 to 5 summarize theory on currency risk management and document empirical evidence of what corporations themselves perceive their role is in the management of currency risk.

2. CONVENTIONAL APPROACH OF CORPORATIONS TO CURRENCY RISK MANAGEMENT - AN OVERVIEW

As Currency Committees only exist in the largest corporations, the organizational form for managing currency risk in most firms is the treasury, if these firms are large enough to have treasuries. Indeed, the treasury is conventionally assigned sole responsibility for currency management within the corporation.

The justification the Association of Corporate Treasurers has given for the delegation to the treasury of currency risk management is that currency exposure must be centrally controlled and integrated with liquidity management (ACT 1 1990:S.14). Whereas the treasury is assigned direct responsibility for liquidity management, the treasury's capability for liquidity management is encumbered in that it has only indirect responsibility for working capital control (Diagram 1.1).

For the treasury to effectively perform the other three tasks in the core, it is essential that it has an overview of the flow of working capital. Yet working capital control is part of the liquidity management function of the finance department of a corporation. The linkages are illustrated in Diagram 1.2.

Given the treasury's lack of control over working capital, except for an overview over budgets, it is necessary for the treasury to have frequent contact with the relevant line managers (ACT 4 1989:11.1). The purpose is to enable the treasury to have advance warning of any changes, adverse or positive, affecting working capital. Since the treasury is responsible for managing cash and forecasting cash flow, the cash forecast will in turn reflect parts of the product-market strategy. The cash forecast involves the treasury in a twofold function of forecasting both the size of the currency exposure and of the future cash flow. If suppliers are overseas firms which are paid in their own currency, the link between currency management and cash management can be seen immediately.

The uncertainty facing the treasury is that both the future local currency cash flows and

the exchange rate at which they can be converted into domestic currency are uncertain. In terms of parent company cash flows then, changes in real exchange rates can have a potentially dramatic impact. The treasury's approach to the problem is depicted in **Diagram 3.3**.

As described in ACT 1 1990:S.14 "the generally accepted methodology of currency risk management has the following six elements:" The treasury must first **define** the types of currency exposure; secondly **identify** exposed positions within the corporation; thirdly, attempt an **assessment** of exchange rates at future dates, at least within a range of expected values; fourthly, make a **simulation** of post-tax effects of exchange rate changes on the corporation; fifthly, decide whether to **accept risk** or to **avoid it** via hedging; and sixthly, once the senior management of the corporation has decided on its risk preference, it is up to the treasury to **design** a hedging strategy and to **implement** it.

The treasury's organizational role in the above is limited in three senses. As noted in **Chapter 1**, exposed positions are generally created by production and marketing personnel. The treasury's role is thus mainly reactive and reliant upon the production and marketing personnel for information on exposed positions. The treasury may nevertheless be consulted in the budgeting process.

Secondly, exposed positions can be subject to rapid change and reports can be out of date by the time they are received and consolidated by the central headquarters. In consequence, changes in foreign currency positions need to be anticipated (ACT 1 1990:S.14). Thus a need exists for the establishment of a forecasting system for future revenues and payments.

Thirdly, the issue of whether to accept risk or hedge it is generally not for the treasurer to decide, but is determined at board level (ACT 1 1990:14.1). Differing companies will have a differing attitude to risk which will be a natural outcome of differing industry characteristics, market structure, product and trading terms. Differing companies will

have a differing ability - or need - to use varying hedging techniques. The simulation exercises above will give an indication of exposure and of whether the company can bear it or need to hedge it fully. This reflects the bespoke nature of the treasury function.

In addition to the above limitations to the treasury's role, three additional constraints on the capability of firms to manage currency risk remain unanswered in the approach to currency risk management recommended by the ACT:

1. firms perceive that economic exposure is important to manage but many manage transaction and translation exposure instead (Walsh 1986¹, Beck 1989, Belk & Glaum 1992, Edelshain 1995).

2. firms perceive that the methods they use to manage economic exposure are ineffective (Cezairli 1988, Edelshain 1995). See Tables A.4 and A.5. This is because the methods used are principally financial, particularly the use of forward contracts and currency borrowing (Table A.3). Strategic and organizational adjustments necessary to manage the exposures are made by entities other than the treasury.

3. An additional and important part of methodology, though not included among the six listed by the Association of Corporate Treasurers, is that an *ex post* evaluation should be made of the corporation's efforts at currency risk management. If firms measure the effectiveness of hedging, it would provide an indication of the cost of hedging and indicate whether treasuries perceive themselves as risk averse or willing to accept risk. Empirical evidence is that firms perceive themselves as highly risk averse in currency risk management objectives (Blin et al 1981, Cezairli 1988, Panic 1991, Edelshain 1995). However, as the majority of firms do not appear to measure the true cost of hedging², it is necessary to examine the theory underlying corporate risk aversion to assess whether corporations actually are risk averse or not.

¹In Walsh's survey of 20 U.K. MNCs, 14 of the sample believed that currency risk management meant only the management of transaction exposure.

²see section 5.2.

3. IS THE TREASURY RISK AVERSE OR A RISK TAKER ?

It was noted in **Chapter 1** that only a small minority of corporate treasuries resemble banks in employing dealers to actively trade foreign currencies. However, if the bulk of firms are opportunistically exploiting currency movements in other ways, treasuries may still be risk takers rather than risk averters.

3.1 Defining risk.

Risk can be distinguished from uncertainty in that risk refers to the variance of a known probability distribution of outcomes. Uncertainty exists when all the possible outcomes are not known or when the probability distribution is unknown. The possible outcomes and the probability distribution of outcomes to changes in real exchange rates for a firm is not known, unless that firm is able to forecast perfectly future events. Such an assumption is unrealistic. Thus the current situation facing the firm is one of uncertainty, not one of risk. Lietaer (1971:12) asserts that a risk situation can nevertheless approximate the uncertainty problem. It can be concluded that the concept of currency risk is a valid one for practical purposes.

Oxelheim and Wihlborg (1987:9) also add the concept of financial risk to that of currency risk. Financial risk refers to the magnitude and probability of unanticipated changes in interest rates and costs of different sources of capital in a particular currency denomination. The authors stress the need to relate interest rate changes to changes in the general level of demand in the economy. However, they neglect that it is not only the cost of funds but the availability of external funding that is a major concern to the treasurer in dealing with crisis situations stemming from prolonged exchange rate overvaluation. Here the institutional factors associated with corporate funding are of relevance, since these differ across countries (see Appendix 6 for a comparison between the U.K. and Germany).

Oxelheim and Wihlborg (1987:9) subdivide currency risk into two elements, namely

exchange rate risk and inflation risk. This reflects the empirical observation that the purchasing power parity doctrine is unlikely to hold.

3.2 Finance and Economics Literature on Corporate Risk Aversion.

The purpose of this section is to note that a theoretical vacuum exists on the justification for the treasury and its stance on risk aversion.

Traditional finance theory normally takes a neoclassical view of the functioning of markets and its explanation of why the firm exists and its treatment of financial risk does not explain whether the firm is risk averse or not. The existence of the firm is explained in terms of (mainly) linear production functions with the rationale that indivisibilities in production factors enables some firms to reap economies of scale and or scope such that perfect competition does not exist. The value of the firm is totally determined by the value of its future cash flows. The financial structure is totally uninteresting as long as financial markets are perfect and real and financial decisions are taken separately from investment decisions. The financial model therefore cannot explain whether the firm is risk averse or not.

Knight (1921) argued that uncertainty was the reason for the firm to exist. The firm can earn "above economic rent" since entrepreneurs may believe they can assess the uncertainty better than the average individuals of the perfect competition model.

Coase (1937) argued against this on the grounds that those with more perfect information on the uncertainty could sell this information and that the entrepreneurs with the better information do not have to be an intrinsic part of the firm. Coase accordingly argued that the justification for the firm is that it replaces market transactions with command structures.

This approach was extended by Williamson to justify the firm on the basis of transactions costs and bounded rationality. Coase's approach was thus a forerunner of the literature on the implications of splitting ownership from the control of the firm. The relevance for

risk aversion is as follows.

In Chapter 2 it was noted that although shareholders are motivated to diversify their portfolios to reduce risk, this does not imply that firms should also diversify. Instead, in assuming efficient capital markets, finance theory implies that corporate diversification is redundant. This is because individual investors can diversify risk themselves just as efficiently, since they do not face higher transaction and information costs than corporations. The conclusion then is that firms do not need to be concerned about risk in their decisions and should focus instead on maximizing the expected return on their investments.

The above conclusion of finance theory is based on the assumption that shareholders are the only stakeholders in firms and that markets are completely efficient. The economics literature comes to a completely different conclusion on the corporate approach to risk by assuming that there are a range of stakeholders in the firm and that market imperfections exist. Once other stakeholders are introduced, pressures³ are exerted for the firm to behave in a risk neutral manner (Oxelheim and Wihlborg 1987:33).

Finance theory has nevertheless come to recognize (Dufey & Srinivasulu 1983) that if the costs of defaulting in the form of explicit bankruptcy costs and constraints on the use of assets are substantial, then rate of return variance should be a management concern even if it is the shareholders' interests which are ultimately the prime concern of management. The finance theory justification is that this variance could be related to the probability of default and, therefore, the probability that debt and stockholders will suffer direct costs arising from bankruptcy.

³Direct costs are associated with unanticipated fluctuations in a firm's output level, since the higher probability of insolvency threatens debtholders and employees and management. In addition, there are default costs such as the undervaluation of assets on liquidation. Fluctuations in output imply associated adjustment costs in terms of employee cutbacks and excess inventories. Cutbacks affect other, less direct stakeholders such as government and suppliers and lead to a more risk averse approach toward customers embodied in such forms as long-term contracts. Conflict between managerial and shareholders' objectives have long been part of the economics literature (eg. Baumol 1959, Cyert & March 1963). The conclusion of this literature is that shareholders' interests (i.e. maximizing the value of equity) are not necessarily the prime concern of management.

The above, whilst implicitly recognising risk aversion, has still not addressed the stance of the corporate treasury on risk aversion. Williamson (1975) argues that the "individuals" of the traditional neoclassical theory of finance will have problems in handling the complexity of an uncertain future and they will have to arrange costly conflict resolution models to manage the uncertainty. The uncertainty is too complex for the market to resolve in a transaction-cost efficient manner and has to be resolved via hierarchical sequential decision-making within a firm.

Such a justification for the treasury is an alternative contribution to that of Knight, from whom it is inferred that the treasury's role is the management of uncertainty. From Knight's approach, the existence of information asymmetries and incomplete markets logically result in the firm trying to establish systems to predict the future outcome - i.e. to create treasury information systems. Such a deduction is consistent with a primary motive of risk aversion.

If managing uncertainty is the principal justification for the treasury, then it may a priori be deduced from this approach that the treasury should be risk averse. What the above does not explain is why the firm engages in financial activities, how it develops its financial exposure over time and whether these are consistent with risk aversion or not.

If the explanation is cost advantage and know-how, this does not necessarily yield a prediction that the treasury is risk averse. Indeed, given the existence of segmented financial markets, manufacturing firms can circumvent regulations applying to banks and gain by doing so, whereas banks cannot. This suggests behavior consistent with risk taking rather than risk aversion. However, the operational activities of manufacturing firms can give these firms a natural hedge in their financial activities, signifying risk aversion.

Given that theory gives mixed results, it appears more appropriate to seek further evidence on the question of treasury risk aversion from empirical sources.

3.3 Differing Structures and Motivations of Corporate Treasuries.

Corporations have responded to a floating exchange regime by the assignment of specialist staff specifically to manage the financial risks arising from international transactions. The purpose of this section is to summarize the way in which such specialist staff are structured and what their motivations are in order to gain insights into the treasury stance on risk aversion.

3.3.1 Structure of Treasury Operations.

Before the onset of floating exchange rates, treasury departments were principally engaged in corporate funding, the investment of surplus funds and the management of interest rate risk. With floating exchange rates, both nominal and real interest rates became much more volatile, presenting a much bigger task of financial management to the corporation. Thus corporate treasuries have experienced a much expanded role and not only because of the additional assignment of responsibility for currency risk management.

However, not all firms had treasuries before the onset of floating exchange rates, nor do all firms have them now. Even if they do have treasuries, the level of sophistication of their activities is likely to differ significantly. This reflects the fact that the treasury is a bespoke function. In small firms, there is likely to be only piecemeal and haphazard management of interest rate and currency risks. It is accordingly appropriate to document the levels of development of the corporate treasury.

The development can be seen as part of the organizational response of corporations to their background environment. Large corporations in E.U. member states, particularly the smaller member states, have typically developed large international sales in relation to domestic sales. U.S. firms, by contrast, in benefitting from the size of the domestic market, have conducted their international operations within an "international division" whilst European firms often proceeded from a domestic structure to a global structure without passing the intermediate stage of an international division (Stopford and Wells 1972). This split between domestic and international business has also tended to have a

profound effect on the relative organization of treasury departments between U.S. and European firms. U.S. treasury activities have tended to be decentralized, reflecting a dualistic structure between domestic and international business. European firms, by contrast, have tended to evolve centralized global treasuries. The background factors that have contributed to this evolution include the fact that E.U. MNCs tend to have a much higher proportion of international sales and production in relation to sales and production at domestic member-state level. E.U. MNCs have long been acquainted with the need for multi-currency funding to balance the currency mix of assets. The need to obtain capital abroad at advantageous terms when national capital markets may be non-existent has necessitated a high profile treasury with a more global view than in the U.S. where funding problems could be solved domestically.

Motives for a centralized structure, such as improved financial control, indicate risk aversion. It is nevertheless not clear cut that the transition to a global treasury in E.U. MNCs has necessitated greater centralization. However, there are also motives tending to decentralize activities, such as the increasing complexity of international operations.

A paradox exists in that if currency management is centralized in the treasury, as it is in most large firms, then this should take responsibility for decisions having significant currency and risk implications away from production staff, which in turn makes the firm a risk-taker. In a study of 50 Swedish MNCs, Ahlander (1990:362) found that the financial activities of the firm have become very centralized, and that the industrial units increasingly have been left without responsibility for the structure of their balance sheets.

Three principal developments appear to account for this. First is that new technology and new ways to finance the firm's operations require that large amounts are borrowed and there is a need to borrow cost-efficiently directly via capital markets. Second is that a need exists to reduce working capital when the cost of borrowed funds increases. Third is that an essential reason for centralization has been the large gains that firms are able to reap from their treasury's external activities. These derive from centralized cash management which not only reduce transactions costs but, in Knight's (1921) view of the

firm, transform previously uncertain cash flows in differing currencies into assessable amounts, thereby transforming uncertainty to risk. With centralized borrowing in the capital markets and centralized currency management, the role of the banks has been transformed into one of providing local funding for working capital in the subsidiaries and in the sale of financial instruments to facilitate the firm's external hedging.

Such centralization is seen in the literature as essential in the management of transactions exposure (Collier & Davies 1985:328). In the Belk & Glaum survey of 17 UK firms, only one was found to have a completely decentralized exchange risk management function. Ankrom (1974) argues that without centrally set rules applicable to all subsidiaries, the MNC will not be able to implement a rational and consistent exchange risk management strategy on a group-wide consolidated basis. It will in particular be unable to utilize the full range of exchange risk management tools available, such as netting, leading and lagging etc.

Given the requirement for centralized currency risk management, the conclusion for firms which do have treasuries is that risks which are normally taken by line management ought to be instead transferred to the treasury, whilst SMEs (small and medium-sized enterprises) which do not have treasuries may not be managing the currency risks at all. Ahlander (1990:380) concludes that the treasury function has turned into a line management function, in line with the notion of a "heterarchical" firm with different units on the same hierarchical level as those they interact with.

3.3.1.1 Conclusion.

Only if the currency risks are properly managed can it be concluded that the operations of the treasury are risk averse. The treasury is risk averse and cost efficient in the management of transaction exposure. The trend to increased centralization suggests more efficient management of translation exposure, which again suggests risk aversion. However the lack of an effective treasury role - or of other entities - to manage economic exposure indicates that the firm is laying itself wide open to currency risk.

3.3.2 Motives of Corporate Treasuries - Empirical Evidence.

Kenyon (1990) distinguished three types of treasury - "dealers, smoothers and lockers" - in terms of their key risk attitudes. Dealers are treasuries which have been charged to profit by currency trading in the same way as the corporation does from its product market activities. Smoothers are treasuries which seek to smooth out the impact of exchange rate changes on the corporate results. Lockers are treasuries which seek to lock their exposures into current exchange rates as far as financial instruments reasonably permit.

Kenyon does not elaborate on whether his taxonomy of treasury risk attitudes is associated with particular industries, market structures, countries, or types of firms. Jacque (1979) notes that MNCs tend to be smoothers, deriving from the portfolio effect of diverse investments which serve as a natural hedge.

The key question is to what extent treasuries can be described as dealers, since the other two categories signify risk aversion. Risk aversion can be defined as an objective of minimizing the risk of losses. The surveys in Appendix 2 tended not to ask this question in the format of an objective, but rather to ask whether corporations perceive themselves as risk averse or as profit centers/loss avoiders.

Only 2 out of the 17 U.K. MNC treasuries surveyed by Belk & Glaum (1990) were run as profit centers. Yet in these two treasuries, the setting of profits targets from trading in foreign exchange was seen as arbitrary. This reflects the difficulty in setting up performance evaluation measures for the treasury function (Cooper & Franks 1987). It also reflects on why Lietaer (1971:14) specified that the treasurer's risk preference curve must be quadratic, i.e. the treasurer is more willing to risk a £1,000 loss with a probability of 50% than a loss of £50,000 with a probability of 1%. Empirical evidence underpinning such a risk attitude is Edelshain's finding that 53% of respondents believed it important to hedge all exposures arising out of currency trading.

An even more risk averse picture is evident in the 10 German MNCs surveyed by Beck

(1990). Two of the MNCs followed a policy of complete hedging of every open net position. Any diversion from this norm had to be given permission from the board. The single goal of currency management in these corporations was to limit possible exchange losses to a minimum. In 7 of the other corporations, an additional goal was added of leaving open the possibility of exchange gains. In these corporations, written regulations specified limits for open positions in each currency to a maximum of the currency stream ensuing from the underlying product market business in any period. In 9 of the 10 corporations, it is forbidden for the treasury to build up open positions which are supplementary to that ensuing from the cash flows of the underlying business, even in the case of a positive currency trend. In the tenth corporation, currency dealers were allowed to run their own positions, but only to a limited extent.

3.4 Conclusion.

Empirical evidence indicates that corporate treasuries like to perceive of themselves as highly risk averse. This is underpinned by additional evidence (Appendix 1) indicating the preference of corporations for exchange rate stability and that exchange rate uncertainty is undesirable because it adds an extra element of risk to other, more traditional business risks. However, risk aversion does not preclude treasuries from taking advantage of favourable exchange rate movements.

4. METHODS CORPORATIONS EMPLOY TO MANAGE PROLONGED CURRENCY OVERVALUATION - THEORY AND EMPIRICAL EVIDENCE.

4.1 Objectives.

Theory (eg. Cornell & Shapiro 1983, Shapiro 1992:250-277) indicates that prolonged overvaluation can only be managed by internal strategic means. Internal techniques are aimed at reducing or preventing an exposed position from arising⁴. The purpose of this section is to summarize the limitations to internal techniques for managing prolonged overvaluation.

4.2 Internal hedging by product divisions.

The ACT makes a fourfold classification (ACT 1 1990 S.43 to 46):

1. to price in the currency of costs.
2. to insert exchange rate variation clauses when bidding for export business.
3. to match costs and revenues in the same currency.
4. to retain the right to withdraw from the market if exchange rate movements become adverse.

In practice, only the last option may be feasible for U.K. exporters, though the options are individual to each corporation. By contrast, empirical evidence (Herrmann 1989) indicates that German exporters can price in DM, thus shifting the foreign exchange risk of exports entirely on the importer.

4.3 Internal hedging by the treasury.

Four main organizational techniques exist:

1. the centralization of currency risk management within the head office treasury itself. Physical centralization of currency exposure management involves physically channelling payments through a management centre. Such centralization permits two advantageous

⁴External techniques are used to insure against the possibility that exchange losses will result from the exposed position which the internal measures have not been able to eliminate.

systems to be set up, namely for netting (centralization of intra-firm currency payments) and re-invoicing (centralization of all currency payments). However, the advantage is merely that it minimizes external hedging, but external hedging is in any case not effective in managing prolonged currency overvaluation (see section 5.2). Further, leading or lagging payments is only feasible in a timescale of months, which is hardly effective for managing prolonged misalignment which might last several years.

2. the creation of formal reporting channels between the treasury and production and marketing functions.

To forecast non-contractual currency exposures, formal reporting channels with the production and marketing functions need to be set up. The object is to structure the firm in such a way to facilitate currency matching.

Shapiro (1992:251) lists four proactive marketing and production strategies that firms can pursue in response to anticipated or actual real exchange rate changes:

TABLE 5.1
STRATEGIC MANAGEMENT OF ECONOMIC EXPOSURE

Marketing Initiatives	Production Initiatives
Market selection & segmentation	Product sourcing shift production among own plants globally
Product strategy eg. product innovation, timing of market penetration or withdrawal, targeting of products.	Input mix increase global outsourcing
Pricing strategy whether to emphasize market share or profit margin how frequently to adjust prices	Plant location produce abroad when outsourcing is infeasible or simply to diversify
Promotional strategy to include exchange rate considerations	Raising productivity cut costs when exchange rate is adverse

Source: adapted from Shapiro (1992)

One of the purposes of the case studies in this thesis is to indicate how difficult it is for U.K. firms to take such initiatives to immunize themselves against prolonged currency overvaluation. For example, to perfectly match the currency of costs with the currency of revenues requires, among others, the totally unrealistic assumptions of no

indivisibilities in the production process and the perfect forecasting of exchange rate-adjusted costs and revenues. These difficulties exist even if the objective is less than perfect matching.

The treasury role in the management of economic exposure is severely limited. It is up to the production and marketing functions of the corporation to forecast future non-contractual cost and revenue streams. With real exchange rate uncertainty, such forecasts can turn out to be merely vague estimates. The input of the treasury in this process is merely in providing a range of estimates of future exchange rates.

3. Asset and Liability Management.

Because strategic marketing and production adjustments can take considerable time to take effect, strategic asset and liability management can be applied in the interim. This involves the liability structure of the entire MNC being set up in such a way that any change in the inflow on assets owing to a currency change should be matched by a corresponding change in the outflow on the liabilities used to fund those assets. This can be secured via control over the currency denomination of financial variables such as cash, short term investments and debt with the objective of reducing net exposed financial assets. A second, and more important means in theory is via control over the currency of financing. In currency of financing policy, a distinction needs to be made between aggressive and defensive stances (see Appendix 3 for the mechanics).

Asset and liability management is only an interim strategy and its effectiveness depends essentially on being able to forecast when currency overvaluation will occur and when it will end. Thus it is only suitable for changes in the real exchange rate outlook, not for constant states when the pound remains overvalued for several years.

4. Planning for Exchange Rate Changes.

An organizational means of integrating production and marketing decisions proactively to develop strategic alternatives to exchange rate changes is via the establishment of a Currency Committee of the firm's most senior executives.

Shapiro (1992:265) perceives the role of the treasury in such integrated currency management as fourfold. These are to provide forecasts of inflation and exchange rates; to identify and highlight the risks of competitive exposure; to structure evaluation criteria so that the remuneration of personnel is not affected by unanticipated exchange rate changes; and to estimate and hedge whatever operating exposure remains after the appropriate marketing and production strategies have been put in place.

Actual planning for economic exposure management is depicted in eight steps in Table 5.2 below:

TABLE 5.2
A FRAMEWORK FOR ECONOMIC EXPOSURE MANAGEMENT

1. Formulate domestic and foreign alternatives for a foreign operation.
2. What are the adjustment costs of switching between alternatives?
3. Specify the adjustment lag or indicate how frequent the existing strategy will be reviewed.
4. What is the appropriate planning horizon for the operation?
5. Give the nominal exchange rate expected for all future periods within the planning horizon. Forecast the relevant prices. Calculate the implicit real exchange rates.
6. Obtain an estimate of real exchange rate uncertainty in all future periods within the planning horizon.
7. Determine the cashflow maximizing strategy.
8. If the risk implied is not acceptable, formulate strategy with the next highest expected cashflow. Risk has to be evaluated as part of the entire conduct of business, i.e. how does it affect the firm's total exchange risk?

Source:adapted from Capel (1991).

4.3 Conclusion.

Theory indicates that misalignment should ideally be managed strategically, and the enormous difficulties in doing so indicated in this section should also be part of teaching in texts such as Shapiro. Those surveys that have requested information on strategic and organizational measures to manage long-term non-contractual exposures find a surprising lack of use of such methods. In Belk and Glaum's survey (1992:8) of 17 large U.K. corporations, none of the sample used any means of managing economic exposure than financial means. It is accordingly necessary to assess the effectiveness of financial hedging.

5. EFFECTIVENESS OF EXPOSURE MANAGEMENT METHODS

5.1 Which currency exposures are important - contradictions between theory and empirical evidence.

Underlying the constraints in section 2 is a dichotomy between theory and practice. The finance literature concludes that translation (i.e. accounting) exposure is not a useful concept to manage (Dufey 1972). Walsh (1986:374-5) concludes that transaction exposure can be routinely managed and that the focus of corporate efforts should be on the management of economic exposure.

Actual practice contradicts these conclusions. The more recent surveys indicate that transaction exposure is the central focus of most companies' management of foreign exchange risk⁵. This is consistent with the finding that by far the most frequently occurring method of management is the forward currency contract. Economic exposure, by contrast, is not given the attention by firms that the academic literature asserts is warranted^{6,7,8}, given the difficulties noted in the previous section. Further, translation

⁵Prior to the replacement of FAS 52 and SSAP 20 in the early 1980s, the centrepiece had been translation exposure.

⁶ Whilst the Rodriguez (1980) survey was aware of the existence of economic exposure, the concept of economic exposure at that time had not yet been defined adequately or indeed accepted into the empirical literature. Indeed, 86% of respondents in the Rodriguez survey stated that translation exposure was part of economic exposure !

⁷Blin et al (1981) noted that because economic exposure is difficult to measure, that little attention would be paid to it in relation to transaction and translation exposure. Indeed, only two pages were devoted to consideration of economic exposure out of a paper of 100 pages.

⁸In Beck's (1989) survey of ten German MNCs in the auto and chemical industries, four did not recognize economic exposure (p.85) and the same four fully covered their transaction exposure. The remaining six managed their transaction exposure but they also included in their definition of exposure all non-contractual foreign currency cash flows which were forecast four and eighteen months forward (p.86).

exposure is not ignored but is actively managed by a large number of corporations⁹.

Table A.3 compares the results of the three surveys which have included questions on exposure management objectives¹⁰. Major objectives are the avoidance of foreign exchange losses, the reduction of net economic exposure, minimizing earnings fluctuations and balance sheet protection. A key conclusion is that profiting from exchange rate volatility was considered of much lesser importance for the sample companies than avoiding loss.

However, regarding effectiveness, to the extent that firms do not calculate the cost of hedging, they do not make a valid evaluation of alternatives, such as internal hedging.

5.2 Theory on the cost of forward hedging.

It was noted in section 2 that most firms rely on external hedging and that an ex post evaluation of hedging should be made. This section argues that the opportunity cost of forward hedging¹¹ can be significant.

In banking circles, it is often claimed that the cost of forward hedging is relatively low. From the standpoint of the banks (Swiss Bank Corporation 1987:67), the cost quoted to the customer is the forward premium or discount and the bank's spread. The premium or discount is the difference between the forward rate and the current spot rate and is computed as a percentage of the spot rate.

⁹A surprising result of Belk and Glaum's survey (1990) is that 13 of the 17 MNCs regarded translation exposure as important. Soenen & Aggarwal (1989) similarly found a high proportion of their sample managed translation exposure.

¹⁰Whilst the BNAC survey posed seven types of objectives, the survey did not include questions on the effectiveness of exposure management methods.

¹¹Hedging an income stream in a foreign currency can be similarly accomplished by borrowing the same foreign currency now to lock in an exchange rate. This is of use where developed markets in financial instruments in certain currencies do not exist.

Ankrom (1978:53) notes that this is totally misleading as a measure of the true cost of hedging. The true cost is instead the difference between the forward rate and the spot rate at the time the forward matures, not when it is first taken out. This opportunity cost measure explicitly compares hedging with its alternative - purchasing or selling the foreign currency spot when a payment occurs.

Giddy (1982:175) notes that this "true" measure of the cost of hedging has two significant flaws. Firstly, it does not explicitly provide a decision-making criterion that assists in determining whether or when a firm should hedge. Secondly, the cost of a fixed-in-advance hedge cannot be directly compared with a risky open position. The relevant comparison is between the forward rate and the treasurer's own forecast of the future spot rate, assuming he has a forecast.

Once the necessary "own forecasts" are inserted into the comparison, the decision-making criteria become as follows, taking two cases as examples:

Case 1. The forward is at a discount, i.e. the subject currency is cheaper for forward delivery than spot. If the discount underestimates the treasurer's forecast depreciation, the treasurer should consider selling the currency forward. If the discount overestimates the treasurer's forecast depreciation, the treasurer should use the spot market instead or consider buying the currency forward.

Case 2. The forward is at a premium, i.e. the subject currency is more expensive for forward delivery than spot. If the premium underestimates the treasurer's forecast appreciation, the treasurer should consider buying the currency forward. If the premium overestimates the treasurer's forecast appreciation, the treasurer should use the spot market instead or consider selling the currency forward.

A number of serious qualifications apply to the above "decision rules".

Most significantly, they presume that the treasurer is able to forecast future spot exchange rates. Not even MNCs have economics departments which are large enough to presume

that their own exchange rate forecasts might be better than those already reflected in market expectations. For smaller companies without economics departments, the treasurer is reliant upon the forecasts of the banks or of screen-based subscription services. These, however, already constitute market expectations and are already built into current rates. In any event, in smaller companies, the treasurer's own forecast is no more than guesswork. The MNCs may have their own full-time economic forecasters and their own econometric models, but their forecasts may turn out to be even more wrong than the hunches of the treasurer of a small company. The end effect is to make a nonsense of the above decision rules which are based on the "superior" information of the treasurer.

This conclusion is embodied in the Efficient Markets Hypothesis. Assuming market efficiency, the forward rate should be an unbiased estimator of the future spot rate. This is confirmed in tests of Kohlhagen (1975) and Levich (1978, 1982). Kohlhagen found that measured ex post, a consistently long or short position in the forward markets in six currencies would sometimes yield profits and sometimes losses, but in the long run, these average profits or losses have not been significantly different from zero. The conclusion, therefore, is to reject the idea of hedging consistently, since the benefits are zero. Even if the gains and losses cancel out in the long-term, this is no policy in favour of not hedging, since in the short-term the firm can become illiquid. The alternative strategy is to develop criteria for selective hedging.

Criteria for selective hedging require the specification of probabilities for alternative future currency values as well as an assessment of the firm's risk aversion. Giddy (1982:176) notes that selective hedging is no more than speculation based on a forecast. If a selective hedging strategy is to be successful, the corporate treasurer must believe that he is a superior exchange rate forecaster. The surveys find that the majority of MNCs do indeed hedge only selectively, though some, particularly in Germany, have a policy of full hedging of all their transaction exposures.

The two strategies reveal a paradox. If consistent hedging yields no benefits, why do corporations engage in it ? Secondly, it was already noted above that treasuries are

unlikely to have superior forecasting abilities than market expectations. Why then do a majority of corporations have a policy of selective hedging ? The answer to the above paradoxes lies in the risk aversion of the corporation and the place assigned to the treasury in the corporation's organizational structure.

A risk averse firm which perceives the treasury's role as defensive will seek to avoid losses and forego gains from currency volatility. This is consistent with full hedging. As regards the cost of hedging, ACT 1 1990:73.2 states that the cost is known only with hindsight and that it "will be of academic interest only to the company, which wished to eliminate foreign exchange risk". However, the management report of the treasury of such a company would probably not include foreign exchange losses, i.e. the real cost of hedging, because all transaction exposures are hedged.

The key point is that the cost of hedging is often not of academic interest only¹². Belk & Glaum (1990) found evidence from one U.K. MNC where a hedge had produced a large loss and the management dismissed the treasurer. In such a corporation, the treasury reporting procedure to the management must have incorporated "ex post cost of hedging" results. At first sight, it would appear in this example that the management of this MNC is risk averse because the hedge produced a loss. Instead, the management expected the treasury to speculate in the form of selective hedging and to speculate correctly. The apparent inconsistency with the Efficient Markets Hypothesis can be explained in that the treasurer does not beat the market, but instead moves with it. The treasuries of large MNCs resemble those of banks in that they have "inside information" in the form of real-time price information and employ staff specifically to monitor it. By such means, corporations can profit from exchange rate volatility via selective hedging.

¹²In March 1993, George Wimpey plc announced a £25 M provision against the cost of unwinding interest rate futures contracts. In 1988, the company had taken the view that interest rates would remain high. The fall in rates after the pound's withdrawal from the ERM made it cancel this bet - at a heavy cost (FT 22.3.1993:9).

Dunhill revealed losses of £32 M over two years owing to currency hedging (DT 14.8.1993). Tiphook plc reported a £36.2 M debit for "financial breakage costs" which involved breaking an interest rate hedge consisting of interest rate swaps. The Finance Director was dismissed (ST 15.8.1993).

The majority of SMEs do not have the inside information to enable them to move with the market. To them, hedging has been likened to a type of insurance premium. Ankrom (1978:54) argues that hedging is analogous to insuring only in that it limits the firm's exposure. The forward rate for currency will be received no matter what happens to the spot rate on maturity of the forward. However, the cost of limiting the exposure is not analogous to an insurance premium, for the cost can really only be determined after the fact. More importantly, the forward market does not eliminate exchange risk for continuous cash flows. Hedging instruments have a fixed maturity and only during this fixed period are they of use in reducing the variability of cash flows. Thus forward contracts can be used to lock in current exchange rates but once the contract expires, ongoing cash flows have to be hedged at the new forward rate. This new rate could be significantly worse if the currency outlook has changed in the meantime¹³. Thus fixing a rate by hedging only acts as insurance for the duration of the forward contract.

5.2.1 Conclusions.

External hedges are only a short term palliative which enable the firm to lock into a certain exchange rate for the duration of the contract. Yet it was also shown from the surveys that the principal hedging that most firms are conducting is exactly this - the use of forward contracts for the management of transaction exposure. Economic exposure in the great majority of cases is left unmanaged.

Further, the use of financial instruments is no solution at all to exchange rate misalignment since they deal with nominal exchange rate uncertainty, whereas it is real exchange rate uncertainty which firms need to manage.

¹³ Further, there are penalties in breaking forwards and currency swaps. Where there are no penalties for breaking contracts, such as in futures, liquidity is thin beyond the near months. For a corporation such as Rolls-Royce seeking to hedge a 10-year export contract worth US\$ 250 M, transaction costs on currency futures would be prohibitive. More importantly, futures 10 years ahead are not obtainable, so that long time horizons cannot be hedged.

5.3 Empirical evidence on why corporations are NOT managing economic exposure.

An additional conclusion of the empirical research is that the standard threefold classification of exposures is too simplistic (Edelshain 1995). Corporations reported giving greater attention to managing their more easily quantifiable exposures than to those exposures they regard as having the greatest impact on profitability.

Yet in the Belk & Glaum (1992:8) survey of 17 MNCs, only three MNCs stated that exchange rate considerations played a role at all in non-financial decision-making areas, and the role even then was only a minor one. An additional surprising conclusion from the Belk & Glaum survey is the lack of perception among U.K. MNCs of the importance of economic exposure, since the fact that all 17 firms in the sample are large corporations does itself indicate that economic exposure should be important to them.

Four reasons can be advanced to explain the paradox. One is that the respondents did not perceive foreign exchange risk as a strategic factor. A reason given for this is that companies appeared not to be aware of the important longer-term effects of exchange rate changes and the risks involved.

Second is that in the case of other corporations which were aware of these longer-term implications, the respondents stated that they did not know what to do about them.

Third is that some corporations did not feel very susceptible to the longer-term economic effects of exchange rate changes.

Fourth is that corporations felt themselves committed to their particular business, which they stated did not allow them any flexibility within the time available in such matters as sourcing, location of production facilities etc.

6. CONCLUSIONS.

Theory is ambiguous as to whether corporate arrangements to manage currency risk are adequate or not, since it hinges on whether the interests of stakeholders in the firm are included in decision-making or not. If they are, (as in Germany), then theory prescribes that corporations should be risk averse. However, corporations are not managing their economic exposure and yet perceive themselves as being risk averse. Corporations are clearly deluding themselves that they are risk averse.

The complexity of managing economic exposure to the risk averse firm¹⁴ presents such great informational needs and constraints on the firm's product market policy - (namely the need to match the currency of revenues with the currency of costs) - that firms are unlikely ever to be able to effectively manage it. This is demonstrated in the following case-studies.

This leads to the conclusion that it is easier for U.K. firms to act on the cause - to lobby the government to prevent prolonged exchange rate overvaluation from occurring - than to attempt to manage the symptoms.

¹⁴A firm which believed it could forecast exchange rates would not want a matching policy. It would sell into markets whose currencies it believed would appreciate and source from where it believed currencies would depreciate. However, in Edelshain's (1995) survey, only 4% of respondents did the former and only 2% believed that it was highly effective. Only 7% of respondents did the latter and only 3% believed that it was highly effective.

CHAPTER SIX

LESNEY PRODUCTS & CO. LTD.

1. OBJECT OF CASE-STUDY

Case-studies on Lesney Products & Co.Ltd., manufacturer of Matchbox toys, have been documented by Constable (1980) and Rivett (1983). Neither has investigated how Lesney attempted to manage currency risk and with what effectiveness. Instead, their focus was on general business strategy. This case-study adds to the previous studies by focusing on currency risk and benefits from access to the treasurer at the time, P.F. Slade.

The hypothesis to be investigated is that inability to manage currency risk, on top of a lack of flexibility in product-market strategy, can precipitate corporate failure.

2. ANATOMY OF CRISIS.

Table 6.1 provides an anatomy of the financial deterioration of the company:

TABLE 6.1
LESNEY PRODUCTS & CO.LTD., SUMMARY PROFIT AND LOSS £000

	1975	1976	1977	1978	1979	1980	1981
TOTAL SALES	33306	43528	56440	63339	88964	106733	90057
INTEREST CHARGES	553	773	606	642	1900	5638	7048
PRE-TAX PROFIT	3861	6851	10191	8015	5119	-3609	-10959

RATIO ANALYSIS

CURRENT RATIO	1.88	3.01	3.91	2.97	1.92	1.48	1.28
QUICK RATIO	1.00	2.23	2.09	1.47	0.97	0.61	0.55
GEARING	6.36	17.81	16.55	10.61	22.6	47.1	56.5
INTEREST COVER	5.98	7.86	15.82	11.48	1.69	-1.64	-2.55
PROFIT/ SALES	11.59	15.74	18.06	12.65	0.57	-0.34	-12.17
ROCE	14.55	23.31	25.92	18.82	5.65	-15.87	-59.62
STOCK TURN-OVER	4.08	4.49	3.85	3.60	2.97	2.56	4.56
SALES/ FIXED ASSETS	2.90	3.80	4.20	3.99	3.18	3.42	3.99

Source: calculated from annual reports.

The ratio analysis in Table 6.1 does not indicate the underlying cause of the failure of Lesney Products, but points to the symptoms. These are a massive increase in gearing and a major deterioration in the interest cover ratio. Liquidity and profitability also declined dramatically.

3. HYPOTHESES.

Lesney's failure was partly owing to the rise in the real sterling exchange rate, that Lesney could not increase prices to compensate, that it lost sales in consequence, particularly export sales, and became highly indebted. Inability to service the debt caused the company's demise.

The ratio analysis above is not enough to substantiate this hypothesis. Instead an investigation of the product market background is required, using data from the report and accounts to back up the analysis. This is followed by an investigation into the role of the treasury in its management of the rise in the real sterling exchange rate.

The factors that would support the above hypothesis are firstly, evidence of the vulnerability of the business to adverse shifts in the financial market background and, secondly, evidence of the relatively strong market position of the company's products. It also needs to be demonstrated that if the failure was owing to the rise in the pound, that there was little or nothing that the management could have done in changing its product-market strategy in the short-run to stave off bankruptcy. Each of these factors are examined below.

4. VULNERABILITY OF LESNEY TO THE £ MISALIGNMENT SYNDROME.

If currency risk were the only factor, then in the toy business a highly successful product should be able to sell on account of its intrinsic qualities irrespective of the x% added to its price because of currency overvaluation¹. The main problem is that currency overvaluation combined with high interest rates and recession is highly significant in the toy business. This is because demand is highly seasonal and orders from retailers tend to be concentrated in a relatively short period. This is the few months after the spring toy fairs to October of the same year. Such vulnerability is nevertheless of lesser significance than the vulnerability of Laker Airways arising from the mismatch in the currency denomination of costs and revenues.

Rising real interest rates can impact on cash flows of both retailers and manufacturers in the toy industry in two ways. One is via the increased cost of holding stocks. This would tend to cause retailers to delay ordering and shift the interest burden on to manufacturers. Second is via the impact on consumer demand. The effect on consumer spending can be magnified by expectations regarding recession, unemployment and increased saving under the contingency motive.

Although Lesney already had the advantage of well developed export distribution channels, in 1979-80 it could not offset macroeconomic contraction in the domestic market by higher export sales because of the rise in the real exchange rate of the pound. In 1978 minimum lending rate had been as low as 6.5%. It almost trebled to 17% in 1979. On the back of high real interest rates, the pound rose to over DM 5 in 1980.

The company's direct exports in 1980 amounted to £42.931 M but collapsed to £28.2 M in 1981. This dramatic decline in such a short space of time coincided with the rise in sterling. It is difficult not to conclude that a link existed between exports and the

¹Nintendo games, for example, enjoyed record sales at Christmas 1992 despite their high price and the fact that much of the E.U. and the U.S. were in recession.

exchange rate. Otherwise it would have to be demonstrated that exports were lost because of a new rival product range from a competitor. Yet no new directly rival product emerged over this period. It is nevertheless acknowledged that since the 1960s, a wider range of toys and games became available.

If exports were only a small part of sales, then the loss of export markets could have been managed. All the firm would have had to deal with would be the possible loss of market share in the domestic market because of a rise in imports sucked in by the overvalued exchange rate. Instead, the enormous relative importance of direct exports to the company can be seen in the following table:

TABLE 6.2
EXPORTS FROM THE U.K. AS A % OF TOTAL SALES,
LESNEY PRODUCTS & CO. LTD.

1975	58.62
1976	56.79
1977	51.63
1978	49.36
1979	40.46
1980	40.22
1981	31.31

Source: calculated from annual reports.

In the years before the rise in sterling in 1979, exports amounted to around half of total sales. From 1979, exports collapsed both in absolute terms and as a percentage of total sales.

5. PRODUCT-MARKET BACKGROUND

- LESNEY'S STRONG MARKET POSITION.

The charge can nevertheless be levelled that the adverse exchange rate and interest rate background is only one out of a number of factors which affect the success or failure of a business. It can also be argued that the sudden adverse change in the financial environment cannot be isolated as the cause of the company's failure. This section makes the case that the market position of Lesney Products and Co.Ltd. was a very strong one but that even this was not enough to permit it to forestal bankruptcy. First a brief competitive analysis of the company is made, followed by an appraisal of factors which underpin the hypothesis that it was exchange and interest rate risk that caused the company's failure.

TABLE 6.3
PRODUCT-MARKET BACKGROUND, LESNEY PRODUCTS & CO.LTD.

STRENGTHS	WEAKNESSES
<p>1. Stable product range, rather than fickle as is typical in the toy industry.</p> <p>2. No direct rival in its own product range. Corgi die-cast models were larger-scale and priced two or three times higher.</p> <p>3. Matchbox had survived and learnt from the onslaught of Mattel's "Hot Wheels" in 1968.</p>	<p>1. By the late 1970s, a wider variety of toys and games became available. Matchbox was narrowly focused on die-cast vehicle models. It was not diversified within the toy business, but this is hardly critical (Table 6.4).</p> <p>2. Attempts to diversify out of the toy business were difficult eg. Lesney bought MCW Ltd, a specialist in aluminium die-casting with a turnover of £10M, in 1976, but it made losses.</p> <p>3. The company had been run for decades by its founding directors. These had no experience of running any other business. From their failure to diversify, it could be inferred that the management had become complacent.</p>
OPPORTUNITIES	THREATS
<p>1. The company had by far the highest turnover of U.K. toy manufacturers (T.6.4). It had the resources to diversify in its growth years (see profits figures in T.6.1).</p> <p>2. Diversification could have been into other businesses which were less vulnerable to currency and interest rate risk. Alternatively, production could have been diversified out of the U.K.</p> <p>Lesney looked at several opportunities for acquisitions. The difficulty was in finding a suitable match (Slade, interviewed July 1993 & private correspondence).</p>	<p>1. Costs were principally in sterling. The company was highly vulnerable to any rise in the real sterling exchange rate. After 1979, around 20% of sales came from U.S. production (see T.6.7). However, these were vulnerable to dollar misalignment.</p> <p>2. Because of the nature of the toy business, the company was highly vulnerable to rises in real interest rates.</p>

If the company's failure lay exclusively or primarily in its product-market strategy and not in the financial environment facing the firm, the following three hypotheses can a priori be expected to hold:

1. If the narrow product range of Lesney was the cause of its demise, then it might be expected that rival firms in the same business with a much wider product range would have prospered. Such diversified toy manufacturers included Dunbee-Combex-Marx, at one time the largest toy maker in Europe, and Mettoy. However, both these firms failed (in 1980 and 1981 respectively).

In 1980, the leading U.K. toy manufacturers by turnover were as follows:

TABLE 6.4
LEADING U.K. TOY MANUFACTURERS BY TURNOVER, £M

YEAR ENDING	COMPANY	TOTAL TURN OVER £M	TOY TURN-OVER £M	EXPORTS AS A % OF SALES 1979/80	FAILED
Jan. 1980	Lesney	106.7	96.0	40.2	1981
April 1980	Cowan de Groot	44.1	10.1	3.6	-
March 1980	Airfix	42.0	42.0	20.3	1981
Dec. 1979	Mettoy	32.5	32.5	40.9	1981
June 1980	M Y Dart	20.8	12.1	21.3	-
Dec. 1979	Berwick Timpo	16.8	16.8	15.1	-

Source: created from information in Rivett (1983).

Of the above six largest firms, three failed. Dunbee Combex Marx's assets were obtained cheaply by M. Y. Dart. The position of Cowan de Groot is quite different from that of the others. Only a quarter of its turnover consisted of toys. It did not suffer from real appreciation in sterling as the others did, but benefited from it. It was an exclusive and highly profitable importer of toys from China and the USSR. Its exports were re-exports and not affected by sterling overvaluation, since the profit margins on the imports were substantial.

2. A second premise that would pinpoint Lesney's product-market strategy as the cause of its failure would be if its downturn in sales in the 1979-80 period was unique. Instead, Table 6.5 shows that for the U.K. industry as a whole, sales showed a 16% decline after 5 years of increases in nominal terms.

TABLE 6.5
U.K. TOY INDUSTRY FACTORY SALES, IMPORTS AND EXPORTS 1975-80, £M

	1975	1976	1977	1978	1979	1980
Manufacturers' Sales	193.5	226.5	259.2	297.1	323.3	271.6
Exports	61.5	76.3	87.1	101.2	111.6	109.1
Imports	41.8	59.6	70.3	83.8	107.1	171.7
Die-cast model imports	1.0	1.8	1.9	2.0	2.9	3.2

Source: Business Monitor

3. A third indicator underlining the importance of currency factors is that whilst the toy industry's total exports did not show a marked decline, total imports rose phenomenally by 60.3% between 1979/80 (T.6.5) on the back of the rise in sterling. By contrast, in Lesney's market sector, total imports rose by much less. Table 6.6 gives data on imports in the main categories.

Once the total import figures are related to Lesney's total sales, it can be seen at once how insignificant a challenge rival die-cast imports presented to Lesney. Table 6.5 shows that competing imports rose only slightly in 1980 to £3.2 M. Thus total U.K. imports of die-cast models constituted only 2.99 % of the firm's 1979 sales !

Underpinning the hypothesis that it was the rise in sterling that undermined Lesney's sales is the collapse in exports. It is in this that the die-cast model sector did differ from the whole U.K. toy industry. In sterling terms, die-cast model exports declined 32.38 % between 1979 and 1980. Lesney's direct exports from the U.K. actually rose in nominal sterling terms by 19.25 % in the same year. However, the following year they fell by 34.31 %. This nevertheless does not prove a unique failure on the part of Lesney's product-market strategy.

TABLE 6.6
IMPORTS AND EXPORTS OF TOYS BY CATEGORY 1978-1980, £000

		1978	1979	1980
Wheeled toys	IMPORTS	2,626	4,620	4,447
	EXPORTS	2,183	1,447	1,849
Constructional toys of plastic	IMPORTS	5,361	6,856	8,446
	EXPORTS	2,909	3,069	2,706
Die-cast miniature models of metal	IMPORTS	1,989	2,933	3,158
	EXPORTS	42,058	48,174	32,572
Other	IMPORTS	4,202	4,825	5,618
	EXPORTS	8,167	9,526	5,213

Source: Business Monitor, 1980 and 1981

6. THE LIMITED ROLE OF THE TREASURY.

If the receivership of Lesney was owing to failure to act quickly enough to manage the real rise in sterling, to what extent was this failure to act the result of negligence or the result of normal limitations on the ability of the firm to respond effectively ? To assess these issues requires an analysis of possible changes to the product-market strategy and secondly, empirical evidence on how Lesney's management perceived the role of the treasury and how the treasury itself perceived the problem at the time. This section examines this treasury role. Possible changes to the product-market strategy are considered in the following section.

Of the three conventional exposures, Lesney managed only transactions exposure². The board gave the treasury a mandate to hedge in the forward market, but only to hedge sales and not orders. Export prices were not denominated in sterling but set in the currency of the particular export market. The rate selected was known internally as the "standard exchange rate". If this standard exchange rate appeared to the treasury to be at variance with currency market developments, the treasury fully hedged sales which were already contracted for.

The role of the treasury in managing Lesney's currency risk can be seen as highly limited in three principal ways:

Firstly, as only existing sales were hedged, but not orders, the time horizon of hedging was very short. Three-month forward contracts were the norm. The longest period for which sales were hedged was only six months forward. This was only for one market, Latin America. Sales to this market were small by comparison with the largest markets of the U.S. and Germany. In the face of the duration (1979-83) of sterling misalignment, a policy of hedging only 3 months forward can be viewed as completely inadequate.

Secondly, Lesney had no option but to price in local currency and hedge its exports itself.

² Translation exposure need only have been managed after 1977, when Lesney started making U.S. acquisitions.

This was not considered a problem up to 1979, since the treasury believed it could itself gain from sterling weakness, rather than its distributors³. The fully-owned distributors would have had to hedge, yet they did not have the skills or the size necessary to employ staff to

Thirdly, economic exposure was not managed. Board policy was one of never taking unmatched foreign exchange risks. Its instruction not to hedge all orders (i.e. transaction exposure) was because it considered this risky. The board logically perceived that hedging non-contractual exposures was even riskier. In this, it might appear that the board was completely misguided. Instead, the board was guided by its bankers and had to accept their advice. The extent of forward cover was deliberately restricted along with the company's normal bank borrowing facilities.

The Group Treasurer stated (July 1993) that economic exposure could not be hedged anyway, even if Lesney had been free of bank conditions. He questioned how a treasurer could defend a position where the treasury had taken forward cover for 3 years ahead but failed to meet its sales targets. The contracts would then have to be closed out, which could cause substantial losses. Slade noted that stronger companies than Lesney have failed because of such gambling and he questions whether external hedging of economic exposure is good practice. Further, Slade doubts whether banks would normally offer facilities for such hedging anyway to companies below the MNC category.

The treasury was not to blame for the failure to manage economic exposure, since the instrument for managing it is the product-market strategy over which the treasury has no direct control.

³though the chairman had already stated in the 1976 annual report: "The new year has opened with another appalling collapse in the international value of sterling. Whilst a low exchange rate is often claimed as a benefit for exporters it should not be thought of as other than a dangerous drug".

7. LIMITED ABILITY TO ADJUST PRODUCT-MARKET STRATEGY.

There are two principal options which the management could have pursued to create a partial natural hedge which might have enabled the company to survive the rise in sterling. One is diversification to reduce the dependence on die-cast models. The other is to produce abroad to secure a better match between the currencies of costs and revenues.

Given Lesney's relatively strong market position, it can be argued that the management saw little urgency in changing strategy to offset possible adverse shifts in the financial background. This lack of urgency appears rational when it is considered that the rise in sterling and interest rates in 1979 took place suddenly and without precedent. The historic experience which did influence strategy was the loss in market share which arose in 1968 from a rival product - Mattel's Hot Wheels. This led management to believe that they should never again be dependent on a single product. Accordingly, in 1977 the priority of strategy became one of diversification.

The hypothesis investigated is whether the diversification strategy reduced Lesney's vulnerability to currency risk. The policy of diversification could have been combined with one of production abroad towards the creation of a natural hedge.

Regarding diversification, in April 1977 a holding company was formed which presided over three divisions. One was responsible for non-toy activities. It was a stated objective that non-toy activities would rise to 20% of group business in the ensuing five years. In 1978, a US metal castings company (MCD) was acquired. Its £11M turnover constituted a quarter of group sales at the time. Other diversifications were into US toy companies. These were Vogue Dolls and AMT Corporation, a major manufacturer of plastic construction kits.

Regarding overseas production, during the 1960s, overseas sales subsidiaries were established in the US, Canada, Australia, West Germany and Belgium. In the 1970s, the overseas distributors were bought out and Lesney had company-owned operations in

twelve countries. However, it was only from 1977 that Lesney produced abroad when it made its first acquisition, that of Vogue Dolls.

TABLE 6.7
RELATIVE SIGNIFICANCE OF LESNEY'S SALES FROM OVERSEAS PRODUCTION, £000

	1978	1979	1980	1981
Total Sales	63,339	88,964	106,733	90,057
Sales from production abroad	-	20,034	20,236	25,437
Direct exports from U.K.	31,266	36,000	42,931	28,200
Overseas Production as a % of total sales	-	22.52	18.96	28.24

Source: annual reports.

Table 6.7 illustrates the magnitude of sales from overseas production. More important than sales, however, is their profitability.

In the 1978 AGM, it was announced that Lesney sought a minimum £1.5 M objective of profit from the new subsidiaries. The US toy companies were bought for their potential as turnaround opportunities. However, Vogue and in particular AMT, took much longer than predicted to turn around. MCD never lived up to its profit expectations. Thus instead of improving cash flow with the benefit of it being in dollars, the new companies actually constituted a drain on cash flow. This was also at a time when the rise in sterling and in U.K. interest rates began to hit U.K. operations.

The conclusion from the above is that whilst the strategies were correct, their implementation was a failure. A natural hedge was never created since overseas production was only dollar based, leaving the DM exposure uncovered. With hindsight, it might have been a better hedge to have produced in DM-bloc countries, since the dollar entered a period of prolonged overvaluation in 1980.

Lesney's response to the rise in the pound in 1979 was to accept reduced margins and try to retain market share. In 1979, the result was that turnover increased by only 8%. A fallback in orders from retailers meant that in the interim report which appeared at the

end of 1979, inventory rose to £42M, almost 6 months sales, and borrowings were over £40M. In early 1980, over 20% of the workforce was made redundant as output was reduced to halt the build-up of stocks. In June 1980, the founding management was replaced, (under pressure from the bank creditors), by "company doctors". In the October interim results, loans exceeded shareholders' funds. The firefighting strategy the new management pursued was further output cutbacks and stock disposals. Significant improvement was seen in the 1980 report which appeared in June 1981. Borrowing was cut by 38%, inventories by more than 50%, debtors by 47% and ten of the company's thirteen factories were closed. The banks' guarantee of support was extended to Christmas 1981.

In the 1981 interim results, turnover was down over 30% and gearing was 175%. There was no more room for cost cutting. When the bank's guarantee of support expired, the company was forced to appoint receivers. Three years of prolonged overvaluation of sterling had taken its toll.

8. CONCLUSION.

The Group Treasurer, commenting on this case-study, stated (July 1993) that overvaluation of sterling was the most important factor in Lesney's failure, but that there were other causes. These were firstly, that there was too much internal capital investment which was non-productive and which was in acquisitions which produced negative cash flows. Secondly, the toy market was becoming diversified in the late 1970s and die-cast models no longer had a dominant place in the toy market. Thirdly, Lesney's vertical integration was an advantage when sales were increasing because profits could be earned from both manufacturing and local distribution. However, when sales fell, the group was vulnerable to trading losses, overstocking and high borrowing right through the chain from manufacture to distribution overseas.

CHAPTER SEVEN

JAGUAR CARS LTD

1. OBJECT OF CASE-STUDY

The Lesney case-study sought to demonstrate an instance of the closure of production with a significant causal factor being that currency risk could not be managed. The Lesney case can be criticized for involving a product with low margins and serving a mass market, and thereby being highly vulnerable to currency risk.

The purpose of the Jaguar case-study is to make the hypothesis that corporations cannot immunize themselves against prolonged currency overvaluation more watertight. This is attempted by demonstrating the impact of currency risk on Jaguar Cars Ltd. - makers of a highly differentiated product with a high income elasticity of demand and which is positioned in a niche market with a premium price, which might be expected to enable it to surmount the hurdle of currency misalignment.

2. BACKGROUND

Jaguar was part of an MNC, BL, which had a diversified product range and, up to the 1980s, geographically diverse markets, though production was concentrated in the U.K. However, belonging to BL was not a source of strength for Jaguar as the group was weakened by a history of strikes, low profitability and underinvestment. Thus currency misalignment could have a more pervasive impact than in a stronger, more profitable firm. Indeed, a considerable literature already exists on the problems of the U.K. motor

industry in the 1970s and 80s but this has neglected misalignment¹. BL's biggest single export market was the U.S. where it dominated, then totally lost, the small sports car market when it withdrew from the business in 1981². Low profit margins on U.S. sales meant that real sterling appreciation against the US\$ in the late 1970s resulted in a loss on each unit sold in the U.S.³

Similarly, currency risk management was acknowledged as a major problem in Jaguar's offer-for-sale document in 1984. This stated (Section 18) that the directors did "not consider it appropriate to make a profit forecast for the year to 31.12.1984 because of the sensitivity of the Group's results to changes in the sterling/dollar exchange rate". This is an implicit admission that BL (which was responsible for Jaguar's hedging at the time) could neither correctly forecast exchange rates nor manage the exchange risk.

Indeed, the offer-for-sale document includes a sensitivity analysis table of how Jaguar's results might have looked in 1983 under differing sterling/dollar exchange rates. This is reproduced below.

¹Dunnett (1979) investigated the impact of twelve government policies on BL and concluded that they all contributed to the company's demise. However, in 201 pages, he nowhere mentions exchange rate policy. Williams et al (1987) investigated the malaise of the Austin Rover division of BL from the standpoint of the failure of business strategy and industrial policy. In their case-study of 150 pages, the exchange rate background is only given a mention five times.

In Germany, Daimler-Benz (1990) has conducted its own research on the impact of currency risk.

²around 80% of MG/Triumph output, reaching a maximum of 80,000 cars p.a., was exported to the U.S.

³Management accounts for MG are stored in Rover's archives and R.J. Cripps, Head of Business Strategy, applied for me to obtain access. Rover's Finance Director refused (28.7.93) on the grounds of commercial sensitivity because the MG sports car was being relaunched. However, the archives may be available to future researchers.

TABLE 7.1
JAGUAR'S 1983 RESULTS UNDER DIFFERING EXCHANGE RATE ASSUMPTIONS.

Average Exchange Rate, £1=US\$	Operating Profit/Loss £M
2.00	-5
1.80	15
1.60	38
1.52 ⁴	51
1.40	70
1.20	112

Source: "Offer-for-sale Document, Jaguar", Hill Samuel, 1984.

Given such uncertainty, it is important to investigate how Jaguar managed its exchange risk and to draw implications from this management for its competitiveness.

3. HYPOTHESES.

BL was responsible for Jaguar's treasury management until 1984, and until 1984, Jaguar had no independent position. It is hypothesized that Jaguar's currency risk (i.e. including economic exposure) could neither be managed via BL's treasury, nor its own treasury after 1984, nor via its product-market strategy. In consequence, Jaguar was forced into massive retrenchment during sterling misalignment 1979-82 and during prolonged currency depreciation in Jaguar's principal export market (the U.S.) between 1986-92. This further weakened the company in relation to its German rivals.

4. METHODOLOGY

The methodology to test these hypotheses is a comparative examination of the vulnerability to exchange risk of Jaguar and its two German rivals; a comparative examination of how the treasuries of the three competitors acted to stem their

⁴1.52 was the average sterling/dollar exchange rate in 1983.

vulnerability; and how the three attempted to internally hedge, and with what results for Jaguar's competitive position.

An indication of the currency management problem facing the treasuries of Jaguar and its two principal competitors is given in **Table 7.2**:

TABLE 7.2
EXTENT OF NATURAL HEDGE IN THREE COMPETITORS, 1993

	JAGUAR	BMW	MERCEDES-BENZ
Currency Denomination of Costs	75% in £ 25% in DM US\$ negligible.	85% in DM.	88-90% in DM. Remainder invoiced mostly in US\$ or currencies linked to the US\$.
Currency Denomination of Revenues	Variable. Approx. 50% in US\$ 25% in £ 15% E.U. currencies.	100% invoiced in DM. Currency risk management transferred to importer. BMW states that 58.1% of its revenues were in foreign currencies in 1992	100% invoiced in DM

Sources: Jaguar Cars Ltd., Dr. Peter Siebourg, Head of Accounting, BMW Munich, 11.8.92, 15.6.93; Dr. Anton Frantzke, Mercedes-Benz, Stuttgart, 15.4.91, 14.6.93

Jaguar's mismatch in the currency denomination of costs and revenues is substantially greater than that of its German rivals. The extent of currency exposure also depends on the share of exports in total sales (**Chart 7.1**). The export shares of the German competitors have tended to be relatively stable since 1977. By contrast, the export share of Jaguar's output has been highly volatile, ranging from 43.2% in 1979 to 83.3% in 1986. A more significant problem than forecasting what percentage of output to hedge is that of forecasting output itself. Jaguar's output has been highly volatile, whereas that of its German competitors is much more stable in percentage terms⁵ (**Chart 7.2**). A similar pattern is evident in profits figures (**Chart 7.3**).

⁵For example, Jaguar's unit output fell by 60.3% from 51,939 cars in 1988 to 20,601 in 1992.

CHART 7.1
 VOLATILITY IN JAGUAR'S SHARE OF EXPORTS IN TOTAL SALES COMPARED TO
 BMW & MERCEDES-BENZ

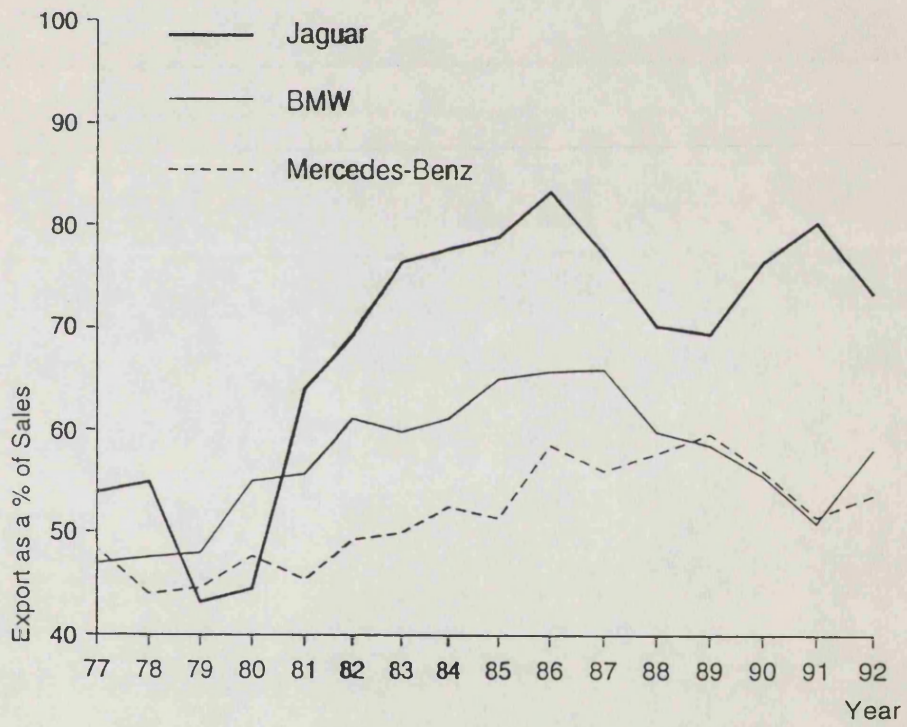
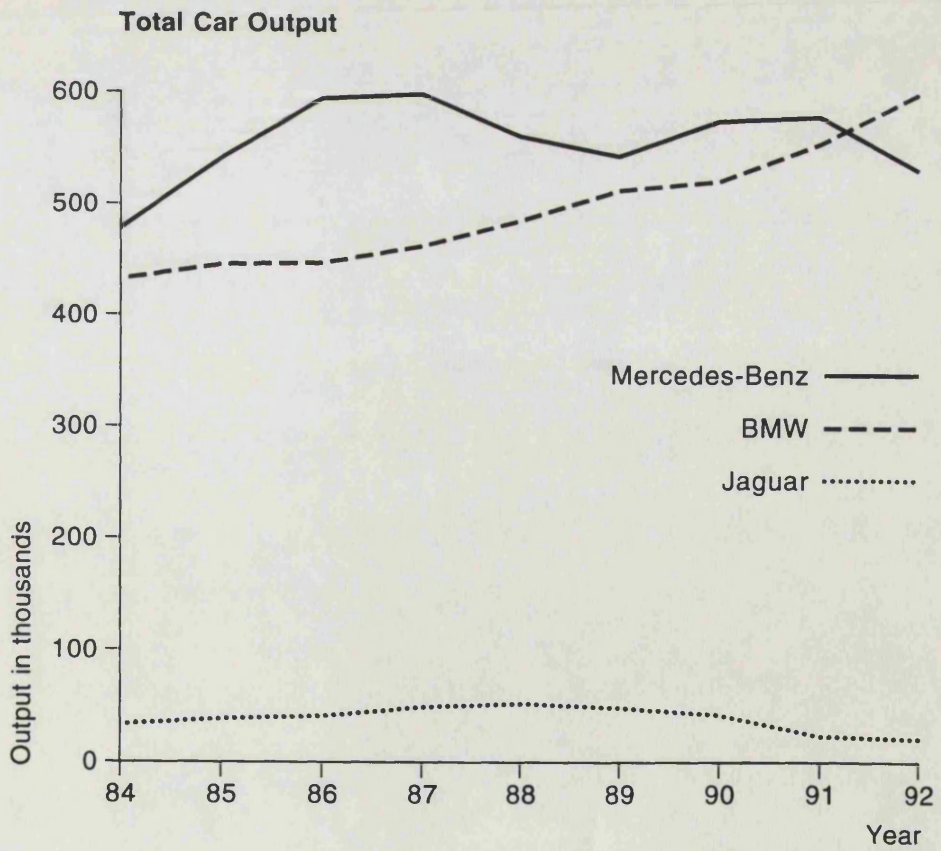
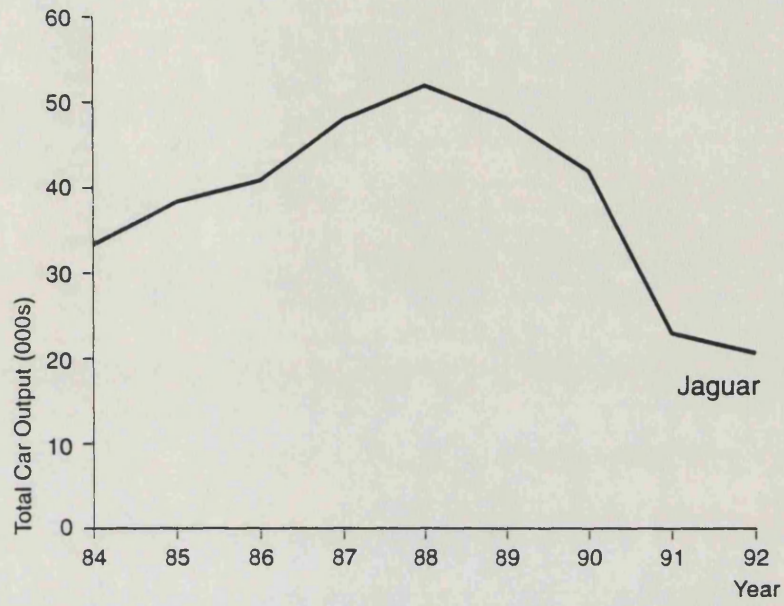
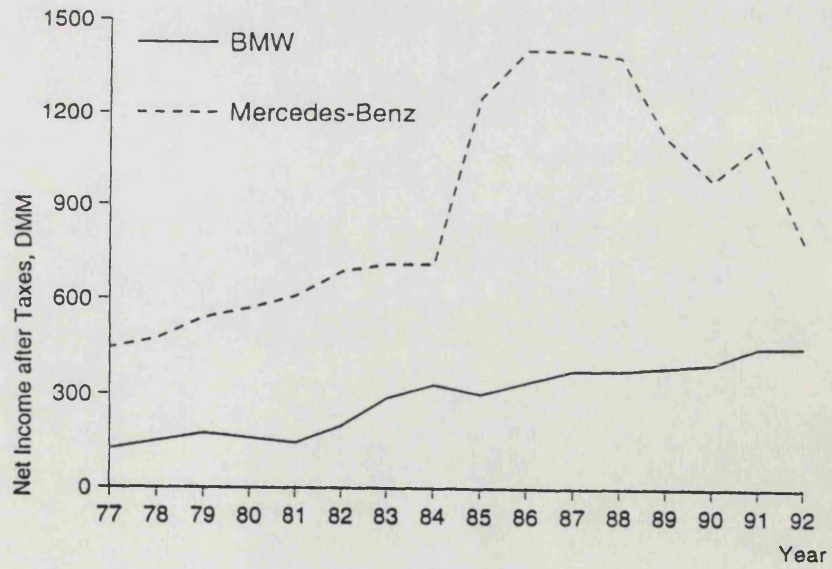
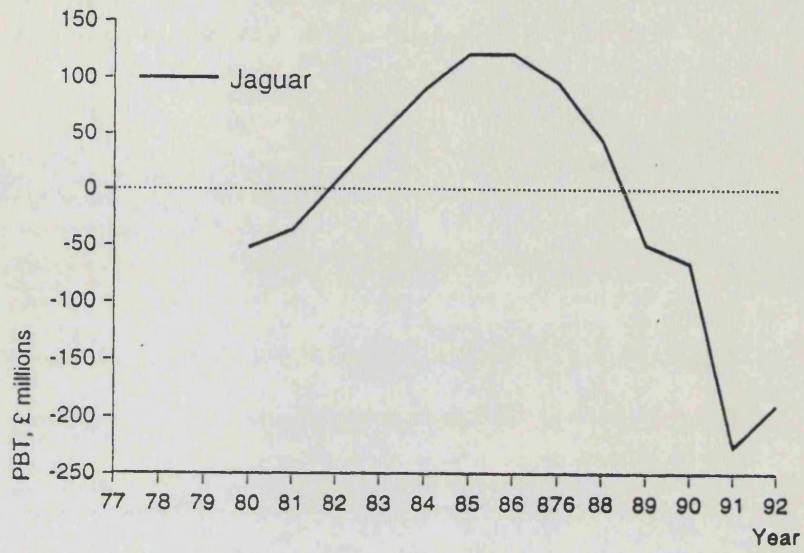


CHART 7.2
VOLATILITY IN JAGUAR'S OUTPUT COMPARED TO BMW & MERCEDES-BENZ



Source: Annual Reports

CHART 7.3
VOLATILITY IN JAGUAR'S PROFITS COMPARED TO BMW & MERCEDES-BENZ



The difficulty in forecasting demand and output in future years given such volatility raises major problems for the treasury, not only in hedging currency exposures but also in forecasting funding and working capital needs. In this study, these latter problems are ignored, but the magnitude of the problem for Jaguar's treasury of cash forecasting and liquidity management is noted, particularly in relation to its German rivals.

To indicate Jaguar's competitiveness, changes in Jaguar's financial position cannot be traced out because of the absence of financial information. During sterling's overvaluation 1979-82, Jaguar was part of British Leyland. When sterling was overvalued again between 1990-92, Jaguar was already part of Ford in 1989. Both parents have declined to provide management accounts for the relevant years. Financial information is available for its period of independence from 1984 to 1989. This period partly coincided with a U.S. boom and a strong dollar up to 1986 at least. This not only boosted U.S. sales in absolute terms but also made Jaguar highly profitable. This thesis, however, is about how companies manage adverse real exchange rate shifts, not positive ones, so the period of independence will not be examined⁶. A further rationale for not including the period of independence is that the individuals responsible for management of currency risk during and after privatisation did not change, and that the adverse US\$ exchange rate trend which started in 1986 was not followed by overall losses in Jaguar's P/L statement until after Ford's purchase.

In the absence of annual accounts for the relevant periods, data for Jaguar's market position is used as a proxy for competitiveness. This assumption may be considered unreasonable as market position is not necessarily a reliable indicator of long-term success, whereas profit/loss figures⁷ are. This is because market position does not equal

⁶It is hypothesized here that Jaguar's profits during independence between 1984 and 1989 were made at the expense of necessary investment for long term competitiveness. This is because after Ford's takeover, investment of US\$ 1 bn in new models was necessary, yet Jaguar had little prospect of making such investment, or even staying solvent, had it remained independent.

⁷See Table 7.7 for an example of how BMW's U.K. profits increased with a lag following spending on marketing infrastructure.

profit or indeed cash flow. However, in the absence of any other information, market position is a crude guide to competitiveness.

In the periods 1979-82 sterling overvaluation and 1986-92 US\$ misalignment, Jaguar's vulnerability to currency risk is analysed in terms of unit sales in the relevant market and comparisons are made with Jaguar's two German competitors.

Secondly, the efforts BL and Jaguar made to hedge Jaguar's currency risk via the treasury in the two periods are investigated and compared with those of BMW and Mercedes.

Thirdly, the strategic options open to Jaguar to manage its economic exposure are investigated and compared with those of its two German competitors.

5. VULNERABILITY OF JAGUAR TO REAL STERLING APPRECIATION 1979-82⁸

The rise in the real sterling exchange rate can render Jaguar's products less competitive in the U.K. market as foreign rivals could potentially undercut Jaguar by the extent of the appreciation. Secondly, Jaguar would become less competitive in its main export market, the USA, and also in third markets. If the decline in price competitiveness led to a decline in sales, then profitability would be adversely affected as fixed costs per unit of output rise. The decline in profitability in turn makes it less easy to increase investment to regain competitiveness via non-price factors, such as improved quality and new product design.

Table 7.3 shows that Jaguar's U.K. sales collapsed by over 40% between 1979-83, whereas those of its German rivals rose dramatically.

TABLE 7.3
UNIT SALES IN U.K. MARKET

	JAGUAR	BMW	MERCEDES-BENZ
1977	11,445	8,481	6,981
1978	11,952	10,506	6,935
1979	7,946	14,058	7,914
1980	10,755	13,451	8,876
1981	5,281	17,086	10,667
1982	6,795	22,977	11,792
1983	6,616	25,178	13,108
% change 1977-83	-42.2	+296.8	+187.8

It needs to be investigated to what extent Jaguar's sales collapse was owing to price factors (which would underpin the hypothesis that currency overvaluation was a cause), and to what extent it was owing to other factors. The significance of recession is

⁸In 1983, sterling depreciated by over 30% against the DM. Data for 1983 is nevertheless included because of the existence of time lags.

diminished by the dramatic rise in German rivals' sales in the U.K.

By 1983, after years of weak demand, a significant recovery in the total U.K. car market was bound to occur (Table 7.4) but Jaguar's market share declined by 27% between 1978-83, whereas those of its German rivals increased dramatically. As the units sold in the elite sector rose by 62 % over the period, Jaguar's decline in absolute sales is disturbing. Indeed, the bigger increase in the elite sector than in the total U.K. market can be inferred to be owing to the growth in company cars, and that supply creates demand. Thus why Jaguar's German rivals should dramatically increase supply to the U.K. market at a time of U.K. recession could be owing to the product superiority of German rivals, but more significantly, the rise in the real sterling exchange rate made German products highly price competitive and provided an incentive for the German rivals to invest in marketing infrastructure in the U.K. Further, both BMW and Mercedes-Benz offered a wider range of cars, with smaller engine sizes, in the U.K. luxury market segment, whereas Jaguar did not, thus increasing the size of the U.K. elite sector.

TABLE 7.4
UNITS SOLD IN TOTAL U.K. MARKET, IN ELITE SECTOR & % SHARES IN TOTAL U.K. MARKET

	UNITS SOLD IN TOTAL U.K. MARKET	UNITS SOLD IN U.K. ELITE SECTOR x	JAGUAR %	BMW %	MERCEDES- BENZ %
1977	1,323,524	28,122	0.86	0.64	0.53
1978	1,591,939	30,717	0.98	0.66	0.44
1979	1,716,275	31,265	0.74	0.82	0.46
1980	1,513,761	34,397	1.16	0.89	0.59
1981	1,484,713	34,315	0.55	1.15	0.72
1982	1,555,027	42,369	0.76	1.48	0.76
1983	1,791,699	45,535	0.63	1.41	0.73
% change 1977-83	+35.4	+61.9	-26.7	+120.3	+37.7

Source: SMMT, BMW(GB)Ltd., Mercedes-Benz (UK) Ltd.

x including Rolls-Royce.

5.1 Comparative vulnerability to currency risk of BMW and Mercedes-Benz 1979-82.

The vulnerability of Jaguar to overvaluation in the pound can be seen in **Tables 7.5** and **7.6**. BMW and Mercedes-Benz both have the advantage of costs denominated in a more stable currency. A further advantage is that both are far less dependent on export markets than Jaguar and also that their export markets are more diversified than Jaguar's. Their exports as a percentage of total sales were lower than that of Jaguar 1977-83. With the collapse in Jaguar's demand in the U.K., it became even more dependent on exports at a time when the real sterling exchange rate was grossly overvalued. **Chart 7.1** shows export shares of the three competitors. **Table 7.5** indicates how these shares have changed.

TABLE 7.5
EXPORTS AS A % OF TOTAL SALES

	JAGUAR	BMW	MERCEDES-BENZ
1977	53.9	47.0	48.4
1978	54.9	47.6	44.0
1979	43.2	48.0	44.6
1980	44.5	55.0	47.7
1981	64.0	55.7	45.4
1982	69.2	61.1	49.3
1983	76.4	59.8	50.0
% change 1977-83	+41.7	+27.2	+3.3

Sources: annual reports. Jaguar: SMMT

Jaguar was forced into massive retrenchment in the years to 1981 but rebounded (on the back of dollar overvaluation) only to face another period of massive retrenchment (**Chart 7.2**). Neither BMW nor Mercedes-Benz was subject to such damaging fluctuations in demand and output. This will be shown to be partly the result of more diversified markets than those of Jaguar.

6. LIMITED ROLE OF THE CORPORATE TREASURY IN MANAGING STERLING OVERVALUATION 1979-82.

6.1 Hypothesis.

It is hypothesized that the limited role of the treasury in managing sterling overvaluation was a handicap to Jaguar, but not to BMW and Mercedes-Benz.

6.2 Similarities in treasury management of the 3 competitors⁹.

The German U.K. subsidiaries were responsible for their own hedging from 1981¹⁰. Jaguar did not have its own treasury until 1983. Prior to this, external hedging was performed by British Leyland's central treasury.

From Table 7.6 it can be seen that the treasury hedging capabilities of the three competitors were similar in that only transaction exposure was managed. The uncertainty in Jaguar's sales and output meant that it never covered its transaction exposure beyond 6 months. The 12 months of the German rivals was only a potential advantage, since with sterling rising in real terms and staying firm against the DM, the German rivals did not need to hedge (their exports to the U.K.), whereas Jaguar did need to hedge its exports.

The German rivals only needed to hedge the 30% fall in the £/DM rate in 1983. Whether they could do so is investigated in the case of BMW.

⁹This section derives from interviews with the following:

Mercedes Benz (U.K.) Ltd.: S. Mason, Treasurer, 6.7.1992, July and August 1993.

BMW (G.B.) Ltd: E. Phillips, Chief Accountant, February 1991.

Jaguar: C. Wiener, former Forex Dealer, BL, 17.5.1994; John Burke, Treasurer, Jaguar 9.8.95

¹⁰Prior to this, the importers were responsible for hedging.

TABLE 7.6
COMPARISON OF £ HEDGING STRATEGIES OF TREASURY ONLY, 1979-83

	JAGUAR (by BL's treasury)	BMW(GB)Ltd, from 1981	MERCEDES-BENZ(U.K)Ltd, from 1981
PLANNING HORIZON OF HEDGING	6 months	12 months	12 months
TARGET BENCHMARKS FOR HEDGING FORECAST RECEIVABLES	100% of forecast receivables, but forecasts never went beyond 6 months. No active management.	Cost of sales: 10-50% on discretion	50% but entirely discretionary.
EXTENT OF COVER	never beyond 6 months, mostly rolling 30-day hedges.	never beyond 12 months	6-12 months
INSTRUMENTS USED	mostly 1-6 month forwards & options.	1-12 month forwards. Sometimes options.	forwards & options.
CENTRALIZED TREASURY & NETTING PERFORMED	yes, in BL.	no	no
COST OF HEDGING APPRAISED	no	yes. The hedges are already included as part of the cost of sales at the time of purchase of the forward contracts. Hedge gains or losses are entered into the accounts of BMW G.B. when the hedge is unwound.	no
FORECASTING FUTURE RECEIVABLES A PROBLEM	yes	Not for the groups as a whole. As the U.K. market was targeted by both, both expected sales increases.	

In December 1982, BMW (GB) Ltd. had forecast liabilities of £212 M for the following year. It had forward hedging in place amounting to DM 375 M in forward contracts from 1 to 12 months. This represented approx. 50% of the 1983 cost of sales of £212 M. Payables, i.e. cost of sales, are booked at the exchange rate at the time of purchase, and

the rate is fixed once per month. The efficacy of the hedge is judged against this rate.

The limited role of the treasury in hedging can be seen in that not only was the hedge a partial one, but also the hedge profits were classified as foreign exchange gains by the Inland Revenue and taxed at standard corporation tax rate of 52 %. Thus of a 100% exposure, with partial hedging of around 50 %, less future tax, the real hedge was only to the value of 52% of 50% = 26% of DM invoices, and then only for a maximum of 12 months out. The hedge had to be renewed at much lower rates in December 1983 when forward cover amounted to DM 385 M. This again was only a 50 % hedge.

BMW (GB) Ltd. itself perceives that its effective hedge against sterling depreciation in 1983 was not so much the hedging performed by the treasury but the fact that it was able to raise its prices without any negative impact on sales. Table 7.3 shows that U.K. sales actually rose in 1983.

A similar hedging problem occurred in 1992. In 1990-92, BMW (GB) Ltd.'s treasury believed that the U.K. government's commitment to hold sterling in the ERM would be effective. It decided to cut the percentage cover in its forward contract hedge to a much lower level than in the previous ten years and consequently lost out when sterling depreciated in 1992.

6.3 Conclusions.

BL needed to hedge Jaguar's sterling currency risk 1979-82¹¹ but could not as 3-month forwards were grossly inadequate. Both BMW and Mercedes, by contrast, were able to benefit from sterling overvaluation. However, this does not mean that overvaluation is always an opportunity from which easy profits can be reaped. The case of BMW underlines that it is difficult for the treasury to know when the period of misalignment is to end and when to institute a hedge in readiness.

¹¹With hindsight, the ideal situation would be to have no hedge in place in 1983 in order to take advantage of sterling's depreciation.

7. DIFFICULTIES IN ADJUSTING JAGUAR'S PRODUCT-MARKET STRATEGY 1979-83

7.1 Jaguar.

Given that BL's treasury hedged only for 30 days, the strategic options to manage the overvaluation were to cut costs; source abroad; and switch production to its largest market, the U.S.

Jaguar was not able to pursue these strategies for the following reasons:

1. Jaguar, as part of BL, could not realistically consider the solution of producing in its largest market. BL was only kept afloat with government funds with one object being to keep jobs in the U.K. It did not have the resources to invest in new production facilities in the U.S.
2. A rapid switch to sourcing components from the U.S. was impossible. One reason is that many components were specific to Jaguar's models. Suppliers could not be changed quickly in response to currency changes.
3. Cutting costs was also problematic. Mechanization required investment. Jaguar did not have the investment funds to update its model range in the late 1970s. It was starved of investment funds by BL and did not have its own source of retained earnings. Cost-cutting by reducing staff and raising productivity was also problematic as relations with trade unions were delicate.

7.1.1 Conclusion.

With costs rising as a result of the rising real exchange rate and with the collapse in demand in the U.K. market, Jaguar in 1980-81 was forced into a strategy of massive retrenchment, i.e. massive cutbacks in output and employment.

7.2 Opportunistic strategies of BMW and Mercedes-Benz.

By contrast, both BMW and Mercedes-Benz used the opportunity of sterling misalignment to expand aggressively into the U.K. market (Table 7.3). Moreover, they also

aggressively increased their total output over the same years in which Jaguar was forced to retrench (Table 7.7).

TABLE 7.7
TOTAL OUTPUT OF JAGUAR AND ITS GERMAN RIVALS, 1977-1981

	JAGUAR	BMW	MERCEDES-BENZ
1977	24,853	290,236	401,255
1978	26,485	320,853	393,203
1979	13,988 x	336,981	422,159
1980	19,380	341,031	429,078
1981	14,677	351,545	441,000
% change 1977-81	-40.9	+21.1	+9.9

Sources: SMMT, annual reports.

x 1979 output was cut by strikes.

Table 7.8 shows that the German rivals' profits also grew over the 1977-81 period, except BMW in 1980 and 1981. Data is not available for Jaguar. It can be inferred, though without evidence as the management accounts are not available, that the collapse in Jaguar's output resulted in costs per unit sold increasing.

TABLE 7.8
NET INCOME, BMW AND MERCEDES-BENZ 1977-81, DM M

	BMW	MERCEDES-BENZ
1977	242.5	587
1978	374.6	593
1979	400.7	638
1980	298.1	709
1981	245.6	826

Source: annual reports

Indeed, BMW used the years of sterling misalignment to build up a U.K. dealer and servicing network, providing the base for the high profits from the U.K. market which were reaped from 1988 (Table 7.9). The result is that the U.K. has become by far the

second largest export market of BMW after the U.S.

TABLE 7.9
BMW'S PROFITS IN THE U.K. AND % OF COSTS DENOMINATED IN DM.

	ANNUAL PROFIT IN £ M	ANNUAL PROFIT IN DM M	% OF COSTS DENOMINATED IN DM
1980	4.6	21.5	86
1981	8.5	36.6	78
1982	6.4	24.5	85
1983	5.3	20.9	77
1984	10.1	36.9	85
1985	16.0	56.7	83
1986	4.0	11.5	92
1987	2.6	7.8	85
1988	33.3	106.8	82
1989	47.3	128.6	88
1990	36.0	104.0	84

Source: BMW, Munich.

Similarly, Mercedes-Benz strengthened its marketing base in the U.K. during the years of sterling overvaluation, bringing its U.K. sales up in line with those of its other large European markets of Italy and France.

Further, whereas Jaguar needed to source abroad but could not, the German rivals were at an advantage in not sourcing in the U.K. to match the sterling exposure which they had opened up by their export success.

7.3 Conclusions.

Jaguar's product-market strategy was too inflexible to hedge sterling overvaluation by internal means. Not only did BMW and Mercedes not have to face such difficulties, but they were instead able to exploit sterling overvaluation. Both pursued an offensive marketing strategy in U.K.

8. VULNERABILITY TO REAL US\$ DEPRECIATION 1986-92.

The period 1982-86 was one of dramatic expansion for Jaguar as US\$ overvaluation coincided with a U.S. boom. This was followed by prolonged dollar weakness and recession in the U.S. Charts 1.1, 1.2 indicate the real depreciation of the US\$ against the pound and the DM.

TABLE 7.10
COMPARATIVE VULNERABILITY TO REAL DOLLAR DEPRECIATION

	JAGUAR	BMW	MERCEDES-BENZ
Location of production up to 1993	U.K. only	Germany only	Germany only (except commercial vehicles)
% Dollar input sourcing up to 1993	negligible	less than 10%	less than 10%

Year	Units sold in U.S.		
1986	24,901	96,800	99,300
1987	22,919	87,800	89,900
1988	20,727	73,400	83,700
1989	18,967	64,900	75,700
1990	18,728	63,600	78,400
1991	9,376	53,300	58,900
1992	8,681	65,700	63,300
% change 1986-92	-65.1	-32.1	-36.2

Sources: Jaguar Cars, Coventry; BMW and Mercedes-Benz annual reports & interviews.

Jaguar and its two main German competitors have comparative currency exposures in the extent of mismatch between US\$ costs and revenues (Table 7.10). Similarly, the largest export market of all three is the U.S. However, Jaguar is much more vulnerable than the Germans because of its much higher dependence on the U.S. market (Table 7.11). It was a competitive advantage for Jaguar that its competitors were also European and did not have a US\$ cost base, but one denominated in DM. According to Scott (1987),

Jaguar noted that the price-setter for the U.S. luxury car market was Mercedes-Benz. Because Jaguar believed that its costs, particularly the combined costs of wage rates and social security contributions, were well below that of its German competitors, it perceived it had a competitive advantage in the U.S. market. How then can Jaguar's worse (Table 7.10) comparative performance 1986-92 be explained ?

TABLE 7.11
U.S. SALES AS A PERCENTAGE OF TOTAL SALES

	JAGUAR	BMW	MERCEDES-BENZ
1986	65.5	21.7	16.7
1987	55.4	19.0	15.0
1988	43.5	15.1	11.3
1989	39.4	12.4	10.9
1990	44.7	12.1	13.6
1991	40.8	9.6	10.2
1992	42.1	11.0	11.9
% change 1986-92	-33.1	-49.3	-28.7

Sources:

Jaguar - Jaguar Cars, Coventry. BMW & Mercedes-Benz - annual reports. All data refer to unit sales.

Over 65% of Jaguar's sales were in the U.S. in 1986. If the unit sales of Canada are included, the exposure to the dollar is even greater (73%), given the link between the US and Canadian dollars, (though Jaguar hedged the two currencies in isolation). In 1986, the dollar exposure of BMW and Mercedes-Benz as far as the U.S. market is concerned was many times smaller. This needs to be recognized when assessing the collapse in U.S. sales as a percentage of total sales of the three companies. Jaguar's relatively weaker position is also seen in that the collapse in sales affected Jaguar's two main competitors to a much lesser extent than it did Jaguar. BMW and Mercedes' exports to the U.S. were at a much higher absolute level - both over four times Jaguar's exports in the peak year 1986. This much higher level could engender economies of scale in marketing and servicing in the U.S. Because of the costs of infrastructure for marketing and servicing, it is possible, in the absence of information on management accounts, that

both German rivals have lower breakeven points in the U.S. than Jaguar in the event of sales downturns. Their lower vulnerability than Jaguar is also illustrated by the fact that their decline in exports to the U.S. in percentage terms was much less than that of Jaguar's (Table 7.10).

The difficulty in interpreting the differing vulnerability of the rival companies lies in principally two factors. One is the extent to which they were the product of U.S. recession rather than dollar misalignment. A second factor is that economic exposure refers to the firm as a whole, and that the competitors' activities other than car manufacture need to be included in a comparison with Jaguar. Whereas Jaguar produced only luxury cars, BMW and Mercedes-Benz belonged to holding companies which had other activities.

8.1 Impact of U.S recession.

It is notable that luxury cars are premium-priced but highly income-elastic. The decline in incomes and job-insecurity in a U.S. recession is thus a factor in the collapse in U.S. sales of all three firms. An additional factor is that in 1991, the U.S. imposed a luxury car tax of 10% on cars priced above US\$ 30,000. This did not affect all three competitors equally, since BMW and Mercedes-Benz were able to exploit the fact that they already marketed smaller models below the US\$ 30,000 threshold.

For Jaguar's German rivals, the relatively small percentage of U.S. sales out of total sales meant that their survival was not threatened even if they lost the entire U.S. market. By contrast, Jaguar's enormous dependence on the U.S. market meant that adverse changes in the U.S. could be critical to its survival. Indeed, prolonged depreciation in the real US\$/£ exchange rate came at the same time as recession in the U.S. It is not significant that the two effects cannot be separated out. Moreover, whilst BMW and Mercedes-Benz both registered significant declines in U.S. sales as a percentage of total sales, they were able to make this up by increased sales elsewhere, whereas Jaguar could not. Total sales of both companies increased, whereas Jaguar's total sales fell dramatically.

8.2 Diversification of the German rivals.

The concern from a currency management perspective is whether activities other than luxury car manufacture increased or reduced their vulnerability to US\$ depreciation.

8.2.1 BMW.

As the period considered is up to 1992, it does not include BMW's acquisition of Rover in 1994. This acquisition reduced BMW's exposure to the US\$ as a percentage of total currency exposure.

Up to 1992, BMW was less vulnerable than Jaguar to US\$ depreciation on two fronts. Firstly, whereas Jaguar has been dependent for many years on sales of only two models - (a saloon and sports car) - BMW makes a much wider range of models and smaller models have a wider market. Secondly, BMW manufactures motorcycles and has a joint-venture with Rolls-Royce in the manufacture of aircraft components. However, the percentage of total turnover accounted for by these latter activities is minor (3% of turnover).

8.2.2 Mercedes-Benz.

Mercedes-Benz belongs to a conglomerate, Daimler-Benz, which includes Deutsche Aerospace (10% of group turnover), with sales largely denominated in US\$ and costs in DM, and AEG (16% of group turnover), with costs largely denominated in DM, but less vulnerable to US\$ revenues. Mercedes-Benz turnover and profits are around 70% of those of the group. 30% of Mercedes-Benz's sales volume consists of commercial vehicles. Dollar exposures to U.S. commercial vehicles sales are to an extent matched by U.S. production.

8.3 Conclusions.

Daimler-Benz is much more diversified than both BMW and Jaguar but Daimler-Benz's netted exposures are more vulnerable to US\$ depreciation than those of BMW. However, the objective here is merely to investigate changes in competitive position in only one segment, i.e. U.S. luxury car sales. It is reasonable to focus on one segment since the

car division of Mercedes-Benz has independent managerial responsibility and it is is a core activity, whereas other segments are not.

9. LIMITED ROLE OF THE CORPORATE TREASURY IN MANAGING US\$ MISALIGNMENT.

9.1 Hypotheses.

Jaguar has been hailed as a pacesetter in corporate treasury attempts to manage economic exposure¹². Before 1990, Jaguar had a rolling two-year plan of currency hedging but in 1990, lengthened this to a rolling five-year plan. This laid down maximum percentages of forecast receivables to be fully hedged, using 5-year forward and option contracts. The percentage was 75% in the first year, declining to 50%, 40%, 30% and 25% of forecast receivables in consecutive years. This reflects the difficulty in forecasting future output levels. The rationale was not to introduce a system of automatic hedging that would override the discretion of the treasurer. Such traditional discretion could arguably worsen rather than improve hedge performance on account of the virtual impossibility of accurately forecasting real exchange rates. Instead, Jaguar's system was highly discretionary and closely monitored based on business plan forecasts, unit economic profit reports and changing market views on exchange rates.

The hypotheses to be investigated here are twofold. Can Jaguar's boldness in hedging externally 5 years out be recommended to other companies seeking to manage economic exposure? Secondly, can a system of hedging based on benchmarks produce, a priori, better hedge results?

9.2 Similarities in hedging needs and treasury management of the three competitors.

The basic problem facing all three competitors was that because they could not forecast the US\$/£ exchange rate beyond the near-term, they could not forecast unit sales in the U.S. For Jaguar, the problem was much worse - it consequently could not forecast its future output levels.

The conventional response of the treasury literature to such uncertainty, to use options,

¹²T. Harrison, President of the Association of Corporate Treasurers, interviewed 19.7.93.

did not present an effective solution for the three competitors since they required cover up to 5-years out, but prices quoted beyond two-years were unusable i.e. options were useless for when they were most needed.

A second similarity is that a need for continuous hedging existed in all three competitors, given the duration of US\$ weakness.

TABLE 7.12
COMPARISON OF US\$ HEDGING STRATEGIES OF TREASURY ONLY, 1986-92

	JAGUAR	BMW	MERCEDES-BENZ
PLANNING HORIZON OF HEDGING	2 years 1984-90 5 years 1990-94	3 years	max. of 5 years based on 5 year cash forecasts, but acknowledged that exchange rate forecasting not reliable 5 years ahead !
TARGET BENCHMARKS FOR HEDGING FORECAST RECEIVABLES	From 1990: 75% in year 1, then on declining scale to 25% in year 5, but flexibly interpreted		none. entirely discretionary.
EXTENT OF COVER	totally discretionary, despite the target benchmarks	discretionary	discretionary. Receivables hedged on a rolling basis, usually of short-term duration.
INSTRUMENTS USED	mostly 5-year forwards. Some options up to 2 years out. No swaps		forwards & options. No swaps
USE OF US\$ FUNDING	yes. Commercial paper issued by Jaguar plc, but not enough to hedge US\$ receivables	yes	yes. US\$ Eurobond issue. New York stock exchange listing was not until Oct.1993.
CENTRALIZED TREASURY & NETTING PERFORMED	small size of operation meant only one treasury.	yes	Up to 1991, foreign subsidiaries acted independently. Since 1991, to cope with the enlargement of the Daimler-Benz group, the treasury was centralized.
COST OF HEDGING APPRAISED	no	yes, but details not available	no
FORECASTING FUTURE RECEIVABLES A PROBLEM	yes	not for the group as a whole.	not for the group as a whole, but a big problem in forecasting U.S. sales.

A third similarity is that the best means of continuous external hedging is via borrowing the equivalent of U.S. sales in US\$ and converting the proceeds to lock in current exchange rates. Locking into US\$ borrowing at high real interest rates, when the outlook was for declines in interest rates, was not an attractive proposition. Instead, all three purchased forwards and options, but did not use swaps, reflecting the dangers in locking into long-term rates.

9.3 Difficulties for Jaguar to externally hedge its US\$ risk¹³.

One benchmark to judge the effectiveness of external hedging is the extent to which it corresponded to the hedge that would have been installed if perfect foresight existed. The principal reason to believe that discretion is superior to benchmark hedging is that there are times when the balance of probabilities favour a particular exchange rate outlook. One such circumstance was 1985, when the US\$ had already been grossly overvalued for five years. Given the internal and external imbalance in the U.S. economy, a treasurer with intuition could have deduced that such an imbalance could not last indefinitely into the future, particularly in view of the impact of the distortions on the U.S. economy from the US\$ overvaluation. Moreover, given the long duration of US\$ overvaluation, the probability that it would go higher was lower than that the US\$ would weaken. With hindsight, it can be seen that discretion to lock in favourable 1985 forward rates for the entire duration of the prolonged US\$ weakness, would have yielded better results than short-term hedging.

However, this is purely hindsight analysis. No perfect foresight existed which could have foreseen that a six-year forward hedge would be necessary. As future exports to the U.S. would not be known in advance, it can be assumed that the forward contracts would need to be to the value of US\$ sales in 1986. However, the actual outturn of sales in each of the years to 1992 was significantly lower than that existing in 1986 (Table 7.10). The forward hedge should have yielded a profit sufficient to offset the decline in sales that actually occurred.

¹³Alison Cambage, Jaguar's Foreign Exchange Manager since 1986, interviewed 22.7.93

What Jaguar actually did can now be compared with the above benchmark. Jaguar's boldness in using 5-year forwards can be recommended to other companies to hedge economic exposure, but only if the treasurer is confident on the currency outlook and the size of future cash flows. In reality, treasurers do not have perfect foresight and thus cannot be confident enough to use discretion to commit the firm to current 5-year rates.

A second critique is that Jaguar's hedging plan was not comprehensive since only a small proportion of non-contractual exposures were hedged in further-out years. According to Burke, Jaguar's treasury had no ambition of managing economic exposure. This reflects that the process of forecasting receivables is subject to severe limitations.

The target percentages to be hedged were routinely ignored, reflecting the emphasis of the treasury on constant market monitoring and short-term market moves. Firstly, target US\$ exchange rates were calculated at which Jaguar could make a profit on car sales in the U.S. Alongside the "target exchange rates" were "forecast exchange rates". If the forecast could be relied upon, then the difference between the target and forecast exchange rates served as a benchmark for forecasting Jaguar's profits. If the forward rate gave a better rate than the forecast rate, then this served as a decision rule to purchase forwards, since the forwards permitted Jaguar to lock into a better exchange rate than both the forecast and the target rate and thus lock in a profit. The risks to these tactics are considerable. Firstly, the forecast rate may turn out to be conservative and Jaguar might have obtained a much higher profit had it not hedged. Secondly, if the forecast exchange rate turns out to be optimistic and Jaguar has in consequence not already hedged, or delayed hedging via forwards, forward rates can quickly turn unfavourable, leaving Jaguar with adverse exchange rates. This is particularly significant given that only a low percentage of dollar receivables in further-out years were hedged at current rates, though the actual percentage hedged depended on market rates.

A second reason why Jaguar's hedging plan was not on autopilot is that 5-year forward contracts could only be bought provided it was permitted within Jaguar's bank limits. Sometimes capital adequacy problems prevented the treasury from conducting the extent

of 5-year hedging that it planned. Whether owing to restriction or to override, the use of shorter contracts such as 1-year forwards, meant that they could only be renewed each year at a less favourable rate. For example, in 1987 Jaguar's US\$ revenues for that year were hedged at \$1.38 to the pound, but in 1988 this hedge could only be renewed at the worse rate of 1.55, a difference of £50 M to £60 M in annual pre-tax profits. The results were nevertheless better than if Jaguar had not hedged at all and simply used the spot market (spot 1.64 and 1.78 respectively). In 1989, the 75 % hedging was at a rate of \$ 1.70 to the pound. On Jaguar's own figures, in 1989 every 1 cent decline in the value of the dollar against sterling was forecast to reduce profits by £3 M to £3.5 M.

Thirdly, there was no automatic hedging plan for interest rate risk. The dramatic rise in real U.K. interest rates from 1988 was not hedged. Instead, Jaguar had a commercial paper programme for arbitrage, but this was stopped subject to the Ford takeover in 1989.

9.4 Conclusions.

Jaguar's 5-year hedging plan was highly discretionary and the target benchmarks reflected a "comfort level", not a system for imposing controls over treasury discretion.

Over the period 1984-91, Jaguar made a net profit of £250 M from its forward hedges, as compared with the spot rate (**Chart 7.4**). This can be considered a strong performance. Hedge losses occurred at the period of dollar strength up to 1986, and also in the 9 months of 1989. Burke notes that not hedging up to 1986 would not have been risk averse. Overall, hedges outperformed spot rates.

The hedging policy still left exposures uncovered. Foreign exchange gains/losses are entered on the balance sheet as "Other Reserves". These amounted to £3.5 M in 1988, 7% of pre-tax profit. However, they still compensated only partially for the decline in the dollar.

Jaguar's treasury was not a pacesetter in managing its economic exposure, and it had no

ambitions to manage it. If Jaguar could be successful in such management, why were German rivals not emulating Jaguar ?

Jaguar's treasury nevertheless could not have reasonably performed any better than it did. If it had not instituted a 5-year hedging plan, it could be criticized for not attempting to hedge non-contractual exposures. If Jaguar had not hedged at all against the possibility that US\$ strength up to 1986 would not last, it would have maximized profits. But had the real US\$/£ rate suddenly weakened, the treasury could have been criticized for not having a hedge in place. Thus Jaguar's treasury, like those of its rivals, was merely a pawn of the external environment.

The fact that in 1993 Ford cut Jaguar's hedging plan to 2 years and that BMW's and Mercedes' hedging plans were shorter than 5 years (Table 7.12) merely reflects the difficulty in forecasting future exchange rates and therefore future cash flows. This recognizes that key variables such as sales and output, cost of inputs and even model ranges cannot be forecast five years ahead. Thus whilst the planning horizon for hedged during overvaluation should conceptually be as long as possible, in practical terms this is only of benefit with perfect foresight. Nevertheless, Jaguar is currently in discussion with Ford to reintroduce a 5-year hedging plan. Given the speed with which a currency outlook can change, discretion is highly advisable, as opposed to running a hedging plan on auto-pilot.

BMW's¹⁴ hedging schemat is based entirely on discretion. It attempts to forecast cash flows 36 months out¹⁵, and depending on the exchange rate outlook, a decision is made as to whether to hedge the currency risk, whether to cover it fully or partially and

¹⁴Source: Norbert Meier, Head of Corporate Finance, BMW Munich, 24.8.93

¹⁵Meier recognizes that although some economic exposure as well as transaction exposure is included in the treasury's 36-month planning horizon, he states categorically that the responsibility for managing BMW's economic exposure does not lie with the treasury. Instead, responsibility lies with the Group Strategy Department. It is implicit from this that the role of BMW's treasury is perceived internally as more one of financial management rather than one of strategic management.

whether to cover it for the full 36 months forward or not. One contrast with Jaguar is that its German rivals and Ford had no problem of bank restrictions on account of their financial strength.

However, this does not mean that the German rivals had any better success than Jaguar in hedging against a possible decline in the US\$. BMW used options between 1981-85, and when the treasury had greater confidence in an outlook of US\$ depreciation, more aggressive strategies using forwards were used. Unlike Jaguar, BMW has no benchmarks for hedging certain percentages of forecast receivables, which therefore places a premium on getting the forecast right.

For the period of US\$ weakness between 1986-92, BMW did not wish to state whether its US\$ exposure was covered fully or partially for the 36-months planning horizon from 1986 or for any of the period. However, Meier stated that BMW's US\$ hedge could only be renewed at less and less favourable rates. It is also not clear that the treasurer in the selected firms is aware of the ex post figures himself. Without precise knowledge of the partial effectiveness of external hedges, it is not possible to make a valid comparison of alternative hedging strategies such as sourcing or production in a US\$-denominated base. In BMW, the cost of hedging is calculated by the Financial Analysis department, which is separate from the treasury. The appraisal of this cost is in the form of a discussion with the treasury. This leads to recommendations for future policy, such as whether to be more conservative in strategy. This can take the form of increasing the proportion of forecast receivables that is hedged. Proof that BMW was not able to immunize itself against US\$ undervaluation is contained in the following BMW internal data:

TABLE 7.13
BMW' PROFIT/LOSS IN THE U.S. MARKET 1986-92, DM 000s

1986	n.a.
1987	66,663
1988	173,533
1989	18,591
1990	-17,537 LOSS
1991	-13,332 LOSS
1992	-46,000 LOSS

Source: Niemann & Kerle, BMW Munich, 3.8.1993

Mercedes-Benz was unwilling to give detailed information on its US\$ treasury hedging, but the treasuries of none of the three competitors could hedge away the dollar exchange risk.

Although Ford bought Jaguar in 1989, it did not integrate Jaguar's treasury with its own until 1994. Jaguar's policies and hedging strategies remained with Jaguar until April 1995. Jaguar can nevertheless make suggestions to Ford's treasury as to how its exposures should be managed. The question investigated here is whether being part of a major MNC such as Ford has solved Jaguar's currency management problem¹⁶.

Interest rate risk management¹⁷ was transferred to Ford, with Ford acting as a bank to Jaguar's treasury. Jaguar's purchase price of £1.56 bn was financed by issuing US\$ denominated bonds in the name of Ford Capital BV. The decision to denominate the financing in US\$ rather than pounds was significant. Firstly, a US\$ liability matches Jaguar's high exposure to US\$ revenues. Secondly, by financing in US\$, Jaguar escaped the dramatic rise in real sterling interest rates from mid-1988 to 1992. Had Jaguar remained independent and had it been financed in sterling, Jaguar's problem of currency risk 1990-92 would have been magnified by massive interest rate risk.

¹⁶see section 9.2.

¹⁷N.Layard, Interest Rate Risk Manager, Ford Europe, interviewed 27.7.1993.

10. DIFFICULTIES FOR JAGUAR TO ADJUST ITS PRODUCT-MARKET STRATEGY TO CREATE A NATURAL HEDGE 1986-92.

10.1 Comparative analysis of how US\$ risk was internally hedged 1986-92.

The purpose of this section is to show that major changes were needed in Jaguar's product-market strategy to internally hedge US\$ depreciation, whereas the product-market strategies of BMW and Mercedes-Benz were much closer to the elusive goal of securing a natural hedge. In the case of Jaguar, with 65% of its sales arising from the U.S. in 1986 (or almost 73% if Canada is included), creating a natural hedge would involve matching US\$ cash inflows with US\$ cash outflows. To implement this principle, the major changes needed in Jaguar are a combination of producing/sourcing in its major market, the U.S., and of diversifying its markets. **Table 7.14** compares how well Jaguar accomplished this compared to its German rivals.

TABLE 7.14
 STRATEGIC OPTIONS OF JAGUAR TO MANAGE ECONOMIC EXPOSURE COMPARED WITH BMW
 AND MERCEDES-BENZ, 1986-1992

OPTIONS IN MARKETING INITIATIVES

Market selection and segmentation

Jaguar

Diversification of markets was accomplished with some success (Table 7.18). However, Jaguar still remained highly dependent on the U.S. market, resulting in a collapse in Jaguar's total sales in the years 1986-92. Jaguar never had the necessary volume sales in other markets to support fixed costs when US\$ depreciation squeezed margins and sales.

BMW and Mercedes-Benz

Both had already accomplished significant currency matching as both had a much higher proportion of sales in home currency and EMS currencies than Jaguar did. Both had already invested in a global marketing infrastructure whereas Jaguar had not. Thus neither of the German rivals were dependent on the U.S. market (Table 7.11). Both German firms had the strength to focus on markets other than the U.S., eg. Japan. After beginning in the early 1980s, both were selling over 30,000 cars p.a. to Japan ten years later.

Only by 1988 had Jaguar invested in the necessary infrastructure to double its sales in Japan, but its 1124 units sold in 1988 was one-twentieth the level of BMW and Mercedes-Benz.

When the U.S. 10% luxury car tax was imposed in 1991, BMW had the capability to increase sales of smaller 3-series cars. Jaguar and Mercedes did not.

Product strategy

Jaguar

Jaguar had no resources to bring out new models. Declining profitability (Chart 7.3) forced it to scrap plans for a new "F-type sports car" in 1990. Jaguar was forced to cut capital spending from £132M in 1990 to £44M in 1991.

BMW and Mercedes

Both had the resources to bring out new models. Neither companies cut their R&D budgets. Capital expenditure remained relatively stable during the collapse in their sales in the U.S. market (see Table 7.16).

Pricing strategy

Jaguar's response to dollar depreciation was a complete inability to raise prices. From the autumn of 1987 to February 1989, Jaguar was unable to impose any price increase in the U.S. and was forced to defend existing levels (FT 16.3.1989)

BMW and Mercedes

Price passthrough was similarly restricted, but whilst profit margins on U.S. sales suffered, both companies were sufficiently diversified to increase total profits from other markets.

TABLE 7.14 (cont.)

OPTIONS IN PRODUCTION INITIATIVES
<p><u>Product sourcing</u></p> <p>Jaguar Instead of sourcing from countries with currencies linked to the dollar, Jaguar's strategy was to augment its sterling-denominated sourcing. Jaguar's policy was one of minimizing "days on hand". This refers to the number of days from acceptance of components to shipping of finished goods. Jaguar believed that the use of foreign suppliers would require more stocks to be held in order to avoid stoppages owing to late delivery.</p> <p>No investigation was made of the cost savings from reducing inventory by using U.K. suppliers as compared with reducing economic exposure arising from a better match of the currency denomination of costs and revenues. (Jaguar's % of sourcing denominated in DM at 25% was also much higher than DM revenues. This gave rise to another currency mismatch).</p> <p>BMW and Mercedes-Benz Neither bothered to increase their relatively small volume of U.S. sourced components 1986-92. The reason given by Mercedes is that US components were too expensive (Frantzke 1993).</p>
<p><u>Plant location</u></p> <p>Jaguar Jaguar was free to choose plant location when it became independent in 1984, but did not have the resources to produce in a US\$ cost area.</p> <p>BMW and Mercedes-Benz. German rivals had the resources to shift production but saw no need. Both had a deliberate "Made in Germany" policy.</p>
<p><u>Raising productivity</u></p> <p>Jaguar In mid-1988, Jaguar was forced into a major cost-cutting programme. Whilst the target was a 5% across-the-board cut in costs, there were limits to the extent to which investment and costs could be cut. In 1984, the average age of Jaguar's machine tools was 25 years (FT.16.3.1989). From 1988, Jaguar's capital investment budget was cut to 10% of turnover and R&D spending to 5 % of turnover. Turnover was itself declining.</p> <p>When Ford took over, two production lines dated from 1955. In 1993, a new single line could produce 25 cars per hour instead of 16, giving a maximum capacity of 50,000 p.a. Ford increased productivity by 50% and cut the breakeven point by one third.</p>

Table 7.14 indicates how limited the options of Jaguar were to strategically manage its economic exposure compared to its German rivals, yet they were far better placed to manage them. In marketing strategy, the collapse in Jaguar's sales in the U.S. was not

offset by gains elsewhere, as was the case with BMW and Mercedes-Benz.

Faced with the inability to raise prices in the U.S. market, Jaguar's options were limited to selling at a loss or cutting output. It was forced into the latter option.

Whilst the above constraints are consistent with the hypothesis that Jaguar was unable to manage prolonged US\$ undervaluation, they do not constitute a proof. The factors that might have enabled Jaguar to surmount misalignment are, in marketing strategy, a superior product and, in production strategy, cutting costs¹⁸ to offset the US\$ depreciation. Neither of these strategies were operational. To make Jaguar's product the best available on the market and superior to that of its German rivals would have necessitated massive expenditure on research, development and capital expenditure and on marketing. However, Jaguar's capital expenditure was only a fraction of that of its German rivals (Table 7.15).

TABLE 7.15
CAPITAL EXPENDITURE OF JAGUAR AND ITS GERMAN COMPETITORS 1986-92

	JAGUAR £ Millions	BMW DM Millions	MERCEDES-BENZ DM Millions
1986	94	2237	na
1987	132	2112	na
1988	104	1911	na
1989	74	1820	3003
1990	70	2066	3083
1991	44	2123	3207
1992	46	1975	3119

Source: annual reports. Jaguar:Coventry

¹⁸Jaguar's chairman stated that the potential for cost saving was limited. However, the fact that Ford later cut Jaguar's breakeven point (this can be defined in terms of sales or export volumes) by one third reveals the contrary. What is not known is the capital expenditure that Ford undertook in order to cut the breakeven point. If Jaguar on its own did not have such funds available for capital expenditure, then this would underline the inflexibility of its options in managing currency misalignment.

Jaguar could thus only be a follower, and not a pacesetter, to its German rivals. In this sense, Jaguar had only its "British craftsmanship" to sell to the U.S. yet this precluded switching production to a cheaper cost location. Only years later (FT.12.4.1994) was Ford quoted as stating that British manufacturing was not crucial to Jaguar's future success and marketing image¹⁹.

If cutting costs is an instrument of managing exchange rate misalignment, it needs to be explained why both BMW and Mercedes-Benz were able to increase total sales in 1986-92 even though their cost base in Germany was supposedly higher than that of Jaguar in the U.K. Moreover, Jaguar's lower costs did not prevent it from falling into massive losses from 1989 onwards. The relevant question is to what extent the German rivals' higher costs were an impediment and what scope existed to cut their costs. The key point is that they had enough flexibility between 1986-92 not to need to change strategy. After 1992, the strategic change was in response to the entry of Japanese manufacturers to the luxury car market²⁰. The Germans had to cut costs to match Japanese rivals.

In view of the Japanese threat, the three luxury car manufacturers could not remain as they were, nor could they turn themselves into mass manufacturers such as VW or Fiat. The strategic options are summarized in **Table 7.16**:

¹⁹However, this statement may have been a negotiating ploy to obtain subsidies for new plant for Jaguar's new small car.

²⁰Access to cheap capital and longer working hours give the Japanese an immediate 10 % cost advantage (Niefer, CEO Mercedes, E:4.3.1993:41) on top of lean manufacturing. Mercedes estimates that to become truly competitive with Japanese rivals means a reduction of 20 to 30 % in the Mercedes cost base (Hubbert, Head of Car Division, Mercedes in E:4.3.1993:41). Edzard Reuter, Chairman of Daimler-Benz, links the need to cut costs with the need to produce abroad for exchange rate reasons: "Unit output of Mercedes-Benz will increase quite visibly...These additional vehicles probably have important markets outside Germany or even outside Europe. This means that for exchange rate reasons alone we needed to consider producing abroad" (FT 8.3.1993:30).

TABLE 7.16
 STRATEGIC OPTIONS OF JAGUAR TO MANAGE ECONOMIC EXPOSURE COMPARED WITH BMW
 AND MERCEDES-BENZ, FROM 1992

Options in marketing initiatives	Options in production initiatives
<p><u>Market selection and segmentation</u> Jaguar Still heavily dependent on U.S. for 44% of sales in U.S. in 1993. Hopes that balance will be shifted towards European sales when it brings out smaller model, but not until 1998. BMW & Mercedes Already global.</p> <p><u>Product strategy</u> Jaguar Ford allows US\$1BN for new model range. BMW & Mercedes Both plan to meet a much wider range of market segments, eg. estate cars, jeeps.</p> <p><u>Pricing strategy</u> Jaguar Can only hope that premium price on new models and less dependence on U.S. market will reduce vulnerability to US\$ risk.</p> <p>BMW & Mercedes Mercedes' strategy is to use "target pricing" to cut costs. Method is to estimate what the customer is willing to pay in a particular product category, compared to its competitors, add a profit margin and then cost every component to produce the vehicle at the target price. BMW's strategy is to continue to seek a premium price on all its models, but at a competitive level by reducing costs.</p>	<p><u>Product sourcing</u> Jaguar Cheaper sources from Mexico are only realistic if it builds its own plant within the North American Free Trade Area (NAFTA). BMW & Mercedes. Jan.1993 - both cut costs by collaborating in parts manufacture, representing a major cultural shift in the two firms. Previously there had been no such cooperation between the two firms. Both cut costs by increased sourcing outside Germany.</p> <p><u>Plant location</u> Jaguar Only considering production in Portugal and in existing Ford factories within NAFTA, but in reality is restricted to U.K. BMW & Mercedes Both go global to cut costs eg. BMW's U.S. costs are projected at one-third lower than in Germany.</p> <p><u>Raising Productivity</u> Jaguar Recognition that overhead costs are more important than U.K. wage costs, which amount to only a modest percentage of unit costs. Nevertheless workforce cut by one-third. BMW & Mercedes Both announce job cuts in Germany, representing a significant cultural change.</p>

10.2 Conclusions.

From Table 7.16 it can be seen that radical changes in product-market strategies were contemplated in all three companies. All three decided to widen their product range, all three decided to dramatically increase sourcing from cheaper suppliers and all three considered car production abroad, with the Germans putting it into effect.

The differences between Jaguar and its German rivals are firstly, that the Germans have diversified out of dependence on luxury cars by producing niche products with a premium price in a much wider range of market segments. Since Jaguar already belongs to a mass producer, Ford, it might be hypothesized that it does not need to shift out of its dependence on luxury cars, but the relative inflexibility of Jaguar's product-market strategy compared to its German rivals means that Jaguar's future depends on luxury cars and it also depends on the capital injections that Ford is willing to make. Indeed, Jaguar's decision to produce a wider range of luxury cars came only after years of losses. It was only made possible by a US\$ 1 bn cash injection from Ford.

A second difference is that the independence of Jaguar's German rivals is underlined by their considerable potential to cut costs by producing abroad. By contrast, if Jaguar is not able to make the rate of return that Ford requires from a narrow market niche in which competition is intensifying, its future will be in jeopardy. Indeed, Jaguar's diversification to a smaller model was not implemented swiftly²¹. Jaguar is also constrained in its ability to diversify out of the luxury segment since this would cheapen its luxury marque. It was this exclusivity which was one of the main reasons that Ford sought to add Jaguar to its product range. It is not known whether Ford believed it could enhance Jaguar's performance by reducing Jaguar's foreign exchange risk.

A third option which Ford appears to be depending on is geographical diversification of Jaguar's markets. Jaguar has secured a better currency balance in its sales by increasing sales to continental Europe (Table 7.17), but it is not explained why the company was so slow to target markets other than the U.S.

²¹According to Burke, Jaguar's policy was that it was pointless to build more models until union relations and the manufacturing process had first been reformed.

TABLE 7.17
JAGUAR'S SALES DISTRIBUTION BY REGION IN %, 1985-92.

	1985	1986	1987	1988
U.K.	17.5	15.8	21.7	28.8
U.S.	62.9	65.5	55.4	43.5
Canada	6.0	7.1	6.0	5.5
Europe	8.2	7.6	10.7	14.0
Other	5.4	3.9	6.2	8.2

	1989	1990	1991	1992
U.K.	30.0	24.9	22.6	24.9
U.S.	40.0	43.8	36.5	38.6
Canada	3.4	2.4	2.9	2.6
Europe	17.3	18.9	24.6	22.4
Other	9.3	10.0	13.4	11.5

Source: Jaguar Cars

More significantly, the treasuries of BMW and Mercedes-Benz had a comparatively minor management problem compared to that of Jaguar. This is because of the far greater success of the German rivals in creating flexibility in their product-market strategy which was far closer to a natural hedge than that of Jaguar. This result was not so much an intended part of the two German companies' strategy as a natural and accidental result of their business expansion.

Jaguar could never do this alone. It is asserted by Holland (1993:213) that Ford's takeover of Jaguar has now finally solved Jaguar's currency management problems. The reason given by Holland is that the net US\$ cash flows from the Jaguar subsidiary were not seen as the central currency management problem of a U.S.-based parent with large scale cash flows in many other major world currencies. This conclusion does not appear to be correct for two reasons. Firstly, Ford does not offer a natural hedge to Jaguar because Jaguar's exports to the U.S. and other dollar-linked countries are not offset by a flow of Ford car exports from the U.S. to the U.K. Secondly, Jaguar's performance as measured by its individual profit and loss statement is considered independently of

other entities in the Ford group, such as Ford U.K. or Ford of Europe.

11. CONCLUSION.

Jaguar suffered a collapse in sales during the 1979-83 sterling overvaluation, was then able to enjoy some highly profitable years when the US\$ was overvalued, but sales collapsed again when the US\$ was in prolonged weakness 1986-92²². Jaguar could not immunize itself from the misalignments via adjustments to its product-market strategy and the burden of management fell exclusively on the treasury. The case-study has demonstrated that the treasury was similarly ineffective in economic exposure management. In consequence, Jaguar was forced into a second period of massive retrenchment. The treasuries of its German rivals were similarly ineffective in managing prolonged US\$ weakness, but unlike Jaguar, their product-market strategies were sufficiently flexible.

Thus the impact of US\$ depreciation was far more severe on Jaguar than on its German competitors. The German rivals could go on increasing output and profits, whereas Jaguar was forced into massive losses and the loss of its independence.

²²This is consistent with weak demand for a highly income-elastic product during U.K. recession, strong demand during a U.S. boom, and then weakness again during U.S. and U.K. recessions. Whilst the German rivals' cars are also income-elastic, the difference is that they were nowhere near as dependent on the U.K. and U.S. markets as Jaguar was and is.

CHAPTER EIGHT

ICI

1. OBJECT OF CASE-STUDY

The previous case-study of Jaguar's inability to manage currency misalignment is an example of major inflexibility in product-market strategy. However, this can be considered to be an extreme case owing to Jaguar being a one-product firm. The purpose of the present case-study is to demonstrate that vulnerability to currency overvaluation can seriously threaten even a diversified and highly successful world-class MNC. It is extraordinary that this subject has not yet been documented in the literature. Pettigrew's (1985) mammoth volume on ICI's strategic change only mentions currency risk in passing as an extraneous factor (mentioned only twice, in pages 67-68). Pink's (1988) account of ICI's strategic change again just mentions currency risk as only one of a number of environmental factors. Although the purpose of Pink's account is to describe a revolution in strategy stemming from ICI's difficulties during sterling misalignment, he neglects to provide a treatment of the role of currency overvaluation in this crisis.

The reasons why ICI's difficulties in managing sterling misalignment have not so far been documented can only be speculated upon. One is that published work has focused on business strategy, reflecting the specialization of the authors. It is hypothesized here that ICI's treasury could not mitigate significantly the strategic problem created by vulnerability to currency misalignment. If corporate planners have neglected ICI's means of managing currency overvaluation because of a lack of knowledge of the functions of ICI's treasury, it is necessary to investigate what ICI's treasury insiders have written. Alan Clements was ICI's finance director at the time of sterling overvaluation 1979-83 and treasurer prior to this. In an article dealing in general terms with how corporations have adapted to the advent of floating exchange rates in 1973, Clements (1989:159 and

166) concluded that:

"...through the turbulent 1970s, it was possible to grapple with many of the group's (ICI's) problems arising from currency volatility, inflation and interest rate changes in one centralised operation. Many other companies involved in international trade had developed similar systems, or were in the process of doing so."

"systems built up in the 1970s have stood the test of the 1980s remarkably well".

This conclusion refers to treasury systems, as noted by Clements:

"...The systems developed in the 1970s aimed at achieving three broad objectives - control over the company's cash flows and monetary risks, mobility and flexibility in the ways in which the company might cope with these risks."

In this statement, Clements has not claimed that the corporate treasury is able to solve - if "solve" is an appropriate term for an enduring phenomenon - all the problems stemming from currency overvaluation. It may seem paradoxical that this is not claimed yet at the same time Clements concluded that corporate treasuries have been able to meet the objectives set for them. The paradox may be explained in that the yardstick of success reflects the objectives set for the treasury and these did not include hedging away the problems of prolonged currency overvaluation. The hypothesis of this thesis is that the treasury does not have the means of doing so, otherwise ICI's treasury might well have suggested it.

If the corporate planner and the treasurer do not have a profit responsibility for managing currency misalignment, the question arises as to who bears responsibility for the impact of exchange rate changes on profitability. The actors most affected include the business divisions, since they are responsible for their own individual profitability. For the profitability of the group as a whole, the responsibility lies with senior management, such as the chairman and ICI's several deputy chairmen.

Demonstrating that ICI's management believed that overvaluation created a crisis within the firm, the Chairman's Foreword in the 1980 Annual Report states:

"...whilst U.K. costs continued to increase, reflecting a high (though now falling) rate of inflation, export realisations and U.K. selling prices were depressed by the strength of sterling. Exports account for a vital one-third of our U.K. production, and by the end of 1980 much of this business had become profitless."

In the 1981 Annual Report, the Chairman's Foreword states:

"In the final quarter of 1980, exports from the U.K. were making losses at a rate of £200 M per annum...The possibility of price increases was limited because of low growth in demand and overcapacity in production. Thus cost inflation could not be fully recovered in many parts of the business" (page 4).

Further confirmation that ICI's export profitability and domestic demand were adversely affected by sterling overvaluation is provided by Harvey-Jones¹ (1991:343-345):

"...As the year (1980) progressed...The only escape was to export and there, because of the high exchange rate, we lost money on every ton we sold. Even if you took out the whole of our labour cost, we would still be losing money. It was doubly galling since independent surveys of the heavy chemicals business in Europe had shown us to be in the absolute top league technically - in fact in many cases the best - on such crucial competitive areas as on-line time and conversion factors. It looked increasingly as though we might have to shut down the heavy chemical end altogether unless the exchange rate eased back."

Confirmation that ICI's management perceived the inability to forecast as a major problem is confirmed in the following statement by Harvey-Jones:

"...It was plain that we could not look to any return, certainly in the short term, of the demand from our customers in the U.K. In fact it was to take a further six years before the growth that followed brought us close to the demand figures we had envisaged."

In terms of testing the nerves it was as tough a time as I've ever experienced. The whole time the problem was to try and balance the present and the future."

This is underpinned by a third statement:

"The time came when we had to take the forceful decision on our dividend and we had

¹ICI's deputy chairman during the rise in sterling 1979/80 and chairman from 1982 to 1987

to take it against a background where no one could guess when the current pressure would abate".

Thus whilst Pettigrew and Pink have only mentioned ICI's vulnerability to currency risk in passing, it has been left to Harvey-Jones (1991) to assign to currency misalignment a role in causing ICI's crisis in the early 1980s.

The purpose of this case-study is to investigate Harvey-Jones' claim. The methodology is as follows. Firstly, it is necessary to define the crisis that ICI found itself in. Secondly, it is necessary to prove that currency misalignment was a causal factor. It is here that differences in perception can exist between corporate planners, treasurers and those with overall profit responsibility for the corporation. ICI's vulnerability to sterling overvaluation is investigated. Thirdly, the strategies adopted by ICI's treasury in the years 1979-83 are investigated to demonstrate the inadequacy of external hedging as a solution. Fourthly, it is demonstrated that ICI was, in consequence, forced to adapt its product-market strategy just to survive. Fifthly, the extent to which sterling overvaluation gave German rivals a competitive advantage is investigated. Sixthly, the success of ICI's strategic and organizational change is appraised in the light of how ICI was able to cope with a second period of sterling misalignment between 1990-92.

2. ANATOMY OF CRISIS.

The anatomy of ICI's financial deterioration is depicted in Table 8.1.

TABLE 8.1
ICI, SUMMARY PROFIT AND LOSS £M 1979-82

	1979	1980	1981	1982
Total Sales	5,368	5,715	6,581	7,358
Interest Charges	82	111	129	135
Pre-tax Profit	613	284	335	259

RATIO ANALYSIS

CURRENT RATIO	2.17	2.11	1.94	1.77
QUICK RATIO	1.24	1.25	1.22	1.08
GEARING	32.43	35.69	39.15	34.53
INTEREST COVER	8.47	3.56	3.60	2.92
PROFIT/SALES	11.42	4.97	5.09	3.52
ROA	16.0	8.4	9.1	7.3
SALES/STOCK	4.7	5.34	5.25	5.34
STOCK TURNOVER (IN DAYS)	78	68	69	68
SALES/FIXED ASSETS	1.73	1.66	1.74	1.92

Source: calculated from annual reports.

The data show a major decline in profitability and an increase, though not a major increase, in indebtedness. Interest charges rose by 65% and by 1982 amounted to 52% of pre-tax profit. The interest cover ratio showed a marked decline, but the decline in liquidity was less marked. The profit/sales ratio showed a major deterioration, but the stock turnover ratios do not suggest any major problem in selling stock. It can be inferred from this that stock was sold at a much lower profit margin.

Given that ICI continued to declare profits in its annual reports over the period of sterling overvaluation, it does not appear to be a crisis at all. The nature of the crisis is best put in the words of Harvey-Jones (1991:343-345):

"Quite suddenly, in 1980 and 1981, disaster struck us. The Chancellor had increased interest rates starkly to squeeze out inflation, and as a result the pound had strengthened far beyond our capacity to compete. In three consecutive quarters our annual rate of profit fell from £600 million a year to an annual rate of loss of £200 million a year. We were losing on virtually all our exports - and only the highest value-added products could jump the currency hurdle".

As the purpose of this study is to provide evidence of an inability to effectively manage exchange risk, the primary symptom of such an inability is a collapse in profits. Table 8.2 shows that profits expressed in current cost accounting terms (which is approximately equivalent to real terms) showed a much greater deterioration than in the summary in Table 8.1.

TABLE 8.2
ICI'S PROFIT BEFORE TAX, ON A CURRENT COST ACCOUNTING BASIS, expressed in 1983 £s, £M 1979-82

1979	1980	1981	1982
549	93	95	103

Source: ICI annual report, 1983.

Whilst no loss was declared for any year, the humiliation for ICI was that in 1980, ICI declared losses in two quarters and reluctantly cut its dividend for the first time since the 1930s. The 1980 annual report described trading conditions as the most difficult since the Second World War. The crisis was that profits did not collapse just in 1980, but were depressed for three years.

3. VULNERABILITY OF ICI TO OVERVALUATION IN THE POUND IN TERMS OF INFLEXIBILITY IN PRODUCT MARKET STRATEGY, 1979-82

Having defined the visible impact of sterling misalignment on ICI as a profits crisis, the purpose of this section is to provide evidence that ICI's profits crisis and its vulnerability arose because ICI lacked sufficient flexibility in its product-market strategy to adapt quickly to the real rise in sterling in 1979/80. Selected indicators of flexibility which rendered ICI vulnerable to currency overvaluation are compared with those of ICI's German rivals in Table 8.3:

TABLE 8.3
INDICATORS OF VULNERABILITY TO CURRENCY OVERVALUATION, ICI & GERMAN COMPETITORS, AT THE ONSET OF STERLING MISALIGNMENT 1979

	% of world sales accounted for by domestic production	% of trading profit deriving from domestic production	% of sales accounted for by industrial chemicals	% of total sales abroad	% of sales in N. America 1980
ICI	63	74	52	58	16 ²
HOECHST	67	52	23	67	10
BASF	75	58	19	70	11
BAYER	n.a.	43	38	52	15

In 1979, ICI's proportion of world sales accounted for by U.K. production was high but still lower than that of its German rivals³. Yet the higher German percentages were not a problem as the DM was not overvalued. What does indicate ICI's vulnerability to sterling misalignment is its extraordinarily high percentage of trading profit deriving from domestic production.

Further, in 1979 ICI's proportion of sales accounted for by industrial chemicals was not only very high but much higher than any of ICI's German rivals⁴. This is an important

²This figure includes S. America.

³Data for other years is given in Table 8.10.

⁴Data for other years is given in Table 8.8.

indicator of vulnerability since industrial chemicals generally constitute non-differentiated, price-sensitive and low-margin production⁵.

The misalignment syndrome with its U.K. recession eroded ICI's U.K. customer base yet ICI was dependent on the U.K. for a high proportion of group sales (Tables 8.3, 8.11). Harvey-Jones (1981:344) confirms that by the end of 1981 one-third of all ICI's customers in the U.K. had gone out of business.

In the face of the above constraints, ICI's immediate reaction to the rise in sterling was to attempt to maintain market share. This necessitated exporting at a loss, which magnified the profits crisis. ICI's exports from the U.K. in 1980 suffered total losses of £90M. Sales in many business classes were being maintained principally to hold key market positions (ICI's 1980 annual report, pages 2 and 8).

Fifthly, the dollar misalignment which started in 1980 might be expected to ease the problem of sterling misalignment for ICI's U.S. sales. However, ICI's main export market and source of profit was Europe (Tables 8.24, 8.25). Exports to N.America were relatively insignificant compared to ICI's European sales. Yet Table 8.3 shows that the percentage of ICI's sales to the Americas was higher than that of all its German rivals. Data for other years is given in Table 8.16. Thus ICI's greatest source of profit, Europe, is also where it faced its German competitors head-on. The merits and demerits of ICI's U.S. market position are examined in Section 6.4.

The relative vulnerability of ICI at the onset of sterling misalignment in 1979 was reduced by two principal factors. Firstly, direct competition between ICI and its German rivals was reduced by differing product ranges via patents and other means of differentiation. Such differentiation however, tends not to be possible in industrial chemicals which are homogenous and price-sensitive. It is particularly in industrial

⁵ICI classifies bulk, or commodity chemicals, as industrial chemicals. Examples include petrochemicals and plastics. These industrial chemicals are distinguished from relatively high-margin speciality chemicals. Industrial chemicals tend to make losses in recession but act as cash cows in periods of growth. Speciality chemicals are assumed to be less recession prone.

chemicals that ICI was most vulnerable. Secondly, an unwritten cartel had existed between chemical companies in the post-war period not to compete on each other's territory. Thus the oligopolistic market structure favoured ICI in its domestic and Commonwealth markets.

Despite the above positive factors for ICI, ICI's head of planning has concluded that "the particular circumstances of the U.K. meant that it had to improve its cost base more rapidly than its competitors" (Pink 1988:19). One factor in this is that in the late 1970s, ICI had invested heavily for further growth, particularly in plastics and petrochemicals. This growth did not materialize and capacity surpluses worldwide caused intense competitive pressure and a resultant squeeze on profit margins (Pink 1988:18). The speed and scale of sterling misalignment exacerbated the existing vulnerability of ICI and turned it into a profits crisis. The question arises as to why ICI's hedging activities could not prevent the profits crisis. It is necessary to investigate what actions were taken by ICI to manage the rise in sterling firstly, via its treasury and secondly, via internal operational and strategic hedging.

4. THE LIMITED ROLE OF ICI'S TREASURY IN HEDGING STERLING MISALIGNMENT 1979-1983⁶

4.1 Hypotheses.

Survey evidence (Chapter 5) is that the corporate treasury is not able to manage non-contractual currency exposures beyond the short-term. It is hypothesized that this is also the case of ICI's treasury. A second hypothesis is that the example of ICI, with manufacturing operations in 40 countries, supports the hypothesis that internal financial hedging would be more important than external hedging (Holland 1992), given the motivation of internalization (Coase 1937, Casson 1982:26) to reduce transactions costs ? A third hypothesis is that internal financial hedging could not make up for the inadequacies of external hedging ?

4.2 ICI's hedging problem.

The extent of ICI's currency mismatch can be seen in that in 1979, 63% of sales derived from U.K. production and thus had principally a sterling cost base. U.K. sales - which could be denominated in sterling - amounted to 42% of total sales. This left a mismatch of 21%. Such matching to create a natural hedge is not under the control of the treasury, whose role is merely to manage it. The actions of ICI's treasury to manage its currency risk are already described in Clements (1989:158-159).

The basic problem at the start of 1979 was one of hedging exports valued at over £1100 M for four years forward (Table 8.4), which with hindsight was the length of the sterling misalignment.

⁶The assistance of interviews in July and August 1993 with the following is acknowledged:
T. Harrison - Head of Strategic Planning at ICI and formerly Chief Financial Officer and Financial Controller, ICI 1979-1994, 19.7.93, 7.6.94;
Alan Clements - Treasurer, ICI, 1976-1979, Finance Director 1979-1990, 5.7.94.

TABLE 8.4
ICI'S EXPORTS FROM THE U.K. 1979-82, £M fob.

EXPORT MARKET	1979	1980	1981	1982
EEC	501	528	565	626
OTHER W.EUROPE	116	121	127	147
SUB-TOTAL	617	649	692	773
N.AMERICA	75	75	100	134
OTHER	416	431	661	645
TOTAL	1108	1173	1453	1552

Source:ICI annual reports.

An additional problem was to hedge interest rate risk on loans and short-term borrowings (Table 8.5). This became problematic both because of the doubling of short term borrowings at floating interest rates and because of the more than doubling of nominal interest rates. As inflation declined over the period, real interest rates rose more than nominal interest rates.

TABLE 8.5
ICI'S BORROWING, 1979-83 £M

	1979	1980	1981	1982
LOANS	1145	1307	1497	1536
of which SHORT-TERM BORROWINGS	246	294	589	531

Source:ICI annual reports.

ICI's internal financial hedging is first critically examined, followed by its external hedging.

4.3 Internal financial hedging by ICI's treasury 1979-83.

Firstly, sterling invoicing was not acceptable and ICI had no option but to invoice in the currency of the customer. This maximized the hedging problem. As local ICI subsidiaries would be buying and selling in their own local currencies, it had the effect of transferring responsibility for currency risk management to the centre, i.e. the parts of ICI that were exporting to them. This facilitated the centralization of currency risk management.

Secondly, even though centralization began in 1970 with the establishment of ICI Finance⁷ and even though it reached its highest form of re-invoicing (Hodgson 1980), all it could do is eliminate the duplication and inconsistency that would result if the hedging decisions had been left to be decided by the business divisions before currency netting. Centralization was geared to short-term reactive management, providing information such as which net currency balances were exposed. This permitted these balances to be monitored daily for hedging purposes, but this was only of use to the extent that they could be effectively hedged.

Thirdly, the hedging time horizon did not go beyond 12 months. All ICI's businesses were required to prepare for the treasury a forecast of their expectations for currency receipts and payments for at least the next 12 months. This gave the central treasury a currency by currency picture of the company's exposure. However, all this did was make it possible to decide between various forms of external hedging and/or asset and liability management. Acting 12 months in advance was not enough to hedge away 4 years of overvaluation.

Fourthly, regarding asset and liability management (see Appendix 3), the dramatic rise in ICI's short-term borrowings indicated in Table 8.5 was only partly hedged by borrowing in "hard" currencies such as the DM and Swiss Franc. The basis of the hedge was speculation that PPP would not hold, i.e. that the benefit of lower interest rates on "hard" currencies would not be cancelled out by repayment in depreciated sterling. This

⁷The primary task of ICI Finance became to integrate the short-run management of currency exposures stemming from exports and imports, interest rates, dividends and the forecast of liquidity and what currencies liquid assets would be denominated in.

gamble paid off because sterling remained firm to 1983.

However, this technique would only have been fully effective if the real sterling appreciation in 1979/80 had been accurately forecast and fully hedged and if ICI had perfect foresight of its future cash flows 4 years in advance. Neither was the case (see below)⁸. The same is true of leading the payment of dividends, fees and other payments from ICI's foreign subsidiaries to the central treasury to be held in appreciating sterling, and lagging payments overseas in the expectation that a more favourable exchange rate could be obtained as sterling appreciated.

4.3.1 Conclusion.

Internal financial hedging was inadequate to immunize ICI from the effects of misalignment, though currency borrowing was partially effective.

4.4 How ICI externally hedged its sterling risk.

The hypothesis here is that the hedging instruments available for ICI to purchase could not make up for the inadequacy of internal financial hedging. This is owing to five principal constraints:

Firstly, the treasury was not allowed to hedge unknown positions i.e. anything beyond its forecast 12 months cash flow, and this at the start of 4 years' of overvaluation. Up to 1979, U.K. exchange control prohibited U.K. companies from opening external hedges for anything other than transaction exposure, which in ICI's case was 3 months forward. However, after the devaluation of the pound in 1967, ICI obtained permission from the Bank of England to hedge 12 months forward instead of only 3 months⁹.

⁸Once the decision had been taken to denominate a substantial proportion of borrowings in foreign currencies, the problem was knowing when to get out and convert the loans back into sterling. Again a risk would be incurred because of the lack of perfect foresight.

⁹ This permission was however, only granted provided systems were in place to ensure that as much currency netting was conducted as possible in ICI. This condition was imposed to prevent ICI engaging in speculative hedges against sterling.

Secondly, a major problem is the fallibility of forecasts. In 1979 it was not forecast that sterling would be overvalued for four years. As sterling rose, the treasury took the view that 50% of the 12-month cash forecast should be hedged at all times. This proportion was gradually increased - as the overvaluation became evident - to 60 % and above but again for only 12 months ahead. Even if the 12 month cash flow had been 100% hedged, the hedge would have to be renewed at less favourable rates, particularly if 3 month contracts instead of 12 month contracts were used.

Thirdly, forecasting cash flows 12 months forward was highly problematic. This was because future foreign currency cash flows depended on forecasts of future exchange rates. An additional dynamic arose in that the treasury took a view on sterling for the first 3 months and then a different view for later months. When the exchange rate outlook became uncertain, it became impossible to obtain reasonably accurate cash flow forecasts, particularly since the liquidity management function involved a significant component of foreign currency cash flows. As a practical solution, what ICI did was to forecast cash flows on a rolling 12 month basis, but every month the figures were changed as exchange rate forecasts changed¹⁰.

Fourthly, forecast cash flows were only partially hedged. The treasury policy was to hedge 50% and to increase this portion when warranted. Only if there had been a 100%

¹⁰The decision-making process on internal exchange rate forecasts was similarly problematic. An economist from the planning department was involved in discussions on sterling forecasts, but ICI's treasury was not obliged to base its planning on these forecasts, nor were the other business divisions of ICI. Coordination had to wait until 1983 when centralized budget planning was established. Only then were the same exchange rate forecasts used throughout the group.

Up to 1983, the significance of internal real exchange rate forecasts in ICI lay in long-term planning and project work for new investments performed by the planning department. Freeman (ICI's chief economist, interviewed 8.6.1992) admits that the real exchange rate forecasts are often not accurate, but are the best guide that the company has for planning purposes.

ICI's treasury also invited two banks for quarterly meetings lasting several hours to provide additional input in currency forecasts. Detailed scenarios were discussed for the ensuing 6 months, but beyond 6 months, the discussions were only in general terms. This underlines the relatively short-term planning horizon of the treasury compared to the corporate planning department.

hedging policy at the start of 1979 would the next 12 months' cash flow have been protected. It was too late to institute 100% cover once the U.K. government announced its policy of monetary tightening in 1979, since the rise in U.K. interest rates and in sterling were already reflected in market expectations.

Fifthly, what the treasury role in interest rate risk management cannot resolve is why ICI's borrowings more than doubled within two years in the first place. This underlines how the treasury's role is essentially reactive. The rise in borrowings resulted from the downturn in economic activity. This macroeconomic risk could not be hedged away by ICI's treasury. The instruments ICI used to manage the interest rate risk on its medium and long-term borrowings were mainly US\$ interest rate swaps. The only way interest rate swaps could have hedged ICI's borrowing at the low rates ruling before the dramatic rise in interest rates in 1979 is if the treasury knew all its borrowing requirements for the next four years in advance and hedged them accordingly.

Sixthly, during the 1979-83 overvaluation, the swap market, particularly in currency swaps, was relatively undeveloped. ICI only used a few token currency swaps in order to convert the low dollar interest rates into rates on other currencies.

Seventhly, as ICI's treasury was not responsible for the cost of hedging, it had no incentive to ensure that it hedged away the impact of sterling overvaluation. ICI's treasury gave the product divisions sterling for its foreign currency receipts at the end of each quarter, and the sterling rate that was given was based on a forward rate given to each division at the start of each month. The cost of hedging was not borne by the treasury. On receipt of foreign currency and conversion back to sterling, the treasury received more sterling than that originally given to the division, or it received less. Appraisal of the cost of hedging did not go beyond this. The cost of hedging was thus borne by the product divisions. The treasury only acted as a service facility offering forward rates. If the product divisions could only renew their hedges at less favourable rates then these less favourable rates hit their profitability, not the treasury's. It also created disparate results within ICI, since the profit margins of some product divisions

such as pharmaceuticals could withstand the rise in sterling whereas other product divisions could not.

4.5 Conclusions.

The bulk of the hedging that was carried out was not via the use of forward contracts but instead balance sheet hedging, i.e. foreign currency borrowing to finance overseas assets. Internal financial hedging such as adjusting the currency denomination of the balance sheet structure was more effective for ICI over the 1979-83 period as a whole than instruments of external hedging.

The hypothesis is confirmed that ICI treasury's focus was on managing its transaction exposure. The experience of ICI confirms that this is inadequate for managing prolonged currency overvaluation. Economic exposure was also not managed externally, since under ICI's policy, non-contractual (economic) exposures were only hedged up to 12 months out. Beyond that, the treasury had nothing to do with economic exposure management.

5. DIFFICULTIES IN CREATING A NATURAL HEDGE 1979-82.

5.1 Hypotheses.

First is that internal operational and strategic hedging could not make up for the inability of the treasury to manage overvaluation via external and internal financial hedging.

Second is that ICI could not change its strategy quickly enough such that the effects could have insulated ICI from the 1979-83 misalignment.

5.2 Strategic problem.

ICI's objectives, as outlined by the General Manager of Planning at the time (Pink 1988:19) were to urgently increase profitability and to achieve a consistent improvement in performance in view of the very wide disparity in performance between product categories.

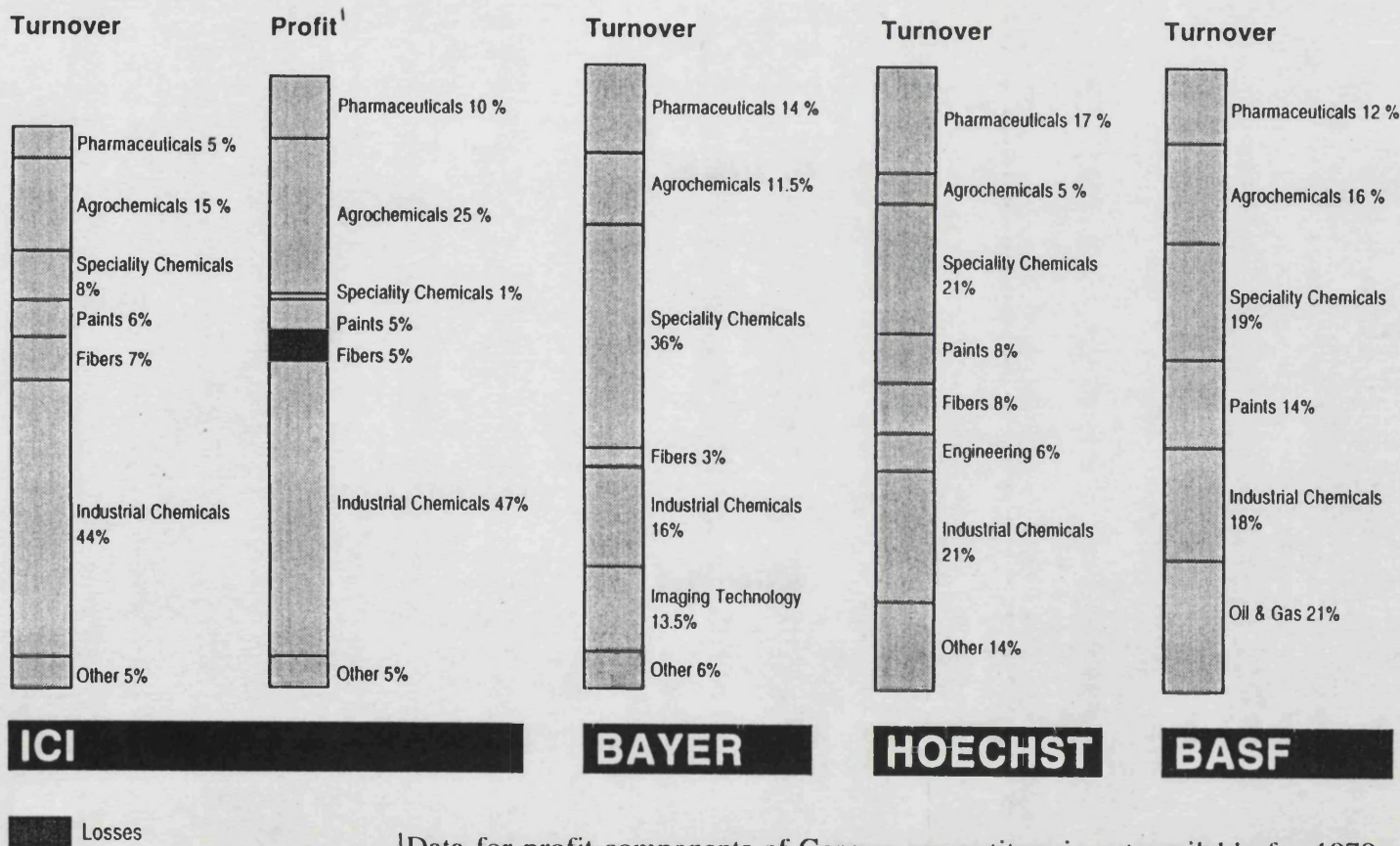
The environment in which these objectives were set was adverse not only because of the overvaluation of sterling. Recession, overcapacity in industrial chemicals and greater competitive pressures were faced by all the major European chemical companies. ICI additionally had to face overvaluation of the pound, the collapse of its U.K. customer base and a major involvement in sectors with the most overcapacity. ICI's response, given its announced objectives, was to effect changes in its organization and in its product-market strategy.

Table 8.6 summarizes the difficulties faced by ICI in creating a natural hedge.

CHART 8.1
COMPARISON OF TURNOVER BY PRODUCT, ICI & GERMAN COMPETITORS
1979

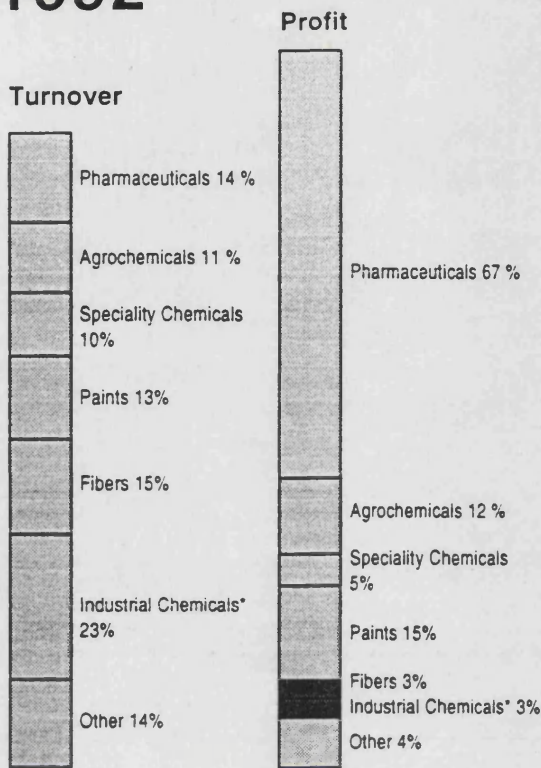
1979

Chapter 8

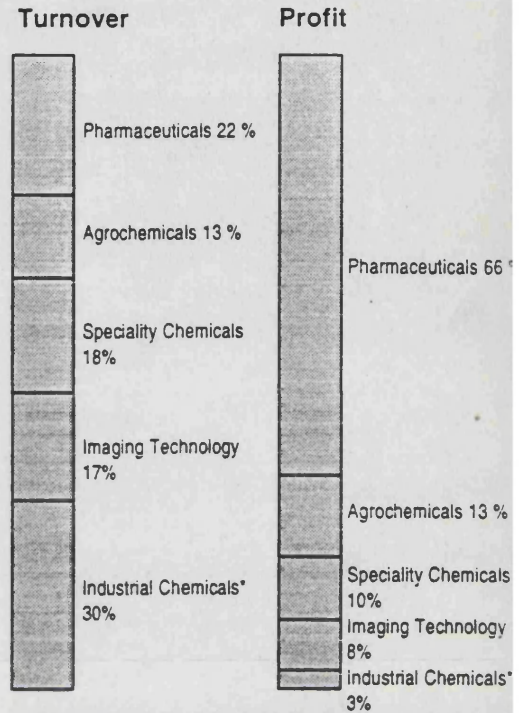


¹Data for profit components of German competitors is not available for 1979

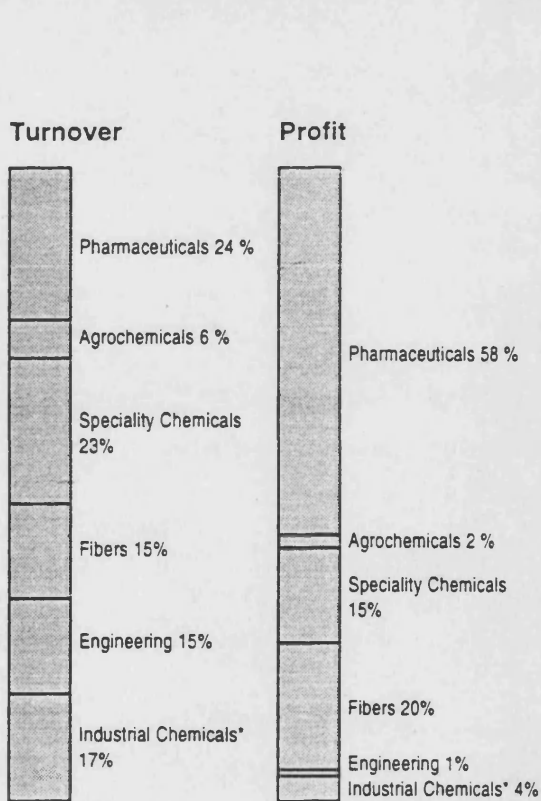
1992



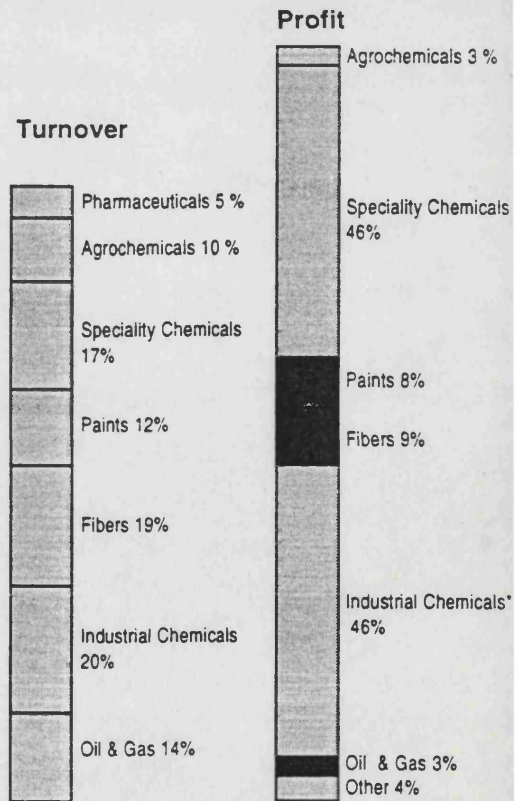
ICI



BAYER



HOECHST



BASF

Losses

TABLE 8.6

ICI'S RELATIVE INFLEXIBILITY IN INTERNAL OPERATIONAL AND STRATEGIC HEDGING COMPARED TO ITS GERMAN RIVALS AT THE ONSET OF STERLING MISALIGNMENT IN 1979

OPTIONS IN MARKETING INITIATIVES	OPTIONS IN PRODUCTION INITIATIVES
<p><u>Market selection & segmentation</u> ICI's inflexibility stemmed from its high dependence on the U.K. market and on industrial chemicals.</p> <p><u>German rivals.</u> All three German competitors were strong in continental Europe as their main market. Market segmentation differed in all three. Only BASF bore resemblance to ICI in having a high percentage of sales in industrial chemicals. Hoechst and Bayer were more diversified than ICI.</p> <p><u>Product strategy</u> ICI was inflexible owing to its high proportion of total sales in industrial chemicals. <u>German rivals'</u> product diversification into less price-sensitive branded goods increased their flexibility to manage currency risk.</p> <p><u>Pricing strategy</u> ICI could not raise its export prices to pass on the rise in sterling. Its strategy was to maintain market share. It was forced to abandon this as losses mounted. <u>German rivals</u> benefited from the norm of DM pricing for chemicals in Europe plus the fact that the DM was not overvalued.</p>	<p><u>INPUT SOURCING</u> ICI had little flexibility to benefit from the rise in sterling by importing inputs at lower sterling prices since it had itself an integrated production process and long-term agreements with U.K. suppliers. ICI also had little scope to shift production in the short-term among its own plants globally owing to specialization, eg. Wilton, and the non-existence of flexibility in ICI's overseas plants. <u>German rivals.</u> Only inputs sourced from the U.K. were subject to currency overvaluation.</p> <p><u>PLANT LOCATION</u> ICI had little flexibility in the short-run to change plant location to combat sterling overvaluation. Only after the misalignment did ICI change its strategy to invest in higher growth markets such as the U.S. and Pacific rim. <u>German rivals.</u> The high percentage of sales from domestic production of the German rivals was an advantage since it facilitated both greater integration in the production process and production close to their main markets in the E.C.</p> <p><u>RAISING PRODUCTIVITY</u> ICI. Cutting costs and raising productivity was an important objective in an attempt to offset the rise in sterling. U.K. manpower was cut by 30% in 5 years. New plant of the 1970s became replacements for old capacity. As German rivals had not overexpanded in industrial & petrochemicals to the same extent as ICI, they did not have to write off investments as ICI did. They could thus use their surpluses to plan ahead for more productive investments.</p>

5.3 How ICI strategically hedged its sterling exchange risk.

Because the unforecast rise in the real sterling exchange rate created a sudden profits crisis and difficulties in short-term planning and resource allocation between divisions,

a major reassessment of short-term profit objectives was carried out.

Two major changes were instigated, but only after Harvey-Jones became chairman in 1982. One was organizational (see section 10), the other in product-market strategy.

To meet the objectives set out in section 5.2, changes in strategy can be divided into short-term and long-term.

In the short-term, ICI's reaction to sterling overvaluation was twofold. One was to defend its export position for as long as possible by not raising local currency prices in line with the rise in sterling. The basis of this strategy was that once markets were lost, they would be difficult to win back and that recovery would consequently be slow and painful (Harvey Jones 1991:343-345). A second short-term strategy was cost cutting and tight control over working capital" (Chairman's Foreword, ICI 1980 Annual Report).

This initial reaction was followed by a change in strategy. In the short-term, "the particular circumstances of the U.K. meant that it had to improve its cost base more rapidly than its competitors" (Pink 1988:19). Capacity in loss-making businesses (Table 8.7) was drastically cut back.

TABLE 8.7
INDUSTRIAL CHEMICALS - LOSS-MAKING BUSINESS CLASSES OF ICI, £M

	1979	1980	1981	1982
FIBRES	38	86	36	25
ORGANIC CHEMICALS	(1)	35	30	18
PETROCHEMICALS	(94)	44	}54	}139
PLASTICS	(51)	35		
TOTAL LOSS	38	200	120	182

Source: annual reports
Figures in brackets are profits

To meet the objectives of improving competitiveness in terms of both costs and value-added, the long-term strategy was to change group shape in respect of both product mix and geographical spread.

5.4 Changes in product-market strategy.

Changing the product mix involved reducing the proportion of ICI's turnover derived from low value-added industrial chemicals and increasing that from differentiated speciality chemicals. Table 8.8 shows that in 1982, ICI was still more dependent on industrial chemicals than any of its German competitors, even after a massive reduction in ICI's proportion since 1979. This illustrates how difficult it was to execute a strategy to reduce ICI's vulnerability to currency overvaluation, given the cyclical and currency risk of industrial chemicals.

TABLE 8.8
COMPARATIVE DEPENDENCE OF ICI ON INDUSTRIAL CHEMICALS AS % OF TOTAL SALES, 1979-82

	1979	1980	1981	1982
ICI	52	46	42	41
HOECHST	23	22	22	24
BASF*	38	35	35	34
BAYER	19	18	17	16

Source: annual reports

* excluding energy

Similarly, Table 8.9 shows that between 1970 and 1980, ICI dramatically increased the proportion of its sales from speciality chemicals. However, this proportion was still lower than that of any of its German competitors.

TABLE 8.9
SPECIALITY CHEMICALS AS A % OF TOTAL SALES, ICI AND GERMAN COMPETITORS, 1970 & 1980

	1970	1980
ICI	17	27
HOECHST	30	40
BAYER	32	42
BASF	20	30

Source: Pettigrew 1985:61

(This data is Pettigrew's own definition of speciality chemicals and may not correspond with the product categories in Charts 8.1 & 8.2).

To reduce vulnerability to sterling, ICI's strategy was to reduce its proportion of world sales from U.K. production. Such a strategy is essentially long-term and requires heavy costs in the short-term. Table 8.10 indicates that despite the drastic efforts, little was achieved in the four years of overvaluation to 1982. This could only be expected, indicating the essentially long-term nature of adjustment. The results are nevertheless evident by the second period of overvaluation, from 1990-92. A similar trend is evident in the source of profits, though this trend is exaggerated by the fact that 1992 was a recession year.

TABLE 8.10
ICI'S DRIVE TO REDUCE ITS PROPORTION OF WORLD SALES FROM U.K. PRODUCTION, 1979 - 1992

	1979	1982	1990	1992
U.K. sales as a % of total sales	42	38	23	18
U.K. exports as a % of total sales	21	21	24	27
Total	63	59	47	45
% of Trading profit deriving from U.K. production	74	55	30	17

Source: annual reports

Table 8.11 shows that whilst ICI's German competitors all increased their proportion of sales abroad, none of them did so to the extent of ICI. ICI's strategy of reducing

dependence on the U.K. was costly, since its strategy was not to export from the U.K. but to produce abroad.

TABLE 8.11
% OF TOTAL SALES ABROAD - ICI AND GERMAN COMPETITORS, 1979 - 1992

	1979	1982	1990	1992
ICI	58	61	77	81
HOECHST	67	74	75	75
BAYER	70	77	60*	61*
BASF	52	55	n.a.	64

Source: annual reports

* refers to % of total sales outside Europe. The % of total sales outside Germany is not available.

Table 8.12 indicates how drastic ICI's efforts have been to increase its proportion of sales from foreign production. Whilst its German competitors have all internationalized their production, none has done so to the extent of ICI.

TABLE 8.12
% OF TOTAL SALES FROM FOREIGN PRODUCTION - ICI AND GERMAN COMPETITORS, 1979 - 1992

	1979	1982	1990	1992
ICI	37	41	53	55
HOECHST	33	40	45	50
BAYER	*	*	*	33
BASF	25	25	30	27

Source: annual reports

* % share accounted by foreign subsidiary and affiliated companies: 1979 49%, 1982 57%, 1990 58%. The 1992 figure is not available on a comparative basis.

5.5 Conclusions.

Because the changes in strategy could only bring results in the long-term, they could not immunize ICI from the 1979-83 overvaluation. Strategic hedging could thus not make up in the short-term for the inadequacy of financial hedging, as evidenced in that ICI's

senior management was in a crisis situation with short-term profitability being the main concern (Harvey-Jones 1991:343-345).

6. COMPETITIVE ADVANTAGES OF STERLING OVERVALUATION 1979-82 ACCRUING TO ICI'S GERMAN COMPETITORS.

6.1 Hypotheses.

One part of ICI's planning department is responsible for monitoring ICI's competitive position. This is performed by calculating competitive ratios from the volume of production, investment and marketing costs and overheads of ICI and its competitors. Not all competitive differences can be easily quantified, such as differences in the quality of research and marketing effort. This section accordingly does not attempt any quantification of the competitive effects of sterling overvaluation, since any such estimates would be subject to serious qualification. Instead, the purpose is merely to set out the broad channels whereby German competitors would enjoy an augmented competitive position relative to ICI on account of a rise in the real sterling exchange rate.

A manifestation of ICI's reduced competitiveness is the profits crisis which was caused by the rise in sterling. It is hypothesized firstly, that ICI's profits crisis was not experienced by its German rivals despite recession in the chemical industry.

To underpin the hypothesis on ICI's reduced competitiveness, it is hypothesized secondly, that ICI's German rivals were not forced into a costly restructuring as ICI was during overvaluation.

A third hypothesis is that to the extent that price factors are important, German competitors would derive a competitive boost in the U.K. market and ICI's position would correspondingly be weakened in the German market.

A fourth hypothesis is that sterling overvaluation would weaken ICI's position relative to its German rivals in third markets such as N.America.

Each of the four hypotheses is examined in turn:

6.2 German competitors did not share ICI's profits crisis.

Table 8.13 shows that ICI's net income (defined as profits after tax and extraordinary items) as a percentage of sales was far more volatile than the net income of its German competitors. ICI was in a profits crisis between 1979 and 1980 whereas its three German competitors were not.

TABLE 8.13
NET INCOME AS A % OF SALES, ICI AND GERMAN COMPETITORS 1979-83

	1979	1980	1981	1982	1983
ICI	8.2	-0.3	2.8	1.9	4.6
BASF	2.4	1.3	1.2	0.8	1.5
HOECHST	2.4	1.9	1.2	0.9	2.4
BAYER	1.7	2.5	1.5	0.2	2.0

Source: annual reports

ICI's generally posts a much higher net income/sales ratio than its German rivals. The competitive significance in relation to dividend-payout policy is examined in Appendix 7.

6.3 German competitors were not forced into a costly restructuring.

The fact that ICI's competitors did not face a profits crisis indicates that they were not forced into a major restructuring as ICI was. It is difficult to obtain information on the costs of the restructuring that ICI had to bear since they would be included in the annual capital expenditure figures. A comparison of such figures between ICI and its German competitors would reveal shifts in investment strategy out of certain sectors and into others. However they would not reveal differences in the quality of investment and its prospective profitability. Because of this methodological problem, a simplistic approach of listing the restructuring costs and write-offs declared in ICI's annual reports 1979-83 (Table 9.14) is adopted. These nevertheless do not accurately reflect restructuring costs, which are hidden instead in new capital expenditure.

TABLE 8.14
RESTRUCTURING COSTS, ICI 1979-83

YEAR	AMOUNT £M	DETAIL
1979	16	Loss on sale of stake in potash operation
1980	150	£95M to restructure fibers operations; £26M write-off of part of investment in Carrington Viyella Ltd.; £17M loss on divestment of chlor-alkali business.
1981	6	Rationalization at Carrington Viyella Ltd.
1982	-	
1983	19	Losses on sale of stake in U.S. petrochemicals.

Source: annual reports

The key point to be emphasized is that the £150M write-off in 1980 resulted in a loss in that year. The item is described in the 1980 annual report (Chairman's foreword) as:

"a radical restructuring of our fibres business, including withdrawal from certain commodity products in order to concentrate on those for which the company has substantial advantages in technology and quality...The organic chemicals business is also being reshaped to redirect its marketing thrust as well as to lower its cost base. Our Petrochemicals and Plastics Divisions are being combined..."

Not one of ICI's three German competitors declared a loss in any of the years 1979-83 and all made net additions to their reserves after provisions for restructuring. As 1980 was the worst year for the chemicals industry, ICI's £150M write-off can be compared with its German rivals' position in Table 8.15.

TABLE 8.15
PROVISIONS AND ADDITIONS TO RESERVES IN 1980, ICI's GERMAN COMPETITORS

	% change in earnings before taxes and minority interests	% change in earnings after taxes and minority interests	Provision DM M	Net addition to reserves DM M
BASF	-25.4	-42.0	106	88
HOECHST	-15.7	-14.4	72	197
BAYER	+11.5	+67.8	none	50

Source: annual reports

6.4 Sterling overvaluation weakened ICI's position relative to its German rivals in third markets such as North America.

The above hypothesis cannot be strictly tested because ICI does not split its sales figures between North and South America, excepting 1983. However, this need not preclude a comparison because ICI's sales in South America are small in relation to those in North America. A further difficulty in testing the impact of sterling overvaluation is that data on ICI's exports to N. America and sales deriving from production in N. America are combined.

TABLE 8.16
% OF TOTAL SALES IN NORTH AMERICA - ICI AND GERMAN COMPETITORS, 1979-83, 1990 & 1992

	1979	1980	1981	1982	1983	1990	1992
ICI*	16	13	19	21	10	28	31
HOECHST	10	11	14	13	14	22	21
BASF	11	11	13	13	15	20	18
BAYER	15	15	18	20	21	19	21

*ICI data includes South America, except 1983.

Source: annual reports.

ICI's percentage of total sales in the Americas increased significantly from 1979-82, when ICI's total sales over the period were flat in real terms, suggesting that sterling overvaluation did not have an adverse impact. However, the low figure of only 10% for N.America in 1983 is notable. This was by far the lowest of all four companies and less than half the percentage of Bayer. This is remarkable considering that ICI had already decided in the early 1980s (Harvey Jones 1989:343-345, Pink 1988:19) that its strategic response to misalignment in the pound was diversification out of the U.K. in terms of both production and dependence on the U.K. market. N. America was a major target. Three years was clearly not enough to generate resilience to sterling misalignment.

Since 1979, it can be seen that all the four competitors have dramatically increased their proportion of total sales deriving from North America. The profitability of the

N.American market is as important as the percentage of group sales (Table 8.17).

TABLE 8.17
PROFIT FROM SALES IN N. AMERICA AS % OF TOTAL GROUP PROFITS, 1979-83, 1990 & 1992

	1979	1980	1981	1982	1983	1990	1992
ICI	6	15	17	17	17	37	2
HOECHST	n.a.	(0.06)	4.7	0.66	5	23	27
BASF	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BAYER	n.a.	n.a.	n.a.	n.a.	n.a.	17	22

Source: annual reports

The comparison is positive for ICI, except for 1992, when environmental charges almost erased ICI's N. American profits. Hoechst's declaration of a loss in 1980 is attributed (Hoechst 1980 Annual Report:49) to stagnant business activity, high interest rates on borrowed capital, the start-up costs on new plant and considerable expenses incurred in priming the market for high density polyethylene by selling imports from Germany. These factors indicate that Hoechst's strategy was one of future expansion in the N.American market.

It can be concluded that during the 1979-83 sterling overvaluation, there is no evidence of any marked decline in ICI's competitive position in N.America. ICI's low percentage of total sales in N.America is partly accounted for by slowness in diversifying into N.America.

However, before conclusions can be drawn on the impact of sterling overvaluation, an appraisal of the factors affecting competitive advantage in the N.American market is necessary. These factors are much more complicated than a straight comparison that sterling was overvalued and the DM was not. The following focuses on four possible factors:

TABLE 8.18

FACTORS INFLUENCING THE EXTENT TO WHICH STERLING MISALIGNMENT CAN ALTER THE RELATIVE COMPETITIVE POSITION OF ICI AND ITS GERMAN RIVALS IN THE U.S. MARKET.

FACTOR	IMPACT
<p>The currency denomination of the competitors' input pricing and the currency denomination of their sales.</p>	<p>N. American companies need to be included in the comparison and so whether the US\$ is under- or overvalued is a significant factor.</p> <p>US\$ pricing for inputs and also the course of the oil price need to be included (see next page)</p>
<p>The extent to which competitors engage in FDI in N.America rather than export to N.America from the U.K. or Germany.</p>	<p>In terms of exporting from the U.K. to the U.S., sterling overvaluation placed ICI at a cost disadvantage relative to its German and U.S. competitors. This was significant to ICI because of recession and reduced margins on chemical prices.</p> <p>FDI into the U.S. could reduce the impact of sterling overvaluation, but FDI is not a sufficient condition since in 1979, ICI already produced most of its N.American sales locally (Table 8.19). Even with U.S. FDI, if the US\$ is overvalued, U.S. sales could be threatened by exports from Germany.</p>
<p>The extent to which ICI's N. American sales are diversified out of exchange-rate sensitive products.</p>	<p>This could limit the impact of sterling misalignment.</p>
<p>Specific targeting of the U.S. market.</p>	<p>ICI deliberately changed its strategy to diversify out of the U.K. because of exchange risk (see Table 8.10). The foremost market it targeted in this new strategy was N.America (Table 8.16). By 1992, ICI's percentage of total sales in N.America was significantly higher than of its German competitors.</p>

continued overleaf

TABLE 8.18 (cont.)

FACTOR	IMPACT
<p>Volatility in real US\$ and in oil prices</p>	<p>It is estimated that the European chemical industry pays for around three quarters of its oil-based inputs in dollars. The currency denomination of chemical sales is generally in DM in Europe but in the U.S. it is in US\$.</p> <p>In 1979/80, the real sterling exchange rate rose sharply against the US\$, but not the real DM/US\$ exchange rate (Charts 1.1 & 1.6). ICI's US\$-denominated costs would be reduced in sterling terms, but the Second Oil Shock in 1979 raised the price of oil-based products.</p> <p>From 1981-85, the <u>US\$ overvaluation</u> plus high US\$ inflation in the early part of the period placed - ceteris paribus - both ICI and German competitors at an advantage relative to U.S. chemical producers whose costs were 100% in dollars. German producers would be at an even greater advantage than ICI owing to sterling misalignment up to 1983. However, this currency advantage could not be fully exploited because of depressed chemical prices in the early part of the period.</p> <p>From 1983, the <u>collapse in the oil price</u> was a gain to both U.S. and European producers. The gain to U.S. producers relative to European producers was reduced by the continuing dollar overvaluation.</p> <p>From 1986-92, the combination of a <u>weakening dollar and a weak oil price</u> (which was denominated in US\$) reduced the oil-based input costs to the European producers when translated back into their domestic currency. This might at first be supposed to place the Europeans at a competitive advantage in the U.S. market. Instead, the U.S. producers gained by even more. The currency swing turned the tables in favour of U.S. producers.</p> <p>This is because 100% of the U.S. producers' oil-based input costs are in depreciating dollars compared to only three-quarters of the costs of the European competitors. Thus, given dollar pricing of chemicals in the U.S. market, the profit gain from lower US\$ costs would tend to be greater for U.S. producers. U.S. exports would also become more profitable in the European market. This is because of DM pricing in the European market. It is also a realistic assumption, depending on competitive conditions, that DM prices would not be cut by European producers to reflect lower US\$ input costs, since European producers have an incentive to take a higher profit margin.</p>

The above complexity of the impact of currency swings on the relative competitiveness of exporters to, and producers in, the U.S. market indicates the difficulties in attempting to use treasury strategies to hedge the swings. It also indicates the even greater difficulties in deciding strategies of switching production across countries according to real currency swings. It is accordingly worthwhile to investigate what strategies ICI and its German competitors have adopted.

One strategic response which reduces the impact of dollar swings is FDI. It is not surprising that ICI and the three German competitors have all engaged in massive FDI in N.America¹¹. From Table 8.19 it can be seen that ICI's N.American sales are partially hedged against sterling misalignment, since the bulk of sales derived from local production.

TABLE 8.19
% OF N. AMERICAN SALES DERIVING FROM LOCAL PRODUCTION, 1979-83, 1990 & 1992

	1979	1980	1981	1982	1983	1990	1992
ICI	83	83	84	85	85	n.a	n.a.
HOECHST	80	80	90	80	75	114	n.a.
BASF	57	55	46	43	n.a.	n.a	90 x
BAYER	90	88	90	112	111	99	100

Source: annual reports x :Holm-Hansen, BASF

ICI: data is calculated as sales in Americas less exports from the U.K. to the Americas.

Bayer: data relates to consolidated sales total of Bayer's U.S. subsidiaries, which may have production facilities outside the U.S.

Complications in assessing the impact of real currency swings can be seen in the above data for Hoechst and Bayer. In the early 1980s, both Hoechst and BASF increased their exports from Germany to the U.S. so that the percentages of local U.S. production declined. By contrast, Bayer became a net exporter from the U.S. over these years, despite the overvalued US\$. This can be linked to the fact that Bayer's U.S. subsidiaries were directed from the U.S. and not from Germany.

¹¹ICI management in the U.S. was assigned "responsibility for leading the development of ICI's worldwide business in speciality chemicals" (ICI Annual Report 1983:15).

6.5 Overvaluation in the pound 1979-83 benefited German exports to the U.K. and disadvantaged ICI's exports from the U.K.

For ICI, a test of the hypothesis would be an investigation into how ICI's U.K. exports to Germany fared during the sterling overvaluation.

ICI is unwilling to provide data on its sales in Germany. Its annual reports use the category "Continental Europe". This might be used as a proxy for a DM-zone given that most EU member states were participants within the narrow bands of the ERM from 1979-92/93. The difficulty is that ICI's sales data also include sales from production in Continental Europe. What is required are data for U.K. exports to Germany. It is not a drawback that this is unavailable, since the hypothesis that ICI's exports were affected by sterling overvaluation is already confirmed in numerous sources (for example, ICI's 1980 annual report & Harvey-Jones 1991:343-345).

If sterling overvaluation was so inimical to production in the U.K. and led to ICI's strategy of FDI, it would be expected that the corresponding strategy of a German producer in the U.K. would also be to cut U.K. capacity and to export more to the U.K. from Germany, allowing for time lags and the capability to export to the U.K. from Germany. This hypothesis is examined for Hoechst, since during the 1979-83 sterling overvaluation, only Hoechst produced in the U.K. (section 7).

6.6 Conclusions.

Sterling overvaluation massively weakened ICI's competitive position in the years 1979-83. ICI's business in N.America was largely protected, on account of FDI.

7. HOECHST.

The hypothesis investigated here is whether the sharp reduction in Hoechst's U.K. production as a percentage of total U.K. sales (Table 8.20) was a strategic response to the 1979-83 sterling overvaluation in the form of output cutbacks and an incentive to service the U.K. market directly from German production. Hoechst could thereby exploit both the high real sterling exchange rate and economies of scale from increased use of its German plant.

TABLE 8.20
HOECHST'S PRODUCTION IN THE U.K. AS A % OF SALES IN THE U.K. 1980-92

1980	46
1981	43
1982	40
1983	38

1990	25
1991	29
1992	28

Source: Hoechst AG, Frankfurt

In 1979, Hoechst's U.K. business consisted of the import and manufacture of chemicals (Table 8.21) and the manufacture of paints within a separate subsidiary, Berger, Jensen & Nicholson Ltd. The paints business was bigger than the chemicals business in terms of sales (data are given in Table 8.22). An additional feature is that only a small proportion of Hoechst's U.K. production was exported.

Hoechst's strategy to deal with sterling overvaluation also underlines the limited role of Hoechst's treasury in managing currency overvaluation.

7.1 Limited role of the treasury in hedging Hoechst's U.K. exports.

Firstly, external hedging was not the responsibility of Hoechst's U.K. treasury. Up until the beginning of 1992, all Hoechst's U.K. exports were invoiced in sterling (except fibers). All foreign exchange risk was centralized in the German head office. Hoechst's exports from the U.K. were netted off for hedging purposes with its exports to the U.K. As exports to the U.K. were much larger than exports from the U.K., Hoechst's exports from the U.K. were not hedged externally during the period of sterling overvaluation. In terms of the group as a whole, Hoechst's exposure to sterling is one arising from the risk of DM overvaluation, not sterling overvaluation. An additional limitation to the role of the treasury can be seen in that the central treasury in Frankfurt head office does not hedge externally non-contractual cash flows, i.e. economic exposure. The treasury's ability to protect Berger was further limited in that its forecasting horizon for hedging cash flows is only 12 months¹², the same as ICI.

7.2 Hoechst's internal hedging strategy for U.K. output.

Protection against sterling currency risk was afforded in that industrial chemicals, which are highly subject to economies of scale, were exported from Germany. Hoechst could opportunistically exploit sterling overvaluation by raising sterling prices in line

TABLE 8.21
HOECHST'S SALES IN THE U.K. £M, 1979-83, CHEMICALS ONLY AND EXCLUDING BERGER

	SALES	PROFITS
1979	157.1	n.a.
1980	142.8	- 0.356
1981	162.4	0.6
1982	188.5	2.7
1983	207.4	3.6

Source: Hoechst U.K. treasury and annual reports.

with U.K. inflation. Hoechst recognized that cutting prices in a depressed market would not raise sales. Hoechst accordingly benefited from a higher profit margin on its German

¹²Dr. Bruhl, Chairman of the Currency Committee, Hoechst Group, Frankfurt, interviewed 11.4.1991.

exports to the U.K. and its sales and profits rose over the period as indicated in Table 8.21. By contrast, ICI, as noted in Section 1 above, was forced to take losses on its exports in order to retain its markets.

"Being near to the market" is the rationale for Hoechst's U.K. production in both fibers and paints. Berger's vulnerability to sterling overvaluation was limited in that its exports comprised mainly of specialist paints. Owing to transport costs, Berger paints were already made locally in its main foreign markets. Hoechst's other production in the U.K. was in high value-added pharmaceuticals which it does not manufacture elsewhere. Examples include animal health products, vaccines and agrochemicals tailored to the U.K. market and in which the costs of production are a relatively small proportion of selling prices. Thus the sterling overvaluation could be borne without a profits crisis.

If Hoechst's internal hedging strategy was successful, how can the pattern of Table 8.20 be explained, which underpins the hypothesis that sterling overvaluation benefited German exports to the U.K.?

It is necessary to investigate what the motives were for Hoechst's purchase and sale of its various businesses in the U.K. to ascertain whether real exchange rate changes played a role in the decisions. Between 1978 and 1988, Hoechst bought two U.K. businesses (Optrex and Cox Pharmaceuticals) and sold two (Berger and Optrex). In 1978, it jointly bought Optrex to gain expertise in eye healthcare products. It sold Optrex in 1983 as the business no longer fitted its strategy. In 1985, Hoechst bought Cox Pharmaceuticals, again for its specialist expertise. The purchases and sales were unconnected with currency factors, except in the possible case of Berger.

In 1979, Berger constituted the larger part of Hoechst's total paint output. To improve economies of scale, should Hoechst have concentrated paints production in the U.K. and closed paint manufacture in Germany? Hoechst's strategy instead was to cut U.K. output of Berger products. Despite restructuring in 1980, involving costs of £8.2 M, Hoechst failed to make U.K. production profitable. Hoechst decided that Berger could

not be made viable. A buyer was not found until early 1988 at the peak of a construction boom in the U.K.. The sale of Berger mainly explains the sharp decline shown in Table 8.20 in Hoechst's production in the U.K. as a percentage of its sales.

The U.K. market was served instead by the export of specialist paints from Germany. It is necessary to assess the impact of sterling overvaluation in this decision. As ICI's paints division was also subject to sterling overvaluation, it is appropriate to compare how Berger and ICI Paints fared.

7.3 A comparison between Berger and ICI Paints Division 1979-83.

Porter's (1989) hypothesis that competitive strength derives from rivalry between strong competitors which in turn creates and consolidates advantages at both the supplier and marketing levels does not appear to be applicable to the paints business owing to transport costs and the need for local production. Thus the criteria used here to compare Berger and ICI Paints Division are relatively simple: product mix, market position and the geographical diversification of production.

TABLE 8.22
COMPARISON OF SALES AND PROFIT IN £M OF BERGER AND ICI PAINTS DIVISION, 1979-83

	BERGER		ICI PAINTS DIVISION	
	SALES	PROFIT	SALES	PROFIT
1979	223	n.a	416	30
1980	236	-8.2	449	27
1981	269	+6.1	455	27
1982	279	-6.7	500	22
1983	293	loss, figure n.a.	590	26

Source: annual reports

7.3.1 Similarities between Berger and ICI Paints Division.

In product mix, Berger (Hoechst 1979 Annual Report:47) and ICI Paints had similar product ranges yet ICI's paints division was consistently profitable over the years of

sterling overvaluation whereas Berger's results turned into loss. One reason for ICI's profitability is its "Dulux" brand leadership and the introduction of leading edge products such as solid emulsion (ICI Annual Report 1983:10).

In terms of the proportion of total group sales represented by paints, Hoechst (7.4%) and ICI (7.7%) were almost equal in 1979 at the start of sterling overvaluation. Berger constituted the bulk of Hoechst's paint sales in 1979.

7.3.2 Contrasts between Berger and ICI Paints Division.

The main contrasts between Berger and ICI Paints Division lay in market position; resilience to exchange risk via restructuring and product innovation; market diversification; and geographical diversification of production.

Berger's market position was only strong in the U.K. and Australasia. This concentration on only two markets rendered the group highly vulnerable since when the U.K. came out of misalignment in 1983, the Australasian market was in deep recession. Hoechst 1979 Annual Report (p.47) ascribed the decline in Berger's net income to the upward movement in sterling, extremely high U.K. interest rates and to steep increases in raw materials prices. The 1981 Annual Report (p.49) explained the 13.5% sales increase and return to profitability to favourable business conditions in export markets. However, in 1982 and 1983, losses were recorded.

ICI enjoyed a leading position in both Berger's main markets, the U.K. and Australasia. In 1982, for example, at the height of sterling overvaluation, ICI gained a sharp improvement in sales and profitability in the U.K. decorative paints sector where ICI's market share increased significantly following the successful launch of "Natural Whites" paints (ICI Annual Report 1982:12). In contrast to Berger, ICI also had a strong position in other markets. ICI's strategy was to expand and acquire subsidiaries where these would result in leading positions and to concentrate on high-technology sectors of the market on an international basis (ICI Annual Report 1982:12). Examples of this strategy include the purchase of Arthur Holland & Sons plc in 1982, which strengthened ICI's

position in the can coatings market in the U.K., France and Germany. Product innovation also improved ICI's position in the can coatings market (ICI 1981 Annual Report:15).

In terms of resilience to exchange risk, ICI possessed greater flexibility to restructure that part of its paints business which was vulnerable, whereas Berger did not. In 1982, Berger discontinued its wallcovering paints business. According to ICI's 1981 Annual Report, ICI's wallcovering paints business was similarly affected by sterling's exchange rate (p.15), and suffered heavy losses (ICI Annual Report 1982:12) but ICI did not close it down. Instead, ICI merged it with its coated fabrics and PVC business, plus that of Marley, with the objective of creating a strong U.K.-based business (p.12). ICI Paint Division's resilience to exchange risk is similarly observed in innovation and manufacturing improvements. In the U.K., the decorative paint plant at Stowmarket was reequipped with high capacity computer-controlled filling lines. In the paints division, "capital expenditure during the year was directed towards modernising and increasing production capacity in the Far East and Indian subcontinent" (ICI Annual Report 1980:12). This is in line with ICI's diversification out of the U.K.

Another contrast between ICI Paints and Berger lies in ICI's much wider diversification of markets. Despite the rise in sterling, "in 1980 exports of paints were at record levels, with good business being obtained in African and E. European markets" (ICI Annual Report 1980:12). In 1981, ICI Paints "showed further improvement, with all the increase coming from outside W.Europe. Canada, Australia and S.E. Asia were the principal territories contributing to higher profits" (ICI Annual Report 1981:15). By contrast, Berger not only had an inferior position to ICI in the Australian market, but it did not have significant alternative markets which could offset any downturn in its U.K. and Australian sales. Further, a distribution network in other markets would take time for Berger to build up.

In terms of geographical diversification of production, Berger had far less flexibility than ICI. During the 1979-83 sterling misalignment, Berger's production was in the U.K. only. By contrast, "ICI is one of the world's leading paints manufacturers with plants in

W.Europe, N.America, Latin America, the Indian subcontinent, Australasia and the Far East. There is also manufacturing in Africa by related companies of ICI" (ICI Annual Report 1983:10).

The conclusion is that Hoechst could not obtain a satisfactory return on sales of its Berger paints subsidiary. After its disposal in 1988, Hoechst AG's Annual Report (1988:21) noted that sales of automotive and industrial paints rose, with the main increases recorded in Germany, the U.K., Spain, France and Italy. Thus U.K. sales now came from Germany instead of production in the U.K. The 1988 Annual Report also commented that "after the sale of Berger, sales for the (paints) business area as a whole were 9% lower than in the previous year. Restated on a comparable basis, sales would have risen by 8%. We nearly equalled our good profit of the previous year". From this, it can be concluded that in total contrast to the position in 1979, by 1988 Berger itself was only a peripheral activity within Hoechst's paints division.

Berger's relative lack of profitability stemmed from its overdependence on two markets and its dependence on only one production location -the U.K.- which was subject to currency misalignment. ICI Paints was also subject to currency misalignment, but it possessed far greater flexibility in terms of both production location and division of markets. ICI Paints' greater size and profitability engendered further resilience to the effects of misalignment: in distribution, in manufacturing and product innovation, and brand leadership. Hoechst would have needed to invest substantial sums to make Berger similarly resilient to currency risk. However, it can be deduced that there was little point in Hoechst investing such sums in the U.K. where there already existed a strong local rival and where there was little chance for Berger to become market leader. Unlike the auto industry, for example, the paints business is not critically dependent on the presence of local suppliers and other supportive factors in the Porter model. Further, it appeared that Hoechst did not attach great significance to the Berger brand name in that it was ready to sell it. Hoechst could also just as well carry on its paints business from its German base.

7.4 Conclusions.

The main impact of sterling overvaluation was felt on Hoechst's Berger paints division in the U.K. rather than on its U.K. speciality chemicals production. Conclusive evidence of the unmanageability of sterling misalignment would be for Hoechst to shut down its entire U.K. production and export from Germany. Hoechst did not do this.

Berger was different in that it faced strong market competition from ICI. This magnified Berger's vulnerability to currency overvaluation and contributed to Berger becoming a troublesome loss-making subsidiary. Nevertheless, the comparison of Berger with ICI's Paints Division underlines that the role of the treasury in the management of currency risk was limited and that the flexibility of the product-market strategy is of far greater significance.

The reasons given by Hoechst for Berger's poor performance are the impact of sterling overvaluation on Berger's export capability, recession in the U.K., and high U.K. interest rates. Regarding business strategy, this highlights Porter's neglect of adverse macroeconomic factors and the role of government¹³ in creating an adverse business environment.

In conclusion, the sharp fall in Hoechst's U.K. production as percentage of total U.K. sales 1980-90 was not a strategic response to the 1979-83 sterling overvaluation except insofar as misalignment impacted on Berger's results.

¹³see Chapter 10.

8. BASF & BAYER IN THE U.K.

The example of these two companies lends further weight to the conclusions derived from the Hoechst example on its management of sterling overvaluation. This can be seen in four main respects:

Firstly, both Bayer and BASF¹⁴ have dramatically built-up U.K. production¹⁵ from virtually nothing at the end of misalignment in 1983 and were thus apparently not deterred by the possibility of a recurrence.

Secondly, their U.K. production has arisen primarily from the acquisition of businesses which fit their product-market strategies, and which happened to have U.K. production facilities, rather than from a purposeful strategy to produce in the U.K.

Thirdly, both are heavy importers into the U.K. from the German parent.

Fourthly, their treasury functions have only a limited role in protecting their U.K. operations from sterling misalignment. Owing to space constraints, the example of Bayer U.K.'s treasury is taken here. Bayer has two major U.K. subsidiaries (Agfa and Miles Laboratories U.K.). However, since Bayer U.K.'s treasury has no overview over, or control of, their cash flows, it has only a partial capability to manage the Bayer Group's sterling exposure. Neither, similarly to BASF, did Bayer's treasury have any role in the decision to make these acquisitions. Its role was essentially reactive - to manage the currency exposures once they had already been created by the heads of the respective business divisions.

Bayer's U.K. treasury is also not responsible for Bayer Group sales direct from Germany to U.K. customers which do not pass through Bayer U.K. or appear in its accounts. Thus

¹⁴source: J.Holm-Hansen, Corporate Planning Dept., BASF U.K., 22.8.93.

¹⁵In 1992, 29% and 30% of total U.K. sales respectively.

the U.K. treasury's liquidity management is confined to the data in Bayer U.K.'s annual report. This showed U.K. sales of £424M in 1992.

The U.K. treasury's perception¹⁶ of its role is one of mainly managing the risk of a rise in the DM against sterling. 70% of Bayer U.K.'s sales consist of imports into the U.K. of products made in Germany. Since 1987, these imports have all been priced in DM. Exports from Bayer U.K. are small in relation to imports and do not give rise to a currency management problem to the extent that they offset imports in DM from Germany. This is because approx. £50 M of annual exports are priced in sterling and approx. £20 M are invoiced in foreign currencies. In both cases, it falls on the foreign buyer to manage the currency risk, though shifting the risk to buyers does not obviate the need to manage the currency problem.

The means of managing the Bayer Group's sterling exposure is essentially short-term. Bayer U.K.'s transaction exposure is over £200 M per annum. Economic exposure is not managed by the U.K. treasury since it is not permitted to take any positions beyond that of its transaction exposure. This means that the management of the currency exposure is only as long as the date at which the contracted-for payment is due. This is a maximum of six months forward, but in most cases is much shorter. Whether these short-term exposures are hedged or not depends on the treasurer's perceptions of the future DM/£ exchange rate. Bayer U.K.'s treasurer acknowledges that to the extent that the pound does not depreciate in real terms against the DM, then the cost of hedging is a waste. Bayer nevertheless does not have a cost of hedging appraisal system. Thus hedge losses which might potentially cost the treasurer his job are not fed into the management information system.

Another feature of Bayer is that translation exposure management is officially the task of head office treasury in Germany, but in fact it is not managed.

¹⁶This information derives from Richard Baines, Treasurer, Bayer U.K., interviewed June 1992.

8.1 Conclusions.

In the early 1980s, BASF, Bayer and Hoechst's treasury activities were less sophisticated than those of ICI, particularly the treasuries of the German U.K. subsidiaries¹⁷, but the main difference is that the German companies were able to take advantage of sterling overvaluation whereas ICI was not.

Whereas ICI was forced to change its strategy and diversify out of the U.K., its German rivals were not forced to diversify out of Germany, nor did they experience a profits crisis. Instead, given stability in their operating environment, they benefited from incremental increases in their total sales.

¹⁷T. Harrison, interviewed 5.7.94.

9. HOW SUCCESSFUL WAS ICI'S FORCED STRATEGIC CHANGE IN MANAGING CURRENCY RISK ?

If the view that large MNCs are able to manage currency risk satisfactorily¹⁸ is correct, then the drastic strategic and organizational changes following the first period of overvaluation should have been able to protect ICI from the second period of misalignment 1990-92.

The methodology to investigate whether this is true is threefold. A straightforward ratio analysis of ICI during the second period of sterling overvaluation 1990-92 is compared with that of 1979-83. Second is an appraisal of whether the strategic change ensuing from the first period of overvaluation brought ICI closer to a natural hedge. Third is an investigation of the extent to which the organizational changes brought about in 1983 enabled ICI to plan better in the long-term to hedge itself against exchange risk.

¹⁸There is a difference between being structurally able or not and being competent to do so and able in practice.

9.1 Effect of sterling overvaluation on ICI 1990-92.

TABLE 8.23
ICI, SUMMARY PROFIT AND LOSS, £M, 1989-1992

	1989	1990	1991	1992*
TOTAL SALES	13,171	12,906	12,488	12,061
INTEREST CHARGES	219	206	220	216
PRE-TAX PROFIT	1,425	993	1,006	565

RATIO ANALYSIS

CURRENT RATIO	1.58	1.60	1.63	1.38
QUICK RATIO	0.90	0.93	1.03	0.86
GEARING	32.1	31.4	31.8	39.8
INTEREST COVER	9.93	5.83	4.83	0.22
PROFIT/SALES	12.48	9.3	9.8	7.88
RoA	22.8	14.2	13.0	9.8
SALES/STOCK	5.53	5.83	6.16	5.31
STOCK TURNOVER (IN DAYS)	66	63	59	69
SALES/FIXED ASSETS	2.35	2.39	2.26	1.98

Source: annual reports

* The 1992 ratios are calculated before extraordinary restructuring costs of £949M. If these are included, ICI made a net loss of £570M.

Compared to the 1979-83 overvaluation, ICI entered this second period of misalignment with better RoA, Profit/Sales and Sales/Fixed Assets ratios. Gearing was similar to the first period, but liquidity ratios were significantly worse. Interest cover showed a particular deterioration, and when restructuring costs for 1992 are included, ICI had a much weaker balance sheet compared to 1979-83.

The background to the 1990-92 misalignment is similar to that of 1979-83 in that there was also a recession in the U.S., but unlike the first period, there was no worldwide recession. This should have been positive for ICI, as should the fact that ICI benefited from high profits during the boom years of the late 1980s. Given ICI's massive balance sheet deterioration, it can be concluded that the restructuring following the 1979-83

overvaluation was clearly not a permanent solution to protect ICI from future misalignments. It is necessary to investigate why the strategic change of the 1980s did not work.

ICI's strategy of geographical and product diversification should have given ICI a better natural hedge by 1990 compared with 1979. This hypothesis is examined in relation to the strategies of ICI and its German competitors.

9.2 Internationalization of Production.

In 1979, ICI had a much larger proportion of total sales from foreign production than all its three German competitors (Table 8.12). ICI also had a relatively low percentage of sales outside its home market compared to Hoechst and Bayer¹⁹. Yet whilst ICI had a stronger natural hedge in 1979 compared to its German rivals, this was not enough to prevent it from suffering a major profits crisis at the time of the 1979-83 sterling overvaluation.

Closer inspection of the currency matching principle reveals how difficult it is to attain a natural hedge in the chemical industry. Firstly, the figure of 63% for ICI's proportion of sales from U.K. production in 1979 (Table 8.10) does not mean that 63% of its costs were in £. Nor does it mean that 58% of its sales in 1979 (Table 8.11) were in foreign currency. Table 8.18 indicated that a significant part of oil-based input costs are in US\$ whilst chemical sales in Europe tend to be priced in DM. Thus the extent to which sterling prices in the U.K. were subject to DM-price setting by German competitors cannot be quantified. If the 42% of ICI's sales that were in the U.K. were matched with £ costs, the question then is to what extent the remaining 58% of costs and revenues were unmatched in terms of currency denomination. Table 8.12 shows that 37% of ICI's total sales in 1979 were produced abroad. If these were matched in currency terms, which is a reasonable hypothesis to make, then only $58-37=21\%$ of ICI's sales in 1979 can be

¹⁹BASF may be considered an artificial exception in that a large part of its turnover comprised highly profitable energy sales destined for the German market. This distorted its sales pattern toward the domestic market.

considered to be subject to currency mismatches.

By 1992, ICI's proportion of total sales from foreign production (Table 8.12) increased in relation to all its three German competitors, but massively so in relation to Bayer and BASF. Thus ICI seemingly became far less dependent on sterling costs. By the same token, ICI became far less dependent on domestic revenues. By 1992, an enormous 81% of ICI's total sales were abroad. This percentage represented a massive increase in relation to Bayer and BASF.

It might be concluded from this that in the 1990-92 period of sterling overvaluation, ICI had diversified itself out of the U.K. economy and should therefore have been relatively immune to it. Yet ICI still experienced a dramatic decline in profitability over this period. In the 1990-92 annual reports, ICI attributes this to the "world recession". It has already been noted above that there was no world recession at the time, since Germany in particular was experiencing a boom and Italy, France and Japan were not in recession. Instead, ICI's internationalization of production and of diversification out of the U.K. made ICI much more dependent than its German rivals on four markets, all of which were in recession - the U.K., U.S., Canada and Australia.

The massive increase in the percentage of ICI's sales outside the U.K. does not indicate in what currencies these sales were denominated. With DM pricing in Europe, geographical diversification could have increased ICI's exposure to DM price-setting. Instead, Table 8.24 indicates a dramatic decline in the percentage of ICI's total sales in the E.U. By contrast, the pattern of the three German competitors has been for the share of total sales in the E.U. to remain roughly constant. The linking of E.U. currencies to the DM in the ERM served as a natural hedge to the German competitors so long as the narrow bands existed up to 1992/93, since well over 60% of their sales were in DM or in currencies linked to the DM.

TABLE 8.24

% OF TOTAL SALES IN E.U. - ICI AND GERMAN COMPETITORS, 1979-92

	1979	1982	1990	1992
ICI	57	69	49	45
BASF	66	70	65	68
BAYER	51	44	67	66
HOECHST	65	58	53	63

Source: annual reports

TABLE 8.25

% OF TOTAL PROFITS DERIVING FROM E.U. - ICI AND GERMAN COMPETITORS, 1979-92

	1979	1982	1990	1992
ICI	79	54	45	38
BASF	na	na	na	100
BAYER	na	na	70	58
HOECHST	na	na	68	49

Source: annual reports

Table 8.25 indicates that in 1992, a much higher proportion of the German chemicals companies' profits derived from the E.U. compared to ICI. This suggests that they are more vulnerable to recession in Germany and the E.U. than ICI. By contrast, ICI is more vulnerable to recession in the Americas (Table 8.16).

More important than the comparisons of natural hedges via geographical diversification is how the companies themselves perceive whether their strategies have been guided by such a motive. The former Chief Planner of ICI²⁰ states categorically that ICI has never had a conscious policy of matching the currency denomination of costs and revenues, though ICI does have a goal of production close to the customer, which is broadly similar. Instead, ICI's investments and divestments have been motivated by business considerations in line with its general strategy. It should nevertheless be stressed that this strategy has put diversification out of the U.K. as a primary objective following the 1979-83 misalignment.

²⁰T. Harrison, interviewed 19.7.1993

Similarly, ICI's German rivals have also not had a purposeful objective of creating a natural hedge by strategic means²¹. However, for the U.S. market at least, they have a conscious policy of exploiting the U.S. market via local production where possible, instead of export from Germany, because of the risk that real exchange rate changes might have a harmful effect on maintaining market share.

In the last 10 years, BASF has purposefully pursued a policy of FDI in the U.S. and of sourcing U.S. production locally. The result is that by 1992, at least 90% of BASF's N.American sales derived from local production (Table 8.19). The reason for BASF's strategy is categorically stated as the need to avoid sharp fluctuations in earnings and to report a stable growth in turnover and income to shareholders²².

9.2.1 Conclusion.

ICI's internationalization of production made it more vulnerable to recession by 1990, not less, even if ICI was less vulnerable to sterling misalignment in 1990 compared to 1979. The greater vulnerability is specific to 1990, since it was ICI's misfortune that its diversification was into a mix of markets which were in recession simultaneously.

9.3 Product Diversification as a means of reducing real exchange risk.

Charts 8.1 & 8.2 below indicate how the product turnover split for the four companies has changed between 1979 and 1992. Strict comparisons are not possible since the product categories differ in the competitors' annual reports. The comparison is accordingly made as a rough guide only. Broad conclusions that emerge are as follows: Firstly, ICI and its German competitors' have all increased the proportion of their turnover derived from high value-added, less exchange rate-sensitive products. The biggest shift by far appears to have been made by ICI.

²¹Holm-Hansen, Planning Dept., BASF, interviewed 22.8.1993, Dr.Bruhl, Hoechst, 11.4.91.

²²"A quarter of BASF's sales are in the U.S. and that the impact of fluctuations in the real US\$/DM exchange rate would be to cause undesirable fluctuations in group results when denominated in DM". (Holm-Hansen, *ibid.*)

Secondly, in 1979 the company resembling ICI most closely in its product mix was BASF and the least resembling ICI was Bayer. By 1992, ICI and Bayer were both highly similar in their product split and in the shares of profit from product categories. By contrast, in 1992 BASF derived the bulk of its profits from industrial chemicals.

Thirdly, whilst ICI's percentage of turnover in 1992 in industrial chemicals was higher than that of BASF, ICI made a loss on this turnover equal to 3 % of total profits. By contrast, industrial chemicals constituted one of BASF's largest sources of profit in 1992. This indicates that ICI's strategy of reducing the percentage of sales from industrial chemicals and increasing that of high-margin products as a cyclical and exchange rate hedge is not universally applicable in view of BASF's high profits .

One explanation for this paradox is as follows. If all chemical companies were competing in homogenous industrial chemicals on price alone, then sales and profits would be vulnerable to currency risk. However, the chemical companies are no longer producing homogenous products but have become highly differentiated oligopolists. Whereas product differentiation was previously confined to categories such as pharmaceuticals, there is increasing evidence that chemical companies are carving up the markets of industrial chemicals in order to create dominant positions for themselves in certain segments. For example, ICI swapped its fibers business for Dupont's acrylics business (FT.22 Oct.1992:22). To augment further its market position in acrylics, ICI has also swapped its European polypropylene business for BASF's European acrylics business (FT.22 Jan.1993:15). By the same token, BASF has become the second largest polypropylene supplier.

9.3.1 Conclusions.

ICI's product diversification into high value-added products whose costs and demand are less exchange rate sensitive made it less vulnerable to sterling misalignment by 1990 compared to 1979. Whereas pharmaceuticals can be highly profitable, this did not necessarily lead to advantage over German competitors since the Germans pursued the same strategy.

10. THE ROLE OF ICI'S ORGANIZATIONAL CHANGES IN MANAGING CURRENCY RISK.

To what extent have the organizational changes brought about in response to the profits crisis during the 1979-83 overvaluation improved ICI's long-term planning to hedge currency risk? Decisions to manage economic exposure could only be taken by two sets of actors - by the business divisions themselves and by top-down decisions directly from the board. The following examines how effective this decision-making was.

The organizational problem was that the business divisions had to reduce their vulnerability to sterling overvaluation. These business divisions are largely autonomous. The businesses which were least vulnerable did not have an incentive to do this, whereas the businesses which were most vulnerable did not have the resources to do it. The most vulnerable businesses were already loss-makers (Table 8.7). Thus the business divisions, acting independently, could not manage economic exposure for the group as a whole. It was necessary to have top-down decision-making. Yet ICI's treasury, although given the responsibility for currency risk management, did not have the powers nor the capability to give such top-down instructions to the business divisions.

The investigation is focused on three aspects. One is on the changed role of ICI's Executive Board. Second is on the changed role of ICI's planning department. Third is on the changed role of ICI's business divisions. In each case, the question that is investigated is to what extent the changes made were consistent with the long-term needs of economic exposure management.

The first organizational changes were not instigated until 1983, i.e. four years after sterling started its real appreciation in 1979. One was a complete restructuring of the financial budget and budget monitoring process. Second was to transfer profit and operating responsibility for business units to the level of management immediately below the main board.

10.1 Changed role of ICI's Executive Board.

The 1983 changes cut the size of the board from 14 to 8 members. These 8 members no longer had personal profit accountability for various sectors of ICI's operations. Prior to this change, the board had exercised more of a control²³ function over the businesses. Now its role became to push the company far more positively in the direction the board decided it ought to go (Turner 1984:16). The board could now increase resources to divisions which it regards as having potential and cut resources to divisions which it does not, thus making drastic cost-cutting easier in response to currency overvaluation. According to Lorenz (FT 26.2.1993:14), ICI's managers running pharmaceuticals, agrochemicals, paints and some specialities felt frustrated in the 40 years up to 1983 at the priority given to industrial chemicals by the ICI board, which was dominated by industrial chemicals people. Pettigrew (FT 26.2.1993:14) states that as long ago as the 1960s, managers of speciality chemicals felt neglected and starved of funds. This attitude fermented up to 1983 as the internal power of industrial chemicals managers persisted long past the point at which their side of the business was the more important in terms of profitability and growth potential.

The means of strategic control is via two sources of reserve power - budgeting and planning controls. The critique of the board's post-1983 role is focused here on two concerns. One is that its power to steer the whole group, and to ensure that individual parts of the group are following strategies which are consistent with group strategy, does not guarantee that ICI will not be vulnerable to currency risk in the long-term. Two examples are given to underpin this assertion. The board's decision to shift resources from industrial to speciality chemicals has not been a success²⁴; ICI's speciality chemicals have earned low returns and were loss-making in the last quarter of 1992. Further, the board's decision to split ICI into two has left ICI with price-sensitive and cyclical industrial chemicals.

²³Harvey-Jones is quoted as saying how wrong he was in the 1970s to assume that the ICI board was a proactive body.

²⁴Speciality chemicals were only up from 8 to 10% of turnover from 1979 to 1992.

The second concern is the Executive Board's power to reallocate resources in its annual strategy review. This is made according to "ICI's Group strategic aims" (Pink 1988:21). Nowhere is the management of economic exposure, or of currency risk in general, mentioned in these "strategic aims". If protection against currency misalignment follows automatically, then such protection would be the result of accident rather than design. Indeed, the executive board is not prohibited from pursuing strategic currency risk management within these "strategic aims", so the omission appears to be one of neglect.

10.2 Changed role of ICI's planning department.

Three changes were made in 1983. Prior to 1983, the department emphasized the role of techniques in the planning process such as operational research and critical path diagrams (Hayes 1984:12). After 1983, "professional" planning was downgraded in that a businessman was made chief planner on the grounds that "business deals are made from the guts and that's how people make millions" (Hayes 1984:13).

The second change is that the function of the planning department as secretariat for ICI's 16 Policy Groups was abolished. Their abolition meant that control and monitoring of the performance of ICI's various businesses was no longer in the hands of the board directors individually, but collectively.

The third change is that the planning department no longer merely monitors how and where ICI deploys its capital expenditure. Instead, Pink (1988:23) lists 16 proactive roles but among the 16, only one is concerned with currency risk. This the role of providing "worldwide economic assumptions for planning and budgeting, and continuous assessment of the implications of economic trends on group strategy."

The critique of the above changes hinges on whether they are able to prevent ICI from suffering a repeat of the profits crisis that occurred during the 1979-83 sterling overvaluation. Doubts arise on the following fronts. Firstly, the effectiveness of a planning department can only be as good as the forecasts it provides and, secondly, it is no good just making forecasts and attempting to change the strategic plan as a result of

such forecasts. There must also be the means and an impetus to implement the advice of the planning department, otherwise the divisions can simply ignore the planning function altogether. Indeed, whilst the budgets of ICI's divisions are set autonomously and compulsorily on 3 year currency forecasts from the planning department²⁵, if individual divisions believe that the exchange rate assumptions are not relevant to their businesses, then they can submit a second "shadow" budget based on their own expectations (Turner 1984:17).

Given the lack of cohesiveness to act on currency forecasts and the difficulties in obtaining accurate forecasts, the 1983 changes cannot be considered satisfactory as far as the management of currency risk is concerned. More significantly, even if cohesiveness to act on changed forecasts existed, it is impossible to make major opportunistic changes in product-market strategy in time. This is because budgeting 3 years ahead is in any case only part of the planning process, which has a 10-year horizon owing to the length of time it can take to bring a product from invention to market. ICI did not believe it was worth making currency and financial forecasts further ahead because of uncertainty (Turner 1984:15).

10.3 Changed role of ICI's business divisions.

Prior to 1983, the 16 Policy Groups, each headed by a main board director, decided their own expenditure proposals. This resembled a conglomerate, rather than an integrated company.

The abolition of the Policy Groups meant that the business divisions were now subservient to the 8 members of the Executive Board in budgeting, monitoring and planning. At the same time, the power of the divisions has been increased relative to national "country managers" and functional managers. The logic is that where products

²⁵ This is necessary because if there were no common set of currency assumptions, there would be no consistency in budgeting. A paradox exists in that the businesses are not allowed to claim wrong currency forecasts as a reason for their not meeting their agreed targets.

are standardized and do not need to be customized to local markets, a product division which is global can take maximum advantage of economies of scale.

However, the shift away from vertical integration does not necessarily make it easier to manage exchange risk. Nine business groups were set up, four of which were headquartered outside Britain. It can be hypothesized that headquartering businesses outside the U.K. would reduce ICI's vulnerability to currency misalignment on account of the portfolio effect. However, if both the U.K. and U.S. are in recession at the same time and their currencies overvalued, such diversification magnifies vulnerability rather than reduces it. It also affects the capability of the global division to market the product across countries.

The necessary requirement for a global divisional structure is an ability to adjust prices to reflect real exchange rate changes. Exchange rate pass-through is facilitated by market power. Indeed, the strategies which the chemicals companies have been pursuing of divesting themselves of businesses in which their market power is weak and buying businesses in which their market power is already strong is consistent with the creation of a natural hedge. Doubts arise on the extent to which ICI can do this on a global scale. Such a strategy would be facilitated if the global chemical industry became a perfect oligopoly. However, differing degrees of local competition and national competition policy suggest that market power in a certain product is likely to differ markedly across national boundaries. In consequence, a conflict in the optimal organizational structure arises in that national responsiveness is still likely to be necessary. Bartlett and Goshal (1992) argue that there can be no such thing as a universal "global manager" and that it is necessary to have specialist managers at three levels - country, functional and at global business level. If ICI's Executive Board is then responsible for resolving most of the complexities and internal conflicts of balancing global, regional and local requirements, it is still not properly equipped to deal with the possibility of future currency misalignment. The main interaction is between the Executive Board and those running the global divisions. No proactive role is assigned to the treasury, which is perceived as a subservient service function - which it would seem to be. The treasury's role in ICI is

to manage the currency exposures which have already been created, and then its management is restricted to only 12 months forward.

10.4 Conclusions.

ICI's organizational changes did not have any effect during the 1979-83 sterling misalignment. The results could only be measured when sterling became overvalued again in 1990-92.

To the extent that the smaller executive board and the enhanced power of the product divisions focused ICI on its strengths, ICI's capability to withstand the misalignment syndrome should have been enhanced. Whilst this is true for the U.K., what occurred instead is that proactive strategy geared to exploiting ICI's business strengths rendered ICI vulnerable to recession in 1990-92 when its main markets went into recession simultaneously.

11. CONCLUSIONS.

ICI suffered a profits crisis during the 1979-83 misalignment and despite drastic strategic changes to diversify out of the U.K., ICI again could not manage the 1990-92 overvaluation without suffering a major deterioration in its balance sheet.

None of ICI's German competitors suffered as ICI did and whilst they were subject to the same commodity and oil cycle, they did not experience the massive decline in sales and profitability that ICI did. The reactive adjustment of strategy that was forced on ICI was costly and this burden was not imposed on ICI's German rivals.

Given ICI's efforts at product diversification, particularly out of industrial chemicals, the question arises as to why in 1993 ICI divested itself of high value-added products to a separate company, Zeneca. Owen & Harrison (1994) note the critical role of the stock market. This necessitates a comparison of the impact of the stock market and financial policy with Germany (see Appendix 6).

CHAPTER NINE

IMPLICATIONS FOR CORPORATE POLICY

1. INTRODUCTION.

The purpose of this chapter is threefold. One is to bring together the conclusions of the case studies to investigate if a common pattern exists and whether such a pattern is generalizable.

Second is to make recommendations of what corporations can do on their own account to reduce their vulnerability to prolonged currency overvaluation.

In view of the difficulties in immunizing themselves against prolonged overvaluation, evidence on corporate preferences regarding U.K. exchange rate policy is summarized.

2. GENERALIZING THE SIGNIFICANCE OF PROLONGED CURRENCY OVERVALUATION IN THE CASE-STUDIES.

The hypotheses in Chapter 4 are confirmed in the three case-studies. The research problématique in Chapter 1 is also illustrated in the case-studies.

If corporate treasuries were proactive instead of reactive, could they have prevented the profits crises that occurred in all three firms? What corporate treasuries need to manage prolonged currency overvaluation is a necessarily cheap option which can enable them to benefit from current exchange rates for, say, 5 years into the future and beyond, and decide not to use if it is not in their interest to do so. It is unlikely that means will ever be found for banks to bear such counterparty risks at a cheap price. Thus firms have no alternative but to strategically manage prolonged currency overvaluation themselves.

However, the finding of the case-studies is that the firms experienced major difficulties in strategically hedging prolonged overvaluation. First was in recognizing the changed environment as a discontinuity, and then in reacting to it appropriately. Operational "hedging" was not hedging at all but instead comprised desperate reactive measures of attempting to maintain sales via reduced margins. When this proved disastrous, there was no alternative to output cutbacks. But not even this delayed response was enough to save Lesney.

Second is that in all three, the short-term imperative of cost-cutting for survival mitigated against expenditure necessary for successful long-term proactive hedging.

Regarding product diversification, Jaguar was the least able to diversify its product range, whilst Lesney's diversification into metals in the U.K. and dolls in the U.S. was a disaster. The textbook remedy in a crisis is for the firm to stick to what it knows best. This remedy nevertheless indicates continuing inflexibility in product-market strategy. This might suggest that overtrading in the 1970s was Lesney's root problem. If so, it can

be hypothesized that had output been cut back sharply to a profitable level, then Lesney's failure need not have occurred - but the case-study found that there was hardly scope for further cost-cutting.

Where firms have diversified from their main activity, examples exist in which they have increased their exposure to exchange risk rather than reduced it, thereby potentially magnifying their vulnerability. This is demonstrated by the example of British Aerospace's diversification into cars with its Rover purchase. Over half of Rover output is exported, but costs for both Rover and British Aerospace are mainly in sterling. Rover also stretched British Aerospace's financial resources, leading to the need for Rover's disposal. Similarly, Daimler-Benz's diversification into aerospace with its purchase of Deutsche Aerospace - with DM costs and US\$-denominated sales - increased the group's currency exposure.

None of the case-study companies had an objective of creating a natural hedge to currency risk. Jaguar and Lesney did not have the resources to create a natural hedge even if they wanted to. Being "bought out", as Jaguar was, is unlikely to be regarded favourably by most firms as a means of securing a natural hedge, for obvious reasons. Moreover, the results of an improvement in the currency balance of cash flows through geographical diversification was only possible after a delay of several years. Even so, the case-studies showed that there is no guarantee that FDI can serve as an effective means of managing overvaluation in the domestic currency. Lesney found that its production ventures overseas were a disaster in being a drain on cashflow. In ICI, far greater scope existed for producing in the currencies of its markets, which it attempted to do, but at immense cost. The nature of the chemical industry is such that strategic change cannot be brought about quickly¹, whereas in Jaguar, operational, as well as financial constraints meant that it could not be brought about at all.

¹In the chemicals business, creating a natural hedge in Europe for ICI in which chemicals are DM-priced would require matching DM revenues with DM costs. This was only possible if ICI shifted all its production out of the U.K. and into Germany, or if the pound became permanently aligned to the DM.

Testing whether high combinations of currency matching and product diversification are associated with high degrees of balance sheet strength also does not yield meaningful conclusions. BASF and Bayer have traditionally had the strongest balance sheets of all four companies in the ICI case-study, yet both are at opposite spectra as regards geographical diversification and product mix.

2.1 Conclusions.

The problem identified, and confirmed in the case-studies, is that corporations could not manage the currency overvaluations via the conventional function assigned to manage currency risk, the treasury, whilst the nature of the business meant that it was not easy to adjust product-market strategy in the short-run. Further, the treasury in any case had only a marginal role, if any, in product-market strategy.

The generalizability of the case-studies is indicated in that not even ICI, as a world class MNC, with substantial geographic and product diversification, could immunize itself against prolonged overvaluation.

The persistence of strategic inflexibility meant that U.K. firms continued to be vulnerable at the time of the second sterling overvaluation in 1990-92.

If corporations are not able to manage prolonged sterling overvaluation themselves, a remaining strategy is to lobby the government. This was found to be ineffective (Appendix 5). There was thus little more in the short-term that corporations could do other than retrench to survive.

3. LIMITATIONS TO THE GENERALIZABILITY OF THE IMPACT OF PROLONGED CURRENCY OVERVALUATION.

Four principal limitations are discussed - market structure, the level of aggregate demand, non-price factors in competitiveness, and business risks other than currency risks.

3.1 Market structure.

If all firms were monopolies, then they could pass on the effects of currency overvaluation to the consumer. Only governments and consumer lobby groups need then be concerned about the effects of currency risk. Similarly, both competition and currency risk can be reduced by producing non-traded goods. This analogy does not yield useful prescriptive properties, since all firms cannot become monopolies, nor can they all specialize in producing non-traded goods. Further, whilst firms strive to attain dominant positions in their chosen market niches, it is not easy for individual firms to attain such positions if all firms are trying to do it. Large corporations have, a priori, greater resources and flexibility to attain dominant positions in their market niches, implying that prolonged currency overvaluation can have the effect of weeding out smaller firms. However, the ICI case study demonstrates that not even the monopoly power accruing from patents in pharmaceuticals was sufficient to immunize the firm from currency overvaluation².

3.2 Aggregate demand.

Aggregate demand can also be of far greater significance than currency risk. The US\$ overvaluation between 1980-85 coincided with a Keynesian boom. By contrast, the overvaluations in sterling 1979-83 and 1990-92 are linked with high real interest rates and recession.

²ICI's share of total profits from pharmaceuticals in 1979 and 1992 was reportedly 10% and 67% respectively on turnover shares of 5% and 14% respectively. The large profits from pharmaceuticals in 1992 were insufficient to prevent a collapse in total profits in 1992.

3.3 Non-price factors.

Non-price factors can be classified in three principal categories. Firstly, there are institutional factors which can override price in the winning of export orders. These include the existence of contacts such as regional chambers of commerce and trade associations. Yet insofar as the U.K. lacks these (FT 5.5.94:19) compared to its German and French competitors, then it is a factor which serves as a competitive disadvantage to U.K. firms on top of currency overvaluation. The existence of credit, such as via export credit guarantee schemes, can be more important than price in securing exports, but the fact that most governments run such schemes reduces its importance as a limitation to the significance of currency overvaluation.

Secondly, once market access has been gained, other factors can override price such as the reliability of supply, a low record of strikes, the perceived quality of the product and the existence of a service network which may be vital in purchase decisions.

Thirdly, it is important to stress that whilst U.K. unit labour costs can be significantly below those of Germany, this is only relevant at the margin. This is not a limitation to the significance of prolonged currency overvaluation but serves to accentuate its significance. To take full advantage of the labour cost differential in favour of the U.K., the U.K. must have the production capacity in place and the personnel who are able to design, produce and market goods at equivalent or superior quality to those of Germany in order to attain dominant market positions. Yet the NIESR (1994) finds in the chemical and engineering industries that U.K. manufacturers continue to trail their German opposite numbers in the training of technicians and in the use of postgraduate engineers and scientists. To the extent that U.K. firms are "followers" in technical innovation, and in attitudes toward it, the U.K.'s favourable labour cost differential is not a critical factor and German labour costs are able to remain higher on account of the product demand stemming from "leader" status.

3.4 Business risks.

Whilst the lowest currency risks are in non-traded goods, business risk can nevertheless

be substantial; yet external hedges do not exist for such risks. ICI, for example, did not forecast the massive overcapacity emerging in petrochemicals, nor could it hedge against its big customers going out of business. Business risks such as Lesney's purchase of a loss-making U.S. acquisition and in its disastrous diversification into metals pressings further indicate the great difficulty in diversification as a strategy to manage exchange rate misalignment. The recession associated with overvaluation makes it more likely that diversification efforts will go wrong as the diversification can be just as much or even more affected by recession than the core business. A further example is Ford's "operation location strategy". This has led Ford to produce globally, with the exception of Japan and S.E. Asia. However, geographical diversification is no substitute to being able to produce competitive products, to which the differing profit performance in the early 1990s of Ford and General Motors in Europe (General Motors cars sold better than Ford cars) testifies (FT 6.5.1994:25). Nevertheless, producing the right product is not a sufficient condition for managing misalignment. FMT Holdings, a U.K. machine tool manufacturer with technology and expertise in advance of U.S. and European competitors and equal to any technology employed by the Japanese, was forced into receivership in 1994 by a lack of working capital. This prevented it from taking advantage of any upturn in business³. It is also noted that the number of business failures following the 1979-83 misalignment did not peak until 1985 (FT 14.5.93).

3.5 Conclusion.

It is not concluded that the 1979-83 overvaluation was the only problem facing the case study companies nor is it concluded that Jaguar's and ICI's profits crisis was solely owing to currency overvaluation. Jaguar was part of BL, which itself was virtually bankrupt without government support. By contrast, ICI had a very strong balance sheet at the time of the 1979-83 overvaluation, which aided its ability to restructure, but overvaluation came at the same time as its overdependence on petrochemicals. Financial risks other than currency risks need also to be examined, since these can be lower for German competitors (see Appendix 6).

³S.J. Brown, Director General, Machine Tool Technologies Association, U.K. in FT:11.2.94:16.

The significance of risks other than currency risks and of the impact of currency overvaluation itself varies according to industry and firm and this serves as a limit to the generalizability of the case studies.

4. WHY HAS THE ROLE OF THE TREASURY IN CURRENCY RISK MANAGEMENT REMAINED LIMITED FOR SO LONG?

Firstly, treasurers themselves are not equipped for effective strategic management. This stems both from their role as treasurers and from their training. The treasury is generally the unit in the firm responsible for gathering information on exchange rates and disseminating information on the currency risk of the business divisions. Thus if the treasury were able to forecast exchange rates, the treasury could proactively influence the business divisions to quickly institute operational and strategic hedges. Even if accurate forecasting were possible, it would be difficult to operationalize such an advantage in terms of product-market strategy owing to the time lags before new plants come onstream. Secondly, imperfect information and a learning curve have to be overcome before treasurers are able to understand the product-market business of their firms to the same extent as line managers in the business divisions.

These reasons go some way to explain the pattern found by Edelshain (in pre-survey interviews to his thesis) in U.K. corporations, in which treasurers openly admitted that they knew little of the product-market business of the firm they were working in and they perceived their career pattern as one of moving from firm to firm within the treasury function, regardless of the line of business in which that firm is engaged. This suggests that treasurers do not seek to assume a proactive role in a firm's product-market strategy. Instead, it appears they are content to restrict themselves, as far as currency risk is concerned, merely to an advisory role on the hedging capabilities of financial markets. If financial markets do not have the means to effectively hedge a company's risks, then by implication, the treasurer does not have a role either. It is in this sense that the role of the treasury in currency risk management is limited. The significance is observed in the Jaguar case study. The finding that the management of economic exposure could only be effectively conducted in terms of product-market strategy put Jaguar at a competitive disadvantage to both BMW and Mercedes-Benz which were well placed for such management.

A third reason why the role of the treasury in currency hedging is limited arises not so much because of the limitations of financial markets in terms of depth in far-off future dates, but because of the innate risk aversion of the treasurer. This is exemplified in the reluctance to lock into current forward rates for fear of locking into a loss.

Fourthly, what needs explaining is why treasurers are content to restrict themselves to financial hedging. One explanation is that it is in the interests of powerful groups that the role remains limited to the finance function. Banks have an interest in expanding their sales of treasury products. Secondly, senior managers and finance directors have confined appraisal of the treasury's role to financial areas⁴. This may be because they perceive treasurers as being financial specialists and because of a natural caution on the part of senior managers arising from fears of losses if the treasury is instructed to concern itself with strategic hedging. Thirdly, government has an interest in maintaining the status quo. The U.K. government takes the view that it is up to business to manage itself and that implies that business must manage overvaluations created by government policy, since if government did take a responsibility, it would have to underwrite firms' losses (Lawson 1992).

A fifth reason why the role of the treasury in currency hedging is limited is because treasury staff are often drawn from a bank background and, instead of a professional bank training, they may just have the necessary product knowledge required for treasury sales. It is found in Appendix 5 that treasurers form a very weak lobbying group and that it was the chairmen of large MNCs and the CBI which lobbied during U.K. overvaluations, not treasurers. Instead of lobbying for changes in exchange rate policy, treasurers are ready to acquiesce in a corporate reaction of retrenchment and job losses. This may be owing to two reasons. One is that treasurers may not feel that they are empowered within their organizations to do anything outside their narrow job

⁴Performance evaluation comprises, for example, whether the treasury obtained a higher return on surplus funds than LIBOR over a quarterly period.

specification⁵. Secondly, treasurers' conservatism (Panic 1991) fits in with a preference for retrenchment and job losses, rather than lobbying against currency overvaluation. This preference also accords with socio-cultural norms in the U.K., but not those of Germany. This underpins the need for a comparison of the organizational and institutional features of finance in the U.K. and Germany.

⁵Those who are empowered, such as directors, may have a training in accountancy. However, their general level of education in currency risk management is indicated in that there are no compulsory papers in foreign exchange risk management in the examinations of any of the U.K. accountancy bodies. However, there may be compulsory questions on foreign exchange consolidation. Consolidation in the number of accountancy bodies may lead to reform.

5. TREASURERS' PREFERENCES ON EXCHANGE RATE AND REGIME POLICY.

Given the finding that neither external nor strategic hedging was able to immunize the case-study firms from prolonged currency overvaluation, the last resort was to attempt to influence government exchange rate policy.

5.1 Evidence on U.K. corporate preferences on U.K. exchange rate policy.

Three main surveys have investigated this topic (CBI 1980, 1987, 1990a). The main conclusions are that U.K. corporations seek exchange rate stability and, in the survey periods, they also sought a lower sterling exchange rate. In the 1987 survey, 63% of respondents considered the level of sterling to be a very important factor in their company's operations.

What has not been explained is why the U.K. government has ignored corporations' overwhelming desire for exchange rate stability as indicated in these surveys. Thus much more than changing exchange rate policy is required - it is necessary to harness policy into an exchange regime which can serve to prevent the U.K. government from embarking on policies leading to currency overvaluation.

5.2 Evidence on U.K. corporate treasurers' preferences on EMU.

If the currency management problems experienced at corporate level ensue because of exchange rate volatility, then by definition, these problems should be solved by the imposition of a fixed exchange rate regime. A necessary condition is that the regime facilitates economic convergence such that real exchange rates remain constant and overvaluation does not arise.

Fixed exchange rates in the E.U. would not satisfy these requirements⁶ as financial

⁶and were rejected in the Delors Report (1989:21, paras.25 & 26).

markets would perceive, even with full coordination of economic policy, that certain countries' economic policies might not be sustainable in relation to their economic fundamentals. The existence of separate national currencies would facilitate, and act as an incentive to, speculation against the currencies of the countries concerned. Thus a regime of fixed exchange rates in the E.U. would not be permanent (Gros & Thygesen 1991:96-98). This provides the rationale for the Association for the Monetary Union of Europe's (AMUE) support of monetary integration in the E.U.

Because no survey of U.K. corporations had been conducted on what U.K. corporate treasurers perceive of regime change⁷, part of this thesis comprises a new survey. The results confirm recognition in 1990 among U.K. treasurers of the need for monetary integration (57% of respondents) rather than a regime of fixed exchange rates in the E.U. (37% of respondents). 90% of respondents agreed that the success of the single market is dependent on currency stability and, in the long-term, 53% stated that they did not believe that currency stability can be achieved without a single currency. 86% believed that sterling should join the ERM and 75% believed that the rate should be at DM2.80 or below, i.e. the overwhelming majority would have stated that the U.K. government's chosen rate of DM2.95 was too high.

Three other significant findings emerged. Firstly, treasurers took an opposite policy line to the U.K. government in two main areas. Only 7% of respondents preferred the government's policy of competing currencies and a hard ECU which was put forward, but jettisoned, at the Maastricht Summit. Only 12% agreed with U.K. government policy of being against a more independent Bank of England.

A second finding is a realization among treasurers of the U.K. government's role in mismanagement of monetary and exchange rate policy. This is indicated in the overwhelming preference for an independent central bank in the U.K. and a majority

⁷Two questions were asked in a 1991 survey on the perception of U.K. Times 1000 companies of entry to the ERM (Edelshain 1995). Belk also conducted a later survey.

preference for delegation to a European Central Bank. Further, only 33% believed that a European Central Bank should be accountable to national parliaments.

A third significant finding is that only 3% of treasurers prefer a monetary free-for-all. This underlines the preeminence among the treasury profession of the objective of risk aversion and of the minimization of currency exposure. This contradicts any notion that the treasury profession as a whole, in line with banks, prefers exchange rate volatility because treasurers can profit from it.

The findings of a later survey by the CBI (1993b) are consistent with the conclusions of the survey of U.K. treasurers. The 1993 survey was the first time the CBI asked its members' preferences⁸ on a single currency. Most respondents believe that Europe would be the focal point of British trade and investment in the future, most favour currency stability and this is why they favour a single currency. The CBI noted that British businesses are clearly at odds with the U.K. government on the future of Europe (FT 12.11.93:18), and that the demise of the ERM should not preclude attempts to move ahead towards EMU.

5.3 Conclusions.

It is not surprising that U.K. corporate treasurers were found to be overwhelmingly in favour of regime change in view of the evidence in this thesis of how limited treasurers' options are in managing prolonged currency overvaluation. What is even more galling is that the regime change that was believed to preclude overvaluation, joining the ERM, actually created it, since the government deliberately chose an overvalued rate for sterling's entry. Interest rates consequently had to be maintained at an onerous level in order to sustain the overvaluation.

Why treasurers and corporate actors are so ineffective in lobbying on exchange rate policy is addressed in Appendix 5.

⁸200 large U.K. firms were selected for the survey.

6. POLICY RECOMMENDATIONS FOR CORPORATIONS TO REDUCE VULNERABILITY TO PROLONGED EXCHANGE RATE OVERVALUATION.

The ideal would be complete matching of revenues and costs in different currencies, and given the difficulties of doing so indicated in Chapter 4, recommendations to reduce vulnerability are inevitably sub-optimal to the ideal.

At its extreme, what firms need are perfect foresight and perfect flexibility in production. In the short-term, the treasury can improve the firm's capacity to react to prolonged currency overvaluation via improved cash management. This can provide a quick feedback of a corporation's earnings trend, so that the information is available to permit a timely reaction.

Given that perfect foresight can never be attained, emphasis should be placed on risk reduction. In the short-term, one proactive measure is to ensure that the company is not dependent on short-term financing and is thus not burdened with excessive interest payments when interest rates rise as part of the misalignment syndrome. However, it is difficult for the treasurer to ensure this, since the treasury is merely a service function for the needs of the business. For example, if the heads of the business divisions decide to make an acquisition financed by borrowing⁹ just before a period of prolonged overvaluation occurs, there is little that the treasurer can do but to warn business divisions of the downside risk. The problem is then one of not being able to forecast the overvaluation. As regards preventing acquisitions, the treasurer, perhaps via the finance director, would need a veto, since the latter's vote on the board may be only one out of many.

Risk reduction can also be facilitated by adjusting the currency denomination of the firm's

⁹Equity finance and long-term debt is preferable to borrowing, but market conditions may not permit long-term finance at the exact time at which the business divisions seek to make an acquisition.

capital structure (Appendix 3). The ability to match large mismatches in the currency denomination of costs and revenues by balance sheet hedging depends on the ability to borrow. Yet it is at a time of recession and high interest rates that a firm's borrowing capability is likely to be limited. For this reason, firms should maintain strong balance sheets as a key policy objective¹⁰

However, a survey in Business Banking Review (1992) concluded that it is the small enterprise which tends to be overdependent on short-term fickle and often expensive liabilities, suffers from a shortage of equity funds and long-term debt and is more likely to have vulnerable cash flows than large firms¹¹. It is accordingly recommended that small firms develop treasury expertise. Whilst they cannot justify employing a treasurer, yet most will have an in-house accountant, it is recommended that the accountancy bodies initiate their students into treasury work as a compulsory part of their training.

In the long-term, corporations cannot solve their problem of currency risk by building bigger and bigger treasuries, as for example, General Electric of the U.S. has with GE Capital Corporation. Corporations can nevertheless act proactively on two fronts - to target non-financial indicators such as market share etc. and to increase operational and strategic flexibility to improve reaction time and as a proactive strategy¹².

¹⁰Hanson plc is doing exactly this, particularly in view of its cyclical businesses such as brick manufacture. Whilst bricks may be insulated against foreign exchange risk, brick sales are not insulated from the misalignment syndrome.

¹¹A survey by National Westminster Bank of 850 businesses, most with annual sales of less than £750,000, found that 61% of small companies had an overdraft, whilst only 30% had term loans (FT:27.1.92).

¹²Examples of proactive strategies include those of Hanson and Redland. Hanson's strategy is to avoid exporting by its purchase of businesses which focus on domestic sales and by disposing of those parts of its acquisitions which are export-oriented. This partly explains why Hanson has not lobbied against currency overvaluation (when the US\$ is overvalued, the profits of Hanson's U.S. businesses increase in sterling terms) and is not a supporter of monetary integration in the E.U. Hanson's strategy is hardly replicable for most firms seeking to expand organically. In a saturated domestic market, exporting may be the only way to increase sales.

Redland plc has reduced its vulnerability to currency risk by the nature of its activity, which is building materials. These are non-traded, cyclical risk is reduced by geographical diversification and competition is

Since strategic flexibility may require shifting production abroad, it is recommended that firms with limited resources seek foreign partners to bear part of the risk in joint-ventures.

A fourth proactive strategy is to continue lobbying government, as per CBI (1993b) to bring about a European monetary discipline on U.K. politicians and an ECU D-Day.

For the very long-term, the above recommendations, aside from FDI, are largely cosmetic and organizational change in the firm is needed.

7.1 Conclusions.

Instead of paying more attention to strategic currency hedging, what has happened since 1973 is that the corporate response to floating has been to pay much more attention to financial strategy. The treasury function, which was previously involved mainly with cash management and the financing of the corporation, was greatly expanded to include the management of foreign exchange risk, though primarily the management of only short-term currency risk. This is evidenced in the focus on external and internal financial hedging.

The main question is whether the treasury's role should be expanded to include responsibility for the strategic management of currency risk or whether it should remain as it is.

If it remains as it is, with the Currency Committee having only an advisory role, a worst case scenario could be that the Currency Committee meets only infrequently and thus holds up the decision-making process. Certain members of the committee - such as the heads of the business divisions - may take only a half-hearted view of its role and send subordinates to deputize for them who lack the necessary knowledge for rapid and

reduced by securing leading positions in the markets in which it operates. Again, Redland's strategy cannot realistically be replicated by other firms in other industries.

effective decision-making.

One possibility is that the role of the treasurer be extended to providing input on currency matching and in so doing take part in a much wider strategic management of currency risk. The argument in favour of reform is that the treasury profession has already come a long way very quickly with its own specific responsibilities within the corporate hierarchy¹³. The question to be addressed is how the treasurer's role can be enhanced to include internal strategic hedging. The answer rests on what the treasury would hope to achieve by proactive management. One is a natural hedge for the business. The scope for a proactive role can be seen in that no plans existed in any of the case-study firms for the creation of a natural hedge and that in general, economic exposure is not effectively managed. Thus one possibility is that the role of the treasurer be augmented to include the design of benchmark natural hedges as standard treasury practice and that the management of economic exposure become an integral part of the treasury function, as the management of transaction and translation exposure currently is¹⁴.

For this recommendation to become reality, several changes are necessary at the educational and practical level.

At the educational level, compared to transaction and translation exposure, economic exposure is a neglected topic by all the key personnel who could or should be responsible for managing it. A re-education process is necessary for corporate planners, accountants¹⁵ and treasurers.

Corporate planners have tended to ignore the problem of currency risk. In the U.K.,

¹³In 1986, the U.K. Association of Corporate Treasurers reported that 90% of its members' treasury departments had been formed since 1970.

¹⁴Economic exposure management is not necessarily the same as the creation of a natural hedge, since a natural hedge may increase costs and sacrifice economies of scale. The natural hedge may not preclude an improvement in a competitor's position on account of a favourable movement in its currency of costs.

¹⁵see Edelshain 1994a.

accountancy training also neglects currency risk management, yet it is rare for anyone to become a finance director of a corporation unless already a qualified accountant. Presumably it is assumed that currency risk matters can be delegated to treasurers and that accountants do not need to know about them. An alternative explanation is that little thought is given to the subject.

The point here is that currency risk matters cannot even be left to treasurers because neither their training nor their role equips them adequately for the task of economic exposure management. In the training of treasurers, less than one page is devoted in the student's manual (ACT Currency Management 1990:2301,2302) to the measurement and reporting of economic exposure. The section on reporting economic exposure merely contains the following:

"There is probably little value to regularly reporting longer-term economic exposures; the aim should be to establish a reporting system which enables the treasurer to comment at an early stage in the planning process on the nature of economic risk implicit in any proposed activity. The importance of this involvement cannot be overestimated.

The economic exposure implied by established patterns of sales and purchases should be the subject of careful conservative forecasting, and can then be reported in a similar way to transaction risks - although the two should never be aggregated but always separately identified".

Similarly, the ACT's written work in its correspondence course simply requires a knowledge by future treasurers of what economic exposure is and asks them to provide a mere listing of the techniques that could be used to manage it. There are no practical exercises which could give candidates practice in setting up a measuring and reporting system of economic exposure from given data. Still less is there any requirement for a critical appraisal of whether the existing techniques of currency management are adequate. Nor is there any requirement that treasurers are trained in business strategy¹⁶.

¹⁶ The rationale for such training can be seen in the critical role of market structure, since market structure is an important determinant of a firm's vulnerability to exchange risk.

Thus in terms of formal training, unless they have obtained a training in strategy elsewhere, treasurers can be concluded to be completely unprepared for dealing with exchange rate misalignment and economic exposure management. Hence it is hoped that the lessons learnt from the critical evaluation of currency risk management in the case-studies in this thesis will serve as a guide to the inadequacies of existing instruments and techniques and organizational forms for dealing with prolonged currency overvaluation. However, these lessons are limited in that they indicate what not to do, rather than what to do, given the difficulties of currency matching.

At the practical level, several barriers exist to the above suggestions becoming reality. A problem exists in first convincing firms that a need exists for organizational change in order to manage economic exposure and exchange rate misalignment. A second problem lies in finding a consensus on the appropriate shape that this organizational change should take.

A lesson from the case-studies is that despite the acute problems exhibited at the time of the 1979-83 sterling overvaluation, there has been no major rethink of the role of the treasury in currency management. ICI's reaction, namely the organizational changes in the business divisions, were brought about top-down in the form of geographic diversification of ICI's businesses. The reality of empirical behaviour thus does not live up to the recommendations in ACT 2301/2302 listed above. ICI's treasury, for example, has had very little contact with ICI's corporate planners, but more with ICI's economics department¹⁷. This lack of contact with corporate strategists has been left untouched. Indeed, the mechanism of currency risk management in firms has gone on as before as if the 1979-83 overvaluation never occurred. This mechanism tends to be one of reliance on the treasury.

There has been no top-down insistence on a change in the organizational form whereby currency risk is managed in the firm. This is presumably because the corporate strategists

¹⁷T. Harrison, interviewed 7.6.1994.

have not recommended such a change to senior management. This may be because the corporate strategists do not want to get involved in currency matters, because of lack of specialist expertise. Further, there has been no grass-roots pressure for change in the organizational form either. It was noted above that treasurers are content with the status quo. Even though they are responsible for currency risk management and even though they are aware that the most effective means of performing the task is strategic, treasurers have not campaigned for greater powers within the firm's hierarchy to permit them to perform strategic currency management. Thus an incentive needs to exist for organizational change. A most powerful weapon already exists to act as a catalyst for change. This is that benchmarks for evaluating currency hedge performance are currently not implemented in most firms¹⁸. If they were, the treasury profession could no longer orient itself to purely financial hedging, but would be forced to include strategic hedging in its frame of reference.

The question arises as to how a system for evaluating external and strategic currency hedges be instituted, since the treasury profession has little incentive to lobby for an additional form of appraisal. Such an appraisal could reveal that external hedges have produced large losses in relation to the actual outturn of exchange rates. The principal reason why the corporate treasury would not wish to institute such a system is that under current organizational arrangements, in which the treasurer is solely responsible for deciding what hedges to put on and when, the treasurer would have to take sole responsibility for hedge losses. Given the possible large figures involved and the potential for their dramatization both within the firm and in the press, the treasurer would feel obliged to, or under pressure to, resign. In consequence, it is recommended that a system of joint decision-making on the implementation of hedges be set up. One means of doing so would be for the Currency Committee to initiate and endorse currency hedging measures, and become the primary originator of strategy within the firm with specific responsibility for the strategic management of currency risk.

¹⁸Only 29% of a sample of the top 250 U.K. corporations measure currency risk management performance against an independent yardstick (Touche Ross 1991).

CHAPTER TEN

IMPLICATIONS FOR PUBLIC POLICY

1. INTRODUCTION.

To indicate that prolonged exchange rate overvaluation matters for public policy, it is necessary to demonstrate that the case study firms were not special cases; that retrenchment by individual firms is replicated at industry-level and at national-level, and also across countries to demonstrate that the U.K. itself is not a special case. Currency misalignments in the U.S. and the former East Germany¹ are thus investigated to examine if the adverse effects observed in the U.K. are replicated.

If the data confirms that the adverse effects are generalized across countries, the question arises as to why governments did not take measures to prevent the currency overvaluations. Thus it is necessary to investigate why the currency overvaluations occurred in the first place. A taxonomy of causal factors is presented in Section 4.

The hypothesis is examined that government policy is itself a primary cause of the violations in the three major cases. The paradox of why governments should pursue policies leading to prolonged currency overvaluation, despite the adverse consequences for firms and for public policy, is investigated for the three major cases in Section 5.

Conclusions are summarized in Section 6. Recommendations for public policy are made in Chapter 11.

¹This will henceforth be referred to as the Neue Länder (of Germany).

2. REPLICATING THE FIRM-LEVEL EFFECTS OF PROLONGED EXCHANGE RATE OVERVALUATION TO INDUSTRIES.

This section investigates whether the findings of the case study firms are also replicated at industry level.

2.1 Existing research.

A literature search has failed to uncover any research on the impact of prolonged overvaluation on industries in the U.K. This in itself is extraordinary. Not even the CBI researched the topic at the time of the overvaluations, despite the CBI's research role on behalf of U.K. corporations. Two relevant industry-level studies exist using U.S. data:

2.1.1 The Ceglowski & Hilton study.

An attempt to isolate the impact of the rise in the dollar exchange rate on three particular U.S. industries (but not firms) has nevertheless been made in Ceglowski & Hilton (1987). It was found that performance in two of the three industries² selected is increasingly determined by trade and exchange rate factors (p.405).

It was found in the two industries that US\$ overvaluation led to higher import penetration, bankruptcies in the U.S. domestic industry, and remaining firms operated well below capacity. Other findings were a switch to foreign sourcing of standardized equipment and concentration on the specialized end of the market (p.445).

Ceglowski & Hilton's study does not find that FDI was initiated by dollar overvaluation. One reason is that U.S. firms had already set up plants in Mexico to take advantage of cheap labour.

²The third industry specializes in tailor-made, non-traded goods (fabricated structural metal products) and was selected to provide a standard against which the other two industries can be compared (p.407). The other two are metalworking equipment and electrical power transmission apparatus.

Whilst the Ceglowski & Hilton study is the first providing statistical evidence of the role of currency risk in the decline of two U.S. industries, it does not consider the constraints on individual firms in these industries which prevented them from effectively reacting to, or overcoming, the overvaluation of the dollar. Yet causality can only be proven at the level of the firm. Moreover, the study misses the point of economic exposure entirely. It ignores the change in the **competitive position of the individual firm** as a result of unexpected changes in real exchange rates. This has already been investigated in the case studies for Jaguar and ICI and so the task here is merely to investigate if the impact of overvaluation on Jaguar and ICI is replicated in the U.K. auto and chemical industries. Existing relevant studies are first summarized.

2.1.2 Richardson's study of the U.S. auto industry.

Richardson (1988) investigated how changes in exchange rates, factor costs and Japanese export restraints affected competitiveness in the U.S. auto industry, using aggregate industry data from 1976-85. Richardson found that U.S. unit labour costs rose faster than competitors even before the 1980-1985 US\$ overvaluation. This trend increase was not matched by a corresponding change in the relative prices of U.S. and imported cars during the overvaluation. Competitiveness of the U.S. industry deteriorated in line with exchange rates and relative labour costs.

Richardson acknowledged that his focus on unit labour costs has neglected other factors important in competitiveness such as trends in quality, product mix and market share (for servicing). Lawrence (1988:238) commented that the focus on unit labour costs and on the nominal, instead of the real US\$ exchange rate are flaws in Richardson's analysis. Two other omissions also underline the partiality of an aggregate industry-level approach. Firstly, consumer buying patterns changed during the overvaluation to favour smaller cars which had to be imported. Secondly, it is individual U.S. firms which have to manage the overvaluation, not the industry. The advantage of the portfolio approach to managing economic exposure can be seen in that the Ford Motor Co. was kept solvent over the period of overvaluation by the profits of its European operations (Lawrence 1988:238).

2.2 The U.K. auto industry.

Given the need to reject the industry-level approach of the above two studies, this section examines the changing position of the U.K. auto industry from shifts in the corporate strategy of the main U.K. producers. A threefold strategy is evident from U.K. auto manufacturers at the time of the 1979-83 sterling overvaluation. Firstly, all four manufacturers cut exports from the U.K. in the years 1980-83, with the cuts of three producers being particularly drastic. A second strategy is massive output cutbacks, though this is not reflected in the sales figures in **Table 10.1** as they include tied company imports. These were substantial, except in the case of Rover. For example, the bulk of Vauxhall's increase in sales in 1983 over 1982 was accounted for by imports. Thus a third strategy is to increasingly source the U.K. market from imports. In view of the balance of payments and employment effects, a major policy problem was created.

The competitive disadvantage to U.K. auto producers from the misalignment syndrome is indicated in that German auto producers suffered only a slight setback to production from recession in 1979-80 (**Chart 10.1**) and the uptrend in German output continued, whereas U.K. output reached a trough³.

³The most significant collapse in output in the chart, however, occurred in the U.S. 1979-83, coinciding with monetary tightening and US\$ overvaluation.

CHART 10.1
 AUTO OUTPUT 1972-1992

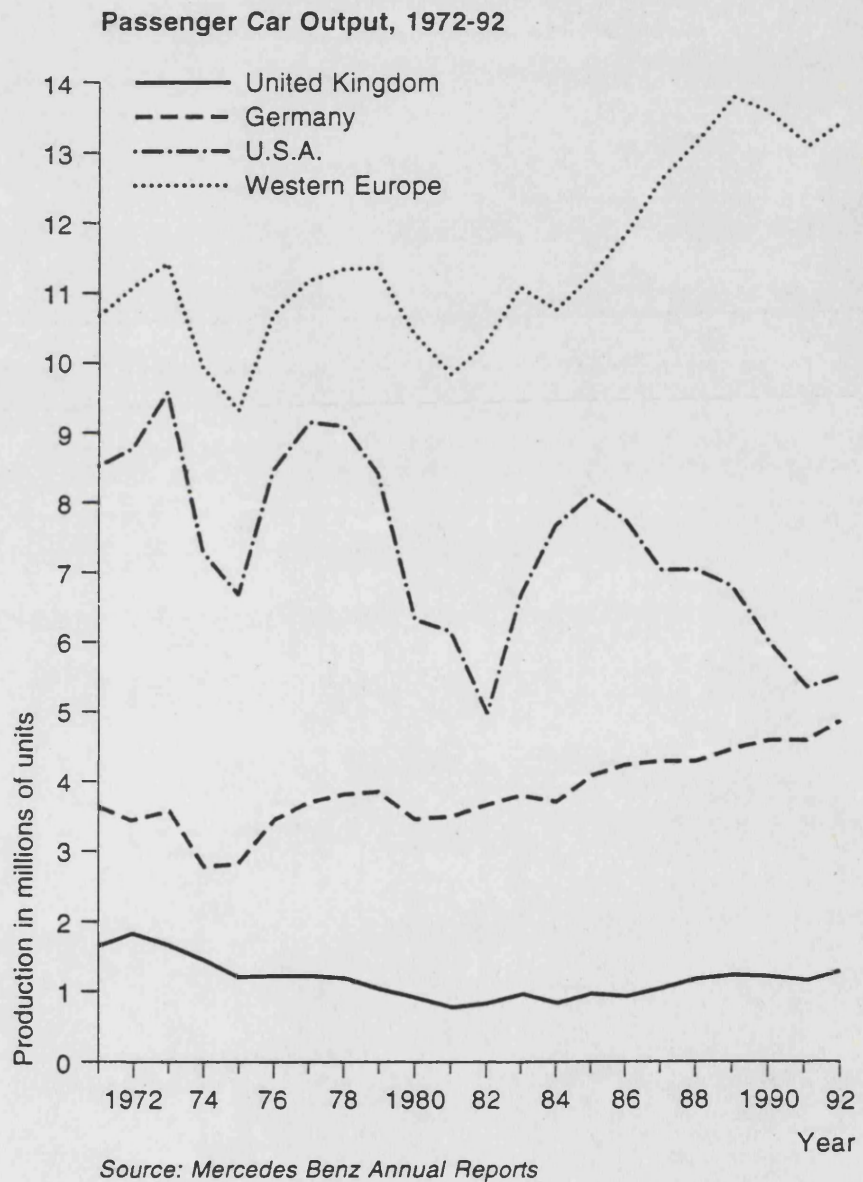


TABLE 10.1

U.K. UNIT SALES AND EXPORTS BY FOUR LARGEST U.K. AUTO MANUFACTURERS DURING 1980-83 AND ENSUING 3 YEARS.

	1980	1981	1982	1983
Rover	395,820 x 157,829	413,440 x 126,249	383,074 96,897	445,364 78,664
Ford	342,767 85,373	342,171 82,354	306,635 60,937	318,674 31,717
Vauxhall	55,002 9,690	69,932 5,536	112,669 300	126,524 320
Peugeot	125,314 94,589	117,439 80,799	56,235 27,216	120,503 85,296

	1984	1985	1986
Rover	383,324 78,664	465,104 112,783	404,454 123,558
Ford	273,767 16,984	317,689 14,233	346,267 6,425
Vauxhall	117,114 283	152,587 257	161,857 220
Peugeot	95,122 67,728	67,066 47,280	58,426 20,330

Source:SMMT

Bold data refers to exports from the U.K.

x = including Jaguar sales and exports. Jaguar data is excluded from 1982 onwards.

U.K. auto demand increased after 1983, aided by a fiscal-led boom, but the overvaluation continued to have an impact on firms' strategies. Table 10.1 depicts how the four largest manufacturers in the U.K. responded to misalignment and the later recovery in demand. Unit sales were roughly constant in the two producers that formed the backbone of the U.K. car industry, i.e. Rover and Ford, and whilst Rover's exports recovered, Ford's strategy was to massively cut U.K. exports. This is also the case of Vauxhall and Peugeot. All three increasingly sourced U.K. sales with tied imports (SMMT 1989).

Table 10.2 shows that the percentage of total U.K. exports accounted for by the motor industry fell significantly over the period 1979-83.

TABLE 10.2
% OF TOTAL U.K. EXPORTS ACCOUNTED FOR BY THE AUTO
INDUSTRY, 1964-1988

1964	16.8
1968	14.5
1972	13.5
1976	13.1
1979	9.5
1980	8.6
1981	8.1
1982	7.3
1983	6.7
1984	6.3
1985	6.4
1986	7.2
1987	7.8
1988	8.4

Source: SMMT

The U.K. changed from being a net exporter to a net importer of motor vehicles.

2.2.1 Conclusion.

The impact of the currency misalignment syndrome that was observed in the Jaguar case-study is replicated in the U.K. auto industry. See Sections 3.1 and 3.5 for comment on whether the devastating effects on total U.K. production noted in the 1979-82 overvaluation were repeated in the 1990-92 overvaluation.

2.3 The U.K. chemical industry

Chart 10.2 shows that U.K. chemical industry output fell dramatically 1979/80, thus generalizing the experience of ICI. German chemical output, by contrast, was relatively stable. U.S. chemical output did not suffer dramatically from US\$ overvaluation which started in 1980. This does not negate the hypothesis of the impact of overvaluation, but highlights the special features of the U.S. One is that overvaluation was accompanied by boom not prolonged recession. Second is that the size of the U.S. market had attracted FDI from European chemical producers in place of exports from Europe. Charts 10.3 and 10.5 confirm the dramatic rise in import penetration in the U.K. chemical industry and the stagnation in home sales. Chart 10.4 confirms a deterioration in the U.K. chemicals trade balance in 1983 over 1982, particularly to the E.U.

In conclusion, the problems faced by ICI documented in the case study are replicated in the U.K. chemicals industry.

CHART 10.2
INDEXES OF CHEMICALS PRODUCTION, U.K., U.S., GERMANY 1979-

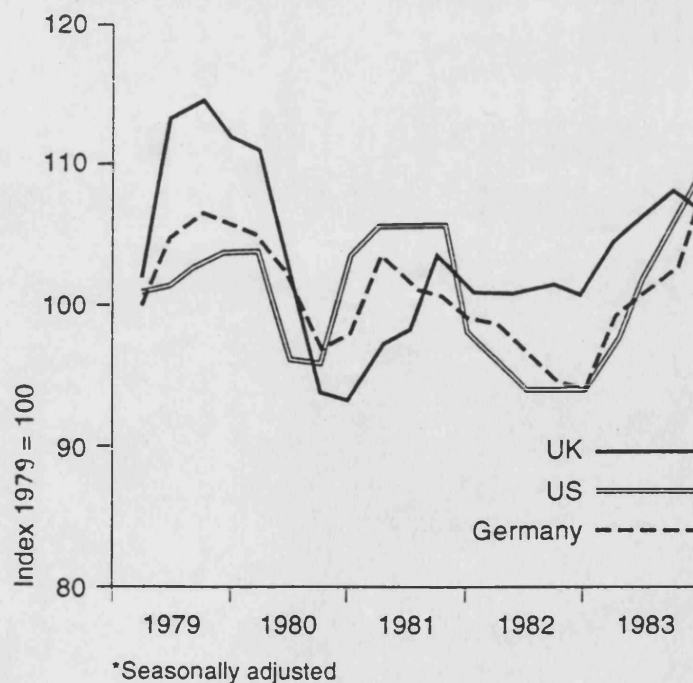


CHART 10.3
U.K. CHEMICAL INDUSTRY INDEXES OF HOME SALES AND TRADE VOLUME*

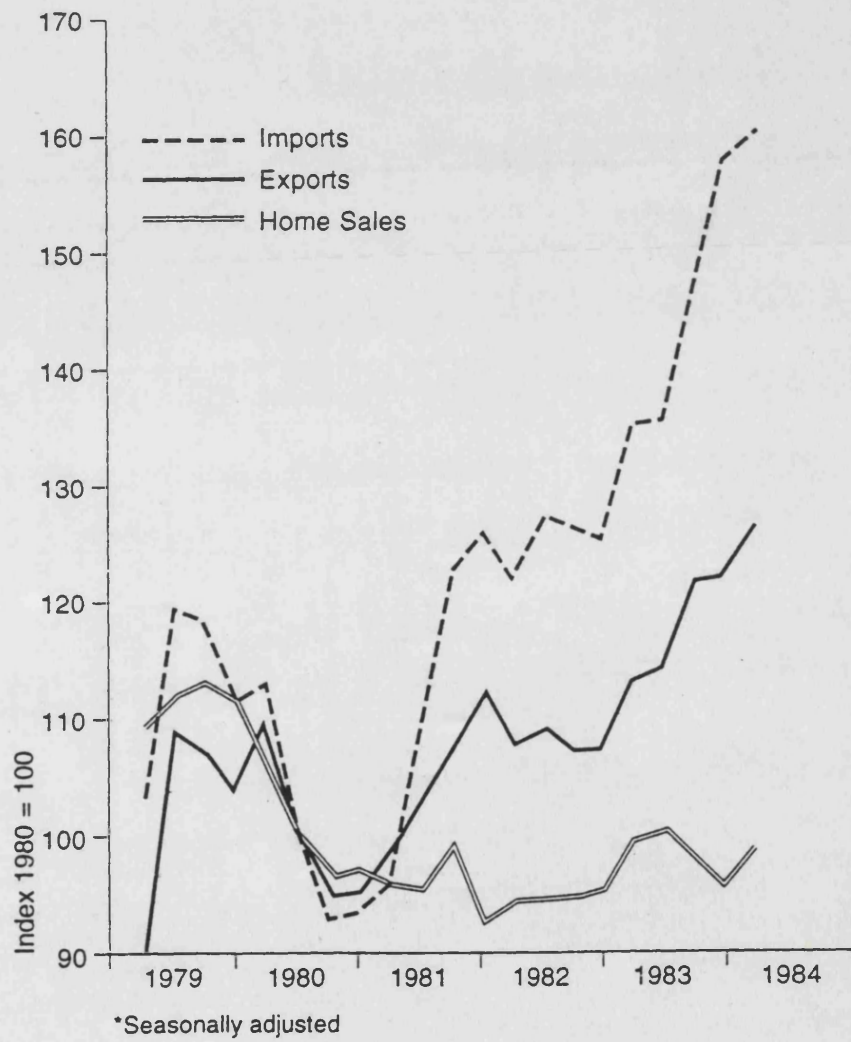
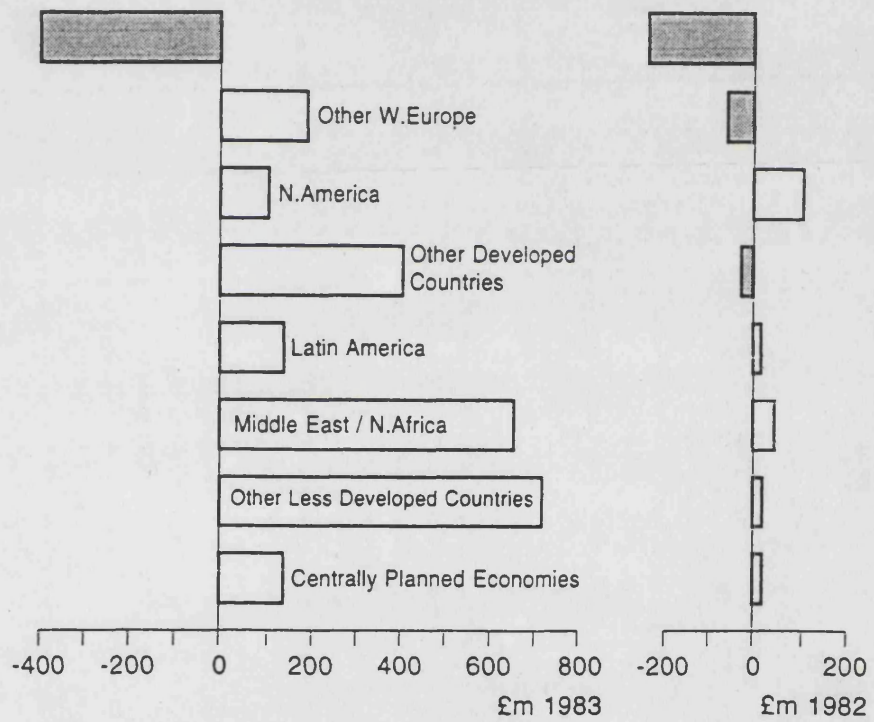
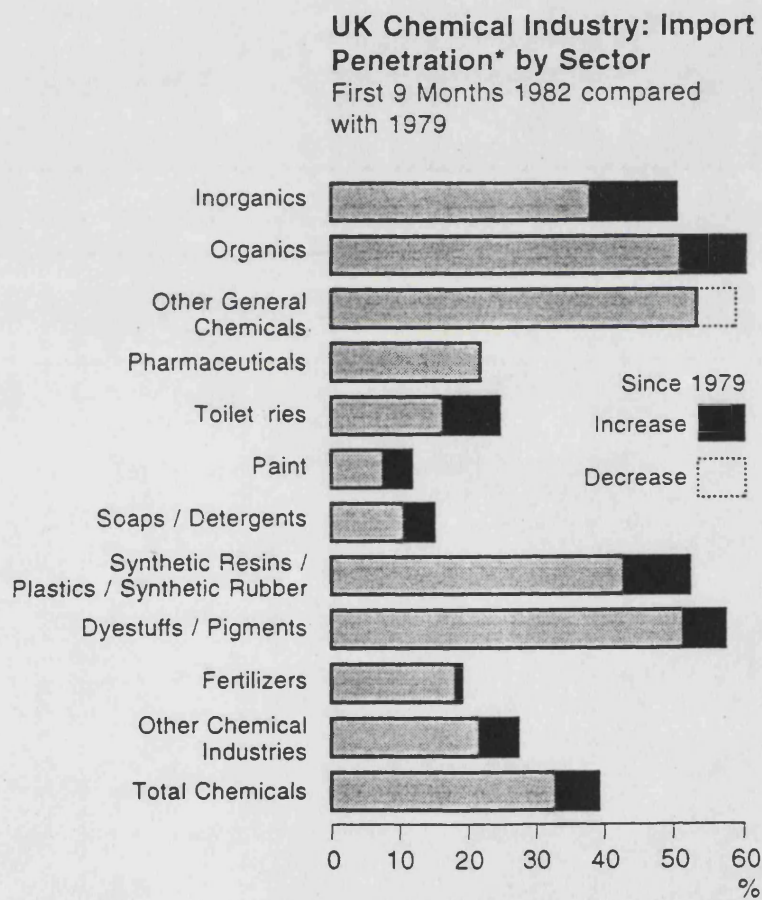


CHART 10.4
 U.K. CHEMICALS TRADE BALANCE* 1983 AND CHANGE ON 1982



*Exports - Imports (SITC Rev 2 Section 5)

CHART 10.5
 U.K. CHEMICAL INDUSTRY: IMPORT PENETRATION BY SECTOR



*Imports as a percentage of home demand, constant price or volume basis

3. THE IMPACT ON MACROECONOMIC INDICATORS.

The economics literature has focused principally on two factors which suggest that currency overvaluation should be a major cause of concern for public policy. One is hysteresis. On the demand side, real appreciation may allow foreign firms to establish a "beachhead" in the market because consumers develop loyalties to particular brands of a product. On the supply side, foreign firms may set up a distribution network which remains in place when the real appreciation is reversed. Bean (1988) found only tentative evidence for such hysteresis for the U.K., but he used aggregate macroeconomic data, not data for individual firms. A similar approach for the U.S. economy was used by Krugman (1988) who found no evidence of hysteresis.

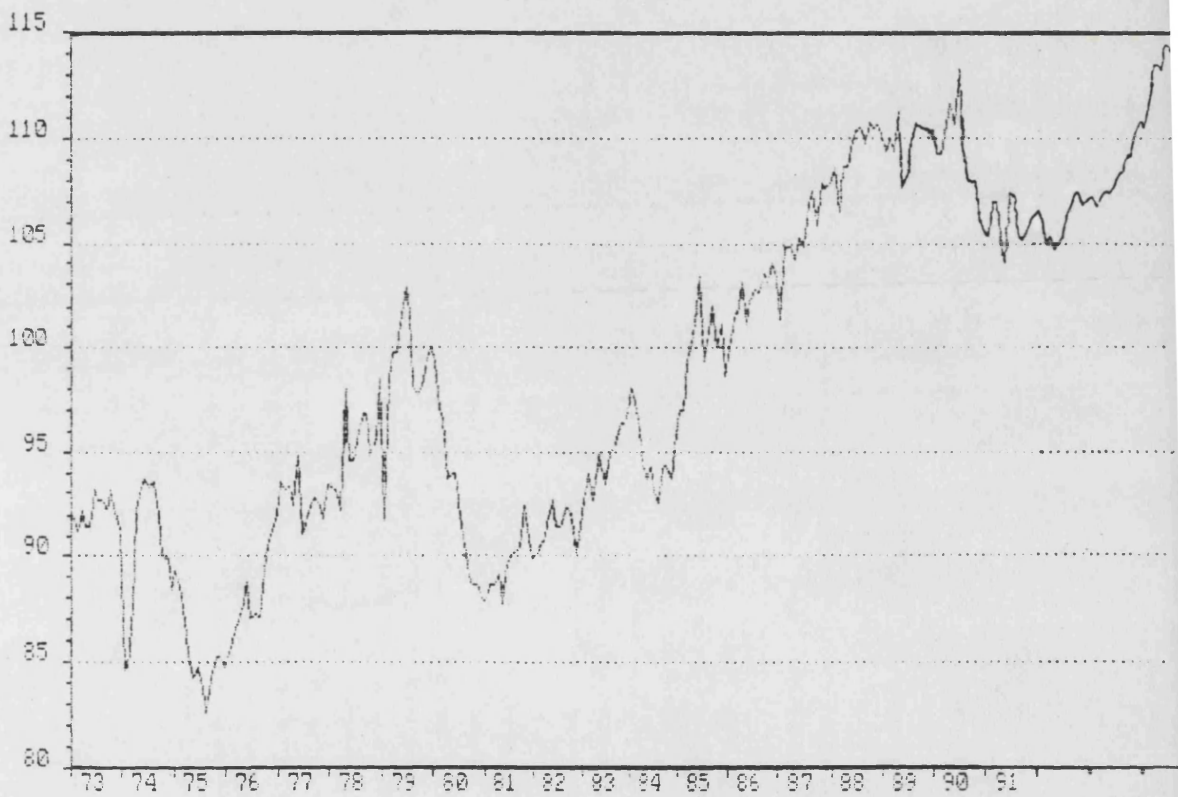
Second is the reallocation of capital from the tradables to the non-tradables sector of the economy, which may result in less efficiency. Krugman (1988) found no evidence for such a reallocation for the U.S. economy 1980-85. The level of manufacturing investment was maintained, but using aggregate, not firm-level data. One reason for maintained investment was however, increased military spending.

The remainder of this section summarizes the evidence on macroeconomic indicators such as GNP and capacity utilization to investigate whether output cutbacks at firm and industry-level were also replicated at the national level.

3.1 U.K. 1979-82 and 1990-92.

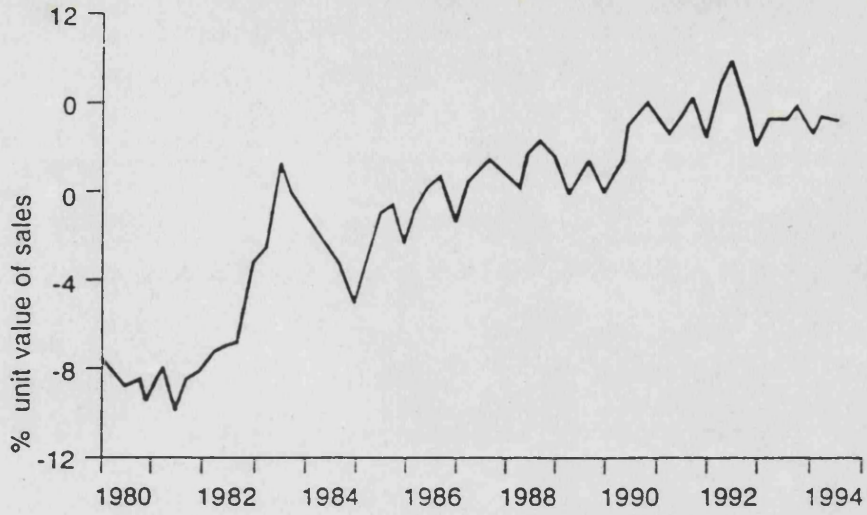
The years 1979-82 represent the sharpest and most severe downturn in economic activity since the slump of the early 1930s. **Chart 10.6** for U.K. industrial production shows marked declines, manufacturers' margins (**Chart 10.7**) were negative and total company liquidations (**Chart 10.8**) rose dramatically.

CHART 10.6
U.K. INDUSTRIAL PRODUCTION



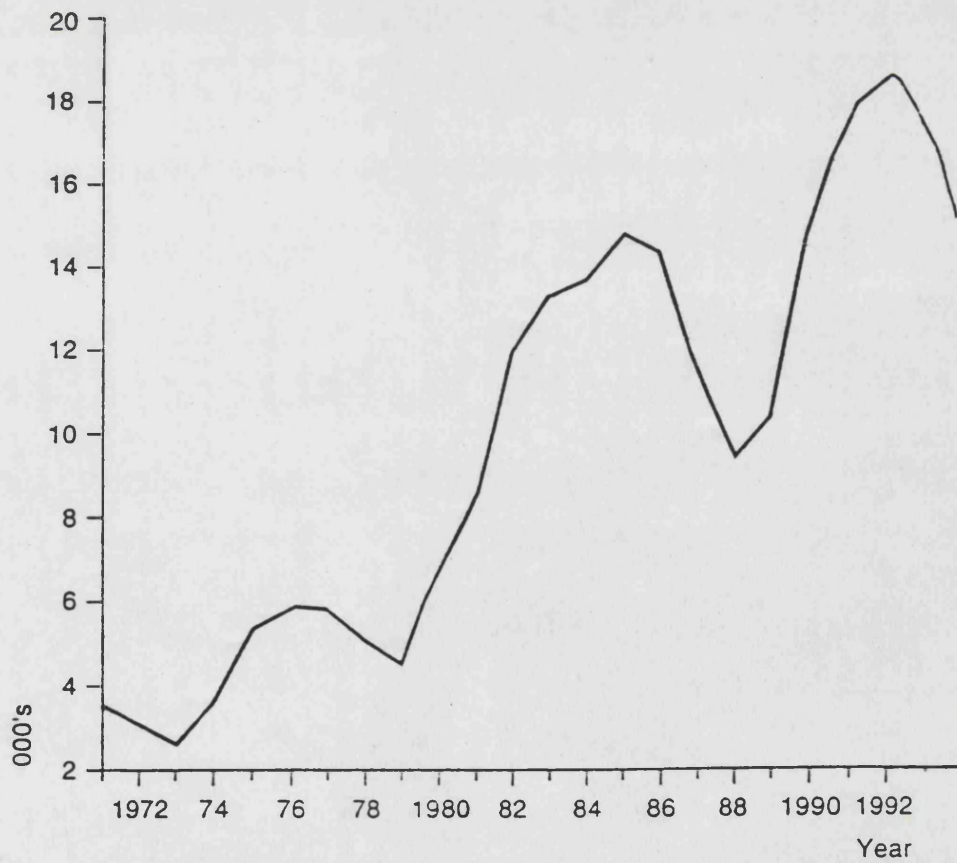
Source : Datastream

CHART 10.7
MANUFACTURERS' MARGINS, U.K., 1980-1994



Source: HSBC Greenwell

CHART 10.8
TOTAL COMPANY LIQUIDATIONS IN ENGLAND & WALES

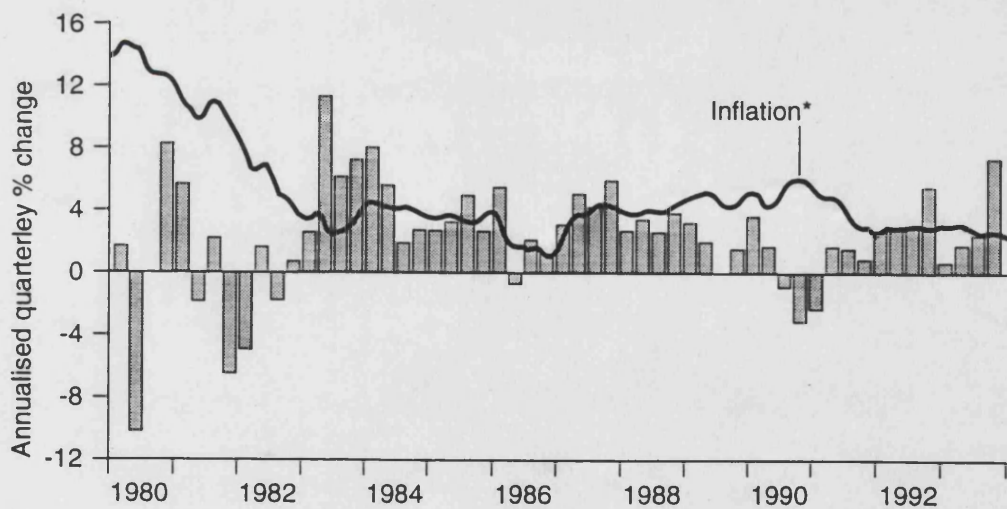


Source: Datastream

3.2 U.S. 1980-85.

Up to mid-1983, according to Summers (1984), "the U.S. suffered the most severe economic downturn of the post World War II period. Virtually every economic statistic associated with the production of goods and services declined further than in any previous recession. The downturn was also unmatched in its duration". U.S. real GDP showed marked declines up to mid-1983 (Chart 10.9) and capacity utilization fell to its lowest level since collection of the data began (Chart 10.10).

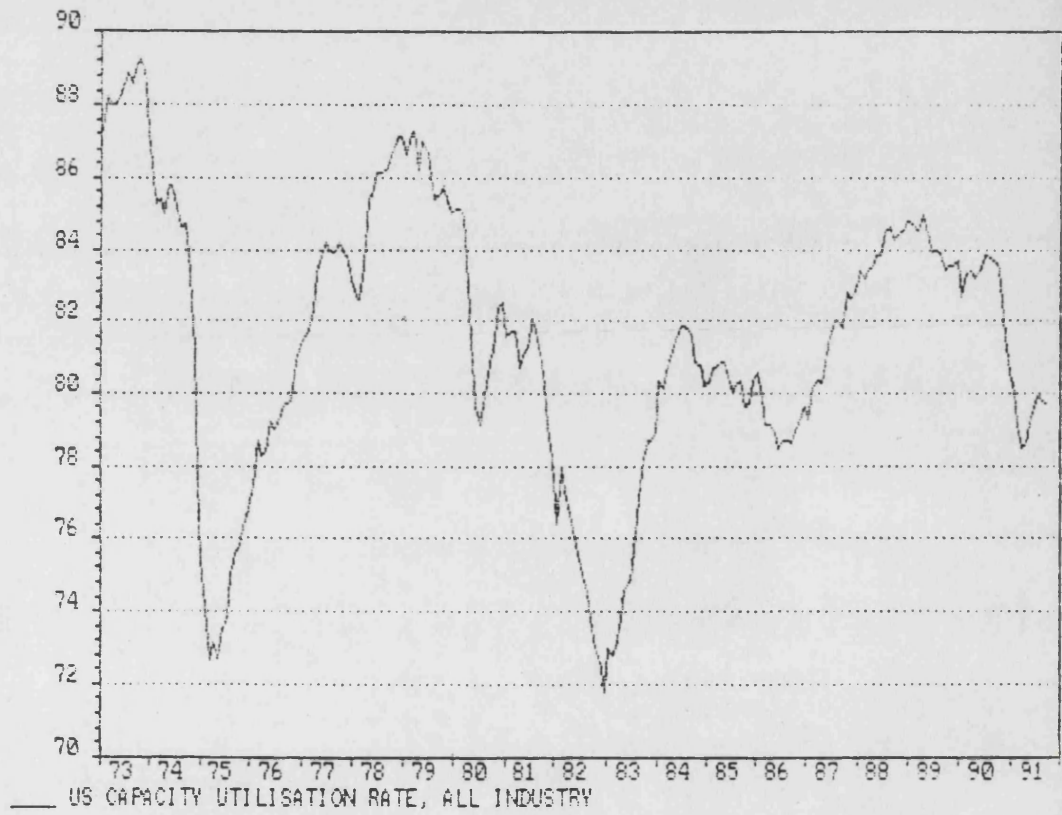
CHART 10.9
U.S REAL GDP & INFLATION



Source: Datastream / FT Graphite

*Annual % change in CPI

CHART 10.10
U.S. CAPACITY UTILIZATION



Source : Datastream

3.3 Germany following monetary unification 1990.

From October 1989, prior to monetary integration, an unofficial or "market" exchange rate prevailed between the DM and the Eastmark of between 5 to 7 Eastmarks per DM. This narrowed to 2 Eastmarks per DM in the few weeks before monetary integration in July 1990. At integration, the federal government chose an exchange rate of one-to-one⁴. If the "black market" exchange rate had been appropriate, then at the new official rate of exchange, the Eastmark was grossly overvalued.

Industrial production in the Neue Länder fell by 43% between July 1990 and February 1991. GNP of the Neue Länder fell 15% between 1989 and 1990 and fell by an even greater percentage in 1990-1991 (Wolf 1991).

The problem, however, was not merely one of a misaligned exchange rate with the DM. Additional factors were the loss of Comecon markets and a sharp rise in wages in the Neue Länder. The overvaluation in turn fuelled the preference among east German consumers for west German goods.

The extent of bankruptcy in the Neue Länder has been limited by government wage subsidies. Calculations by Akerlof et al.(1991) show that a wage subsidy of 75% would have been necessary to make the 88 most resilient conglomerate companies in the Neue Länder, employing 77% of the labour force, viable at their costs immediately following integration. The wage level needed to keep much of the Neue Länder industry afloat would have been 10% of that in the former West Germany. Schatz and Schmidt (1991) argue that even this estimate is probably too optimistic. Moreover, it does not even take into account the sharp wage increases that have taken place after monetary integration. The conclusion of the above studies is that the Eastmark was at least ten times overvalued at the exchange rate chosen for integration.

⁴except for household savings. These were to be converted at two Eastmarks per DM for savings above Eastmarks 4000.

Other reasons why the German government might consider the consequences of overvaluation in the Neue Länder and the transfer payments to finance it as a policy problem are principally fourfold. The German current account moved from a surplus of 5% of (West) German GNP in early 1989 to a deficit of 1.5% in the first quarter of 1991. Secondly, from a small surplus in 1989, a fiscal deficit of 4% of GNP emerged in 1991⁵. Thirdly, long term interest rates rose by 2 percentage points once monetary union was in prospect. 3 month short-term Eurocurrency rates doubled from around 4% in mid-1988 to 9% in 1991. Fourthly, the German chancellor promised ahead of the all-German elections in 1990 that taxes would not have to rise to pay for unification, but was forced to introduce "Unity" taxes⁶ as early as July 1, 1991. The higher taxes, being part of the cost of living index, raised German inflation. Political concern focused on the need for Germany to maintain high interest rates for several years to stem inflation.

3.4 Conclusions.

To bring the impact of the U.K. and U.S. overvaluations into perspective, U.K. and U.S. GNP is compared with that of a country whose currency was not overvalued over the period, namely Germany as a whole (since the Neue Länder only constituted a part). **Chart 10.11** indicates that the U.S. suffered a bigger output gap than the U.K. in 1981-83. At the time of the 1990-92 sterling overvaluation, the U.K. suffered a major output gap whereas Germany reached the peak of its cycle.

The above data merely confirms that total output deteriorated at times of currency overvaluation, but this can be considered to be coincidental without a model of how overvaluation affects output. Such a model then needs to be tested for fit with the actual pattern of behaviour that occurred over the period. For example, the U.S. suffered an output gap 1991-1993 even though the US\$ displayed prolonged weakness.

⁵In proportion to GNP, the overall German deficit in 1991 was higher than the equivalent figure in the U.S. during the Reagan years.

⁶comprising a 12 month 7.5% income tax surcharge and rises in state insurance and fuel taxes.

CHART 10.11
RECOVERY LEADERS & LAGGARDS - U.K., U.S. & GERMANY COMPARED 19

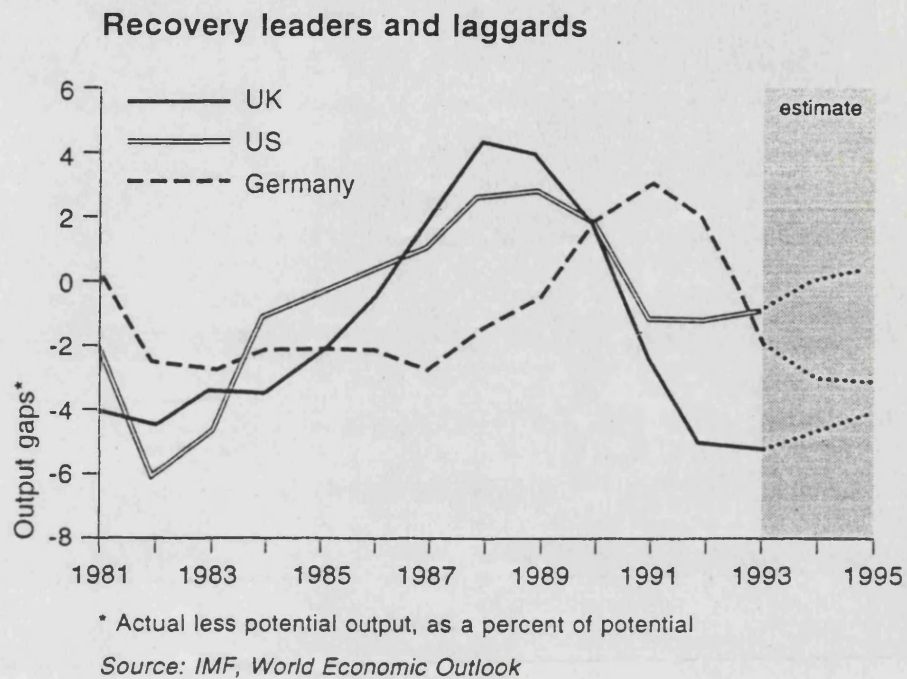
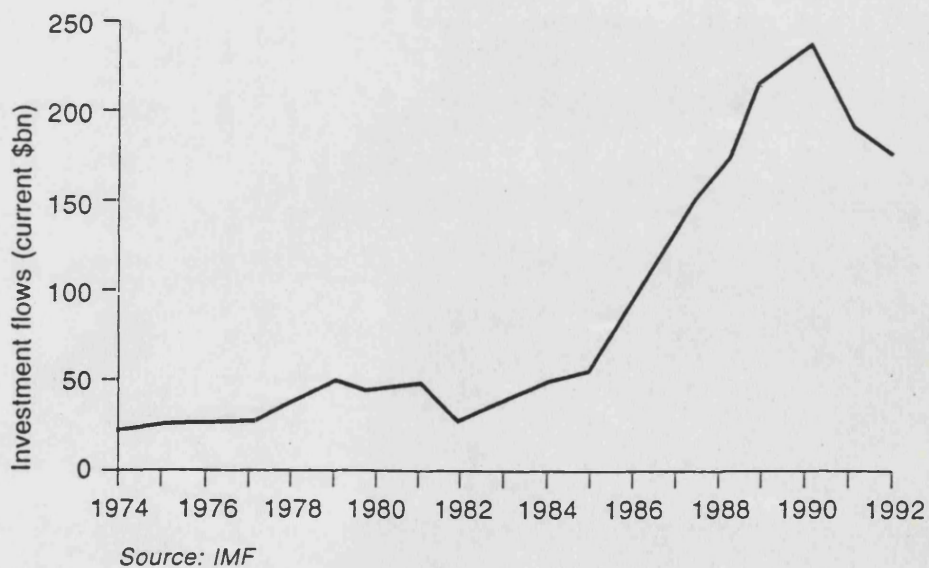


CHART 10.12
GLOBAL FOREIGN DIRECT INVESTMENT 1974-1992



Returning to overvaluation, Summers (1984:182) identified the channels whereby US\$ overvaluation led to a decline in U.S. competitiveness as follows. Monetary tightening and high real interest rates bid up the dollar and brought on recession. The burden of recession fell largely on investment and net exports. Despite the recession, real consumption rose in each of the years 1980-83. Consumption increased partly because the overvalued dollar stimulated import demand. At the same time the overvalued dollar reduced export demand and U.S. competitiveness. In consequence, unemployment rose to unprecedented heights. When recovery came, net exports continued to be very weak, with long-term implications for the balance of payments. This pattern is consistent with an overvalued dollar having negative effects on the rest of the economy.

3.5 The impact on FDI.

A conventional strategy to counter prolonged currency overvaluation is to shift production abroad, since foreign assets may be relatively cheap to acquire. Thus it can be hypothesized that increases in FDI should be observed at firm, industry and national level, depending on time lags. Data for outward FDI from the U.K. show that FDI reached a trough during overvaluations (1982, 1991):

TABLE 10.3
OUTWARD DIRECT INVESTMENT OVERSEAS BY U.K. COMPANIES, £M

1979	3,035
1980	3,391
1981	4,671
1982	2,122
1983	3,498
1984	5,813
1985	8,625
1986	11,798
1987	19,159
1988	20,915
1989	21,491
1990	10,108
1991	9,304
1992	10,139

Source: DTI Business Monitor MA2 1992.

Data is not net, i.e. it does not include inward direct investment into the U.K.

The currency misalignment in the Neue Länder was accompanied by massive inflows of

FDI from the former West Germany for political reasons. This confirms that the example of overvaluation in the Neue Länder is a special case. According to Siebert (1991) more than half of the Neue Länder GNP in the first half of 1991 consisted of transfer payments from Bonn. Wolf (1991) notes that this is the largest transfer programme, in relation to the income of the recipient, in history. The scale of the transfers roughly equalled the whole of Polish GDP. West German firms have nevertheless been reluctant to exploit the glaring imperfections in factor and product markets between the Neue Länder and West Germany by FDI⁷ and have serviced the Neue Länder market with West German production⁸. This confirms that currency overvaluation can act as a major inhibitor to inward FDI.

Data for global FDI is given in **Chart 10.12**. This shows substantial increases from 1985 to 1990. This suggests that there are a whole range of motivations for FDI (Julius 1990, Stopford 1993) and that avoidance of prolonged currency overvaluation is likely to be only one of them and a minor one at that.

To assess the impact of prolonged currency overvaluation on FDI, it is necessary to return to the firm and industry level. In the case-studies, it has already been noted that FDI was not practicable for Lesney and Jaguar. The fact that ICI engaged in massive FDI supports the expectation that prolonged currency overvaluation should lead to increased outward FDI. The evidence for ICI can be generalized to the whole U.K. chemical

⁷Possible reasons are that whilst investment is based on long-term time horizons, its location is subject to competing forces. The inevitability of significant market growth in east Germany in the long-term is not a sufficient condition to invest in the short-term. "East Germany's wages are 5 times those in Poland. The industrial capital stock of East German industry is worthless at these wage levels" (Wolf 1991). Additional inhibitors to inward FDI in the Neue Länder are uncertainty on property rights, poor infrastructure and an inadequate public administration.

⁸For example, in the optical lens market, Zeiss in the former West Germany preferred to see the original Zeiss firm in the Neue Länder go bankrupt and to increase production from its West German plant.

industry (Table 10.4)⁹.

TABLE 10.4
OUTWARD DIRECT INVESTMENT BY U.K. COMPANIES IN THE CHEMICAL INDUSTRY £M

1979	254	1990	1572
1980	112	1991	1569
1981	756	1992	1808
1982	245	1993	1821
1983	460		
1984	563		
1985	1474		
1986	1885		
1987	1551		
1988	2071		
1989	1599		

Defined as net investment analyzed by the industrial activity of overseas affiliates. It includes unremitted profits.
Source:DTI Business Monitor MA4, Overseas Transactions.

In the U.K. auto industry, the hypothesis that currency overvaluation would lead to increased outward FDI is confirmed for the 1979-83 overvaluation¹⁰, but not for the 1990-92 overvaluation. This apparent inconsistency is in line with the conclusion on global FDI, that it is motivated by a whole range of factors which can be both defensive and offensive. In the 1979-83 overvaluation, U.K. auto producers, except Rover, increased tied imports into the U.K. One reason why Rover broke the pattern is that the foreign-owned auto producers in the U.K. had the flexibility to import from foreign plant, whereas Rover did not.

During the 1990-92 overvaluation, net inward FDI in the U.K. auto industry occurred

⁹DTI data for FDI outflows come from DTI surveys only and care thus needs to be taken in its interpretation.

¹⁰Similar DTI data was not used for the U.K. auto industry because the increased imports into the U.K. need not have involved FDI and the U.S. parentage of two U.K. auto producers would not have indicated FDI from the U.K. even when the strategy of General Motors was indeed one of new FDI in Spain to service the U.K. market. Instead of DTI data, the shrinkage of U.K. capacity and increase in tied imports is more important than FDI.

on account of Japanese investment (see Thomsen & Nicolaides 1991). This does not invalidate the hypothesis that firms find it difficult, if not impossible, to manage the currency misalignment syndrome. One motive of Japanese firms' inward investment into the U.K. was to take advantage of cheap labour costs relative to other sources of skilled labour in the E.U., i.e. they were exploiting an underpriced asset, whilst benefiting from the E.U. market. Japanese firms were using their firm-specific advantages to create value in the U.K. at a time of an overvalued currency, suggesting that the Japanese firms had firm-specific skills which were superior to those of their U.K. rivals.

Thus new U.K. production by Japanese companies and greater U.K. production in place of tied imports by foreign-owned producers meant that the devastating effects on total U.K. auto production noted in the 1979-82 overvaluation were not repeated in the 1990-92 overvaluation. Thus the reactions of firms to prolonged currency overvaluation depend on a combination of circumstances and each situation of overvaluation must be analyzed independently.

3.5.1 Conclusion.

Recession appears to be an important factor in cutting investment plans and FDI, even though geographical diversification of production is one strategy to address the misalignment syndrome. Whether the increased outward FDI from the U.K. after 1982 is a delayed response to sterling overvaluation is uncertain. Evidence at firm-level in the case studies indicates that firms could not easily engage in FDI as a solution. For example, ICI's decision to dramatically reduce its dependence on the U.K. was not taken instantaneously, but only taken after a delay of two years in 1981 and it required a new chairman to make it. Thus it may take several years before cash comes onstream from an FDI made in response to prolonged currency overvaluation.

3.6 The impact on employment levels.

In all three cases of currency overvaluation, unemployment rose dramatically. In the

U.K., in the early 1980s unemployment, both in absolute numbers and as a percentage of the workforce, exceeded that seen in the inter-war period. In the U.S., the civilian unemployment rate rose to an all-time high. Branson & Love (1988) calculate that 1M jobs were lost in U.S manufacturing between 1980-85 directly as a result of the US\$ overvaluation. In the Neue Länder, registered unemployment rose from 2.8% of the labour force in July 1990 to 8.1% in May 1991 (Wolf 1991).

3.7 The impact on international monetary relations.

It can be hypothesized that economic policies which weaken U.S. manufacturing competitiveness, which also weaken the position of the U.S. in global economic rankings and which also contribute to the U.S. becoming the world's largest net debtor can be harmful to that country in terms of its power base in international relations. This question is considered by Gilpin (1987).

This section focuses instead on the inconsistency of currency overvaluation with the requirements for long-term stability in international monetary relations. In the U.K. and U.S., the currency overvaluations of the early 1980s cannot be construed as a shift by these countries either toward stable economic policies or to any new initiative toward creating a more stable world monetary order.

In the U.S., Reagan made no policy statement that the U.S. would be set on a stable monetary path and with a stable exchange rate as an objective. As Summers (1984:180) notes, there was widescale incredulity that Reagan's policies could be successful. Instability is indicated in terms of Kindleberger's (1970) norm that creditor status is a requirement for the maintenance of a hegemonic position in international monetary relations. The U.S. trade deficits of the 1980s changed the country's position from the world's largest creditor to its largest net debtor, reversing the results of 60 years of investment abroad in only 4 years (Krugman 1991).

Similar instability is exhibited in U.K. policy. The policy of drastic disinflation and high

real interest rates ushered in in 1979 was not part of any plan for sterling to become part of a stable exchange rate regime. If sterling had been in the ERM, the rules would not have allowed the dramatic real appreciation that occurred and other member states would have been able to request that U.K. overvaluationary policies be changed (Kaldor 1985).

The consequences of overvaluation in the Neue Länder are of major significance for the international monetary system, since high German interest rates and the non-revaluation of the DM in the EMS were a principal contributory factor to the official break-up of the narrow 2.25% bands and also the withdrawal of shadowing countries such as Sweden and Finland.

3.8 Conclusion.

The evidence confirms that retrenchment by individual firms in the case studies is replicated at industry and macro-economic level and also across countries. Governments should be concerned about the potential for prolonged currency overvaluation to cause the break-up of international monetary regimes.

4. CAUSAL FACTORS IN PROLONGED EXCHANGE RATE OVERVALUATION.

Given the adverse and often drastic consequences for GNP from currency overvaluation documented above, it is necessary to investigate why governments did not take measures to prevent the overvaluations from arising. As a starting point, this section investigates the causes of overvaluation.

4.1 Finance and economic theory and causes of exchange rate overvaluation.

In Chapter 2 it was noted that the finance theory explanation of currency overvaluation in terms of divergences from the parity conditions does not explain why these divergences arise in the first place. Economics would attempt to explain the divergences from the parity conditions in terms of divergences in monetary and fiscal policy across countries. This in turn does not explain why monetary and fiscal policies diverge.

The following taxonomy investigates the hypothesis that parity divergences can lead to currency overvaluation only insofar as government policy is permissive.

4.2 Shifts in commercial policy and currency overvaluation.

Commercial policy measures of governments can drive a wedge between world and domestic prices of the same goods (for attempts at quantification for the E.U., see Greenaway & Hindley 1985). Thus the PPP condition, that there is perfect arbitrage to ensure price equality, cannot hold. Richardson (1981) has demonstrated that tariffs and quotas can have effects on the real exchange rate.

Given that industrial countries tend to be committed to a liberal world trading order, it might be assumed that commercial policy would not be relevant as a cause for economic exposure. The Neue Länder instance is the exception, but in an opposite direction than that expected. Commercial policy had protected industry in the Neue Länder against superior western products. The sudden lifting of this protection came at the same time as monetary integration at an overvalued exchange rate. This enabled West German products to be sold in the Neue Länder at competitive prices. The sudden competition

from west German goods can thus be categorized as an external shock.

4.3 External shocks and currency overvaluation.

A purer example of an external shock assisting in giving rise to currency overvaluation is the Second Oil Shock in 1978. A dramatic rise in the price of a key raw material could raise the price of a country's finished goods and drive a wedge between its prices and those of its competitors. The difficulty with appraising the Second Oil Shock in this light is that the rise in world oil prices applied to industrial nations generally.

However, the U.K.'s self-sufficiency in oil in the 1980s eliminated the balance of payments constraint on economic policy-making which would otherwise have existed. The U.K. would have been free to cut interest rates to low levels to reduce the demand for sterling arising from the projected oil surplus. Instead, the U.K. decided to tighten monetary policy and interest rates were doubled. Accordingly, the Second Oil Shock cannot be seen as the cause of the U.K.'s exchange rate misalignment between 1979-83. In any event, the shock occurred in 1978, well before the monetary tightening ushered in by the change of government in 1979.

4.4 Divergences in monetary and fiscal policy across countries and currency overvaluation.

U.K. and U.S. policies in 1979 which led to divergences in monetary and fiscal policy were similar in their object to reduce the rate of inflation, but the strategies were different. The U.K. overvaluations were the result of monetary and fiscal tightening whereas the U.S. strategy was one of monetary tightening and fiscal laxity. Monetarism cannot be seen as the cause of the overvaluations since the Bundesbank has adopted monetarist policies over the post-war period, but the DM has not exhibited any period of prolonged overvaluation over the same period.

The case of the Neue Länder is dissimilar to the U.K. and U.S. cases in that the Neue Länder overvaluation was not the result of market forces bidding up the East German currency to parity with the DM. Instead, the creation of parity was by government fiat.

4.5 Conclusions.

In the three cases, government policy either played a causal role in currency overvaluation, or where it did not, governments could have adjusted their economic policies to prevent or curtail currency overvaluation.

5. GOVERNMENTS AS CREATORS OF CURRENCY OVERVALUATION.

Why governments played a causal role in currency overvaluation can be seen partly in the economic objectives and partly in the relative strengths of gainers and losers from currency overvaluation.

In the case of both the U.S. in 1979 and the U.K. in 1979 and 1990, the macroeconomic objectives became focused almost exclusively on reducing inflation, and in Germany in 1990 on reunification. In all three examples, opposition parties offered an alternative strategy (except in the U.K. 1990-92). Despite the overvaluations, electoral circumstances permitted the ruling party to be re-elected.

5.1 Gainers and losers from currency overvaluation.

The anti-inflationary policy that brought on the U.K. and U.S. overvaluations benefited those on fixed incomes. Overvaluation similarly benefited importers and, potentially, consumers of imported goods, except to the extent that recession in the misalignment syndrome curbed dampened consumption of imported goods. Losers include not only small firms without treasuries but also large U.K. corporations. Governments are also losers in terms of lost revenue under recession and the potential loss of votes from those who become unemployed, or who are dissatisfied with economic performance. If the prospect existed of hyperinflation, then it can be concluded that in the long-run, all were gainers by the anti-inflationary policies, but in 1979, hyper-inflation was not in prospect. The gainers therefore were rival firms in rival states with relatively stable real exchange rates.

The size of the market has an influence on the gains and losses from misalignment. Whereas U.K. firms were forced to diversify out of the U.K., the larger U.S. market yields a differing response. Foreign corporations whose exports to the U.S. are a high proportion of total sales have an incentive to engage in outward FDI to the U.S. The differing relevance of misalignment to governments is also indicated in the differing degree of dependence on trade:

TABLE 10.5
TRADE AS A % OF GDP, 1990, SELECTED COUNTRIES AND THE E.U.

U.S	16.7
Japan	18.0
E.U. external trade	18.6
Average external trade of E.U. member-states i.e. E.U. and extra-E.U.	46.2
Germany	50.1
U.K.	41.5

trade = sum of total imports and exports, net of import content of exports. Source:OECD

The U.S. can be seen as a gainer from prolonged overvaluation in the 1980-85 period,¹¹ since the U.S. external deficit was matched by surpluses in Germany and Japan. These surpluses made the U.S. deficit more easily financable. By contrast, in the east German overvaluation a decade later, Germany's move into both internal and external deficit put upward pressure on European interest rates. The U.K. was among the losers as the U.K. later put the pound into the ERM at an overvalued rate and had to sustain it at interest rates which prolonged its recession (Goodhart 1991a).

The ways in which actors in financial markets (banks and securities firms) can gain from misalignment whereas industrial corporations can lose is indicated in a comparison of portfolio managers and corporate treasurers. Firstly, the portfolio manager has full control over the management of the security portfolio, whereas the treasurer does not have full control of the bundle of assets that constitutes the firm. Secondly, the portfolio manager can both exploit and protect against currency trends by the selection of assets which are highly liquid and which have relatively low transaction costs. By contrast, the treasurer has no such flexibility owing to indivisibilities in the production process and high costs in switching production. Thirdly, a natural hedge can often be an elusive concept for a manufacturing enterprise, whereas a portfolio manager can rapidly construct a diversified portfolio and can also immunize it against currency risk.

¹¹not only because it could consume much more than it produced. The U.K. and Germany also gained to the extent that Reaganomics brought the world out of recession.

In terms of vested U.K. interests, the City of London has little incentive to lobby against prolonged overvaluation. Similarly, in industry, the U.K.'s comparative advantage is in pharmaceuticals, defence and luxury hand-finished goods (Porter 1990), i.e. all industries whose success may depend on non-price factors. In consequence, vulnerability to prolonged overvaluation is reduced.

To understand the main issues which led governments to allow prolonged currency overvaluation, it is necessary to investigate each case individually:

5.2 U.K.

Three principal reasons can be advanced to explain the government role in the 1979-82 sterling overvaluation. Firstly, the U.K. government did not have to face a general election for five years from 1979. Secondly, it won the 1979 election on an anti-inflationary platform. Its willingness to countenance retrenchment can be seen in terms of the failure of previous incomes policies to work and in terms of the need for a weapon, i.e. unemployment, to readjust inflationary expectations downwards. Thirdly, the opposition party was unpopular. A factor which could not have been foreseen in 1979, but which assisted the government's re-election in 1983, was the Falklands victory.

The reason why the government allowed the 1990-92 sterling overvaluation to occur stems from ineptitude, rather than a policy gamble. The government could no longer take an electoral gamble as it did in 1979 since an election was due by 1992 and the opposition was in a much stronger position. The purpose of joining the ERM was to lend credibility to anti-inflationary policy (Taylor & Artis 1988, Bank of England 1991a), but the exchange rate chosen to join in 1990 was overvalued, which necessitated high interest rates, thereby prolonging recession. The question is why the U.K. government chose an overvalued rate. It can be speculated that it believed a high rate was necessary since it could not forecast that U.K. inflation would ease so quickly. In this respect, membership of the ERM was highly successful in aiding U.K. anti-inflationary policy.

5.3 U.S. 1980-85.

Six major reasons can be advanced to explain why the U.S. administration allowed the overvaluation of the dollar in the 1980-85 period to occur. Firstly, U.S. trade as a percentage of GNP at 16.7% is a much smaller proportion than in most industrial countries and the political repercussions of overvaluation would accordingly be less. Secondly, the labour market in the U.S. is much more flexible than in its European competitors. This reduced the political repercussions of high unemployment. Thirdly, the preferences of the electorate had shifted in favour of lower inflation rather than lower unemployment (Summers 1984). Fourthly, the losers from US\$ overvaluation, i.e. exporters and import-competing industries, were in a small minority in relation to the numbers who perceived the overvalued dollar as positive. In the U.S., manufacturing firms hit by US\$ overvaluation were dispersed and heterogenous, rather than focused in electorally significant regions, and did not have the political weight to force a policy change at national level. The federal government could logically believe that automatic fiscal transfers and stabilizers were sufficient to ameliorate the political repercussions by the time of the next election.

Fifthly, the implementation of 'Reaganomics' tended to generate electoral support. Broadly, the implementation consisted, on the one hand, of a looser fiscal and a tighter monetary policy and on the other, a reform of the tax and transfer system in order to give greater incentives to productive economic activity. This proved popular for four main reasons. Reaganomics was synonymous to the electorate with tax reductions. Tax reductions were not matched by lower government spending, thereby facilitating strong growth in demand. The resulting deficits bid up interest rates, which in turn underpinned an almost doubling in the value of the dollar. Political imperatives can thus outweigh economic ones. Paradoxically, in the 1984 election, the "strong" dollar was perceived within the U.S. as a sign of the confidence of the rest of the world in the U.S. economy. Thirdly, Reaganomics was synonymous with higher consumption, facilitated by the lower relative price of foreign goods. Fourthly, Reaganomics was synonymous to the electorate with a stronger U.S.A. The deficit spending of the administration also did not detract from the electorate's perception of the U.S. as a stronger power, since this deficit

spending financed the U.S.'s military build-up.

Finally, Reaganomics could be sustained by U.S. "structural power" (Strange 1988), based on the unique U.S. power of seigniorage. The Fed, being less rigid than the Bundesbank, could have switched to a low interest rate policy to prevent the US\$ overvaluation, but it chose not to do so.

5.4 Neue Länder.

Three main reasons explain why the West German government ignored the advice of the Bundesbank¹² and proceeded with a one to one exchange rate for monetary integration. One is short-termism, that the government faced all-German elections in October 1990 and sought the support of the electorate in the Neue Länder¹³. Secondly, the objective was political integration, and political integration would not be achieved under a system in which workers in the eastern part would be paid substantially less than in the western part for identical work. A third reason is that the early forecasts underestimated the costs of a one to one exchange rate¹⁴.

Thus whilst political pressures forced east German firms to suffer massive currency overvaluation, this was politically more preferable than following the Bundesbank's

¹²The Bundesbank argued the case for the exchange rate to be based on economic fundamentals. Its case was supported by the West German economic research institutes and almost unanimously by the country's professional economists. Siebert (1991) notes that at the time of monetary integration, overall output per head in the Neue Länder was around one third of that in West Germany, but the corresponding figure in manufacturing industry was much worse.

¹³Chancellor Kohl promised in the election campaign that no East German would be worse off as a result of unification (FT:1.7.1991:16).

¹⁴The state secretary at the economic ministry at the time, Otto Schlecht, stated (FT:29.4.1991:4): "We deceived ourselves about the size and depth of the restructuring crisis. We...underestimated the effect of the shock of liberalizing overnight a command economy which had been barred from the world for 40 years."

advice¹⁵.

5.5 Conclusions.

The three major cases of currency overvaluation cited in this chapter are all the result of deliberate policy actions by government, since in Germany, an exchange rate which was not overvalued could have been chosen, whilst in the U.K. and U.S., interest rates could have been cut to prevent overvaluation. This conclusion would be weakened if any other examples of currency overvaluation existed which have not been caused by government policy.

In the late 1970s, US\$ weakness and a capital flight into the Swiss franc on the safe haven motive caused a sharp real rise in the Swiss franc. It could be argued that the Swiss franc overvaluation was not caused by Swiss government policy but by external factors, namely US\$ weakness. Indeed, the contrast with the U.K. and U.S. cases is that the Swiss government took measures, such as a new withholding tax, to curtail the Swiss franc overvaluation.

Common to all three cases is that electorates will generally not know what economic exposure is, or the implications of currency overvaluation. There is confusion as to its

¹⁵Industry in the Neue Länder constituted a very weak lobbying group. Its employees had expectations of West German standards of living, as confirmed by their electoral choice of the party offering the quickest route to integration, namely the CDU. The more hesitant SPD was routed in the first all-German elections. So long as the old regime of enterprise was maintained, then the expectations on the part of the electorate could not be secured. Direction would have to come from West German enterprise. The risk that overvaluation of the currency could deter West German industrial investment was not a factor in the election. It would appear to the electorate in the Neue Länder to be not in their short-term interests to lobby for an exchange rate that would keep their own industry viable. This highlights the complexity of currency overvaluation as a political issue. It is not a concept that politicians can expect the average voter to understand.

Thus whilst the risk existed that the CDU could lose the election by following the advice of the Bundesbank and the economics institutes, the strength of political support for a unified Germany meant that the election was unlikely to be lost by appearing generous to the east. Furthermore, the federal government, in its calculations ahead of monetary integration, believed that it could afford to pay for the consequences of a one-to-one exchange rate. In the interests of self-preservation, it could not afford to lose the election.

meaning even among those directly affected by it¹⁶. Thus it may appear that economic exposure is not a public policy issue at all.

¹⁶Thus the chairman of the U.K. state-owned vehicle producer, British Leyland, publicly lobbied the government to leave North Sea oil in the ground.

6. CONCLUSIONS.

Evidence is presented which confirms the hypothesis that the adverse impact on firms in the auto and chemical industries is replicated at the industry and macroeconomic level. Whilst it is acknowledged that there are potential gainers from overvaluation such as importers, the conclusion for many U.K. corporations is nevertheless a serious one - they must find strategic means of protecting themselves from the misalignment syndrome, particularly in view of the undesirability of recession. For importers, the adverse effects of recession may also be greater than the benefits of prolonged overvaluation.

Regarding the cause of prolonged overvaluation, it was found in the three major cases cited in this study that it arose as an indirect effect of government policy.

CHAPTER ELEVEN

CONCLUSIONS AND QUESTIONS FOR FURTHER RESEARCH

1. CONCLUSIONS FOR CORPORATE POLICY.

The corporate treasury's role is currently restricted to internal and external financial hedging and does not extend to strategic hedging. This thesis has strongly indicated the need for the proactive strategic management of prolonged currency overvaluation. The principal conclusion is that firms must generate product-market flexibility¹ and if they are not able to do so, the consequences are potentially serious.

A question for future research is the appropriate organizational form for strategic management of currency risk. Economic exposure can only be moderated by relocating production costs and by other corporate strategies which are beyond the control of the corporate treasury. Thus a new organizational form needs to generate flexibility by providing a means to focus on economic exposure management, whereas currently the corporate focus is primarily on transaction exposure.

It would be impractical for the treasury's role to be upgraded to determine product-market strategy, since the treasurer cannot be presumed to have a better knowledge than the heads of business divisions. Business divisions should not therefore have to account to the treasury for their decisions, and the treasury's role should therefore remain as a

¹Taking the case of Laker Airways in Chapter 1, the design of the business from the start should have been to establish a network of marketing outlets in N.America to match US\$ costs. Laker was however constrained in marketing strategy. Laker's strength was that its name was well-known in the U.K. but not in N.America.

service function. A service role is consistent with the tendency of the treasury to be risk averse.

There nevertheless remains the need for a strategic risk management focus within the firm, particularly if a continuation of the uncertainty in the U.K. in terms of both the risk of future currency overvaluations and in institutional features such as hostile takeovers is likely. Such a focus could take the form of an advisory board, or Currency Committee, which could formalize links for planning purposes (whereas no formal links may at present exist) between the treasury, corporate strategy department and the heads of business divisions.

Instigating a new organizational framework, however, is only a second-best solution. In Germany, corporations have tended to have a lower profile treasury than in the U.K. but German corporations in the case-studies have benefited from a lower strategic exposure to currency risk. Thus the first-best strategy for U.K. corporations may not be to introduce or upgrade the status of Currency Committees, but arguably to instigate reform in U.K. public policy. This is considered in the following section.

As it may not be realistic to conclude that firms can change public policy, the first-best strategy is not a solution. The solution for large firms is an upgraded organizational form of risk management. Small firms do not have the resources and options that are open to multinationals. If they cannot generate product-market flexibility - and it is not easy to change strategy, since not all firms together can switch to non-tradables - small firms have little other recourse than to bring pressure to bear on government exchange rate policy during prolonged currency overvaluation. However, there is little in pressure group theory or in practice² to indicate that there is any possibility, certainly in the U.K., of successful lobbying of government to change monetary policy in order to minimize business risks.

²see Appendix 5.

2. CONCLUSIONS FOR PUBLIC POLICY

The policy implications for governments are individual to each country but need to be researched within an international framework in order to examine whether national policies are globally compatible.

A question for research is whether prolonged overvaluation can bring benefits which outweigh the costs. A country which is the sole producer of a good which has a relative price inelastic demand and which has no other significant exports could, in principle, benefit from prolonged currency overvaluation. However, such a polar case is not a realistic policy prescription. One of the nearest examples would be that of Zambia, whose cash export is principally copper. Even though Zambia has a significant position in world copper supply, Zambia is a price-taker in the copper market and the world copper price is highly volatile, depending on the economic cycle and other sources of supply.

A second question is whether prolonged currency overvaluation brings benefits for anti-inflationary policy which outweigh the adverse effects on firms of the overvaluation. This is a separate question from one of the findings of this thesis, which is that the suddenness and sharpness of the change in government policy itself had adverse effects because it could not be managed by firms.

Given that a principal cause of prolonged overvaluation is government policy (Chapter 10), it would appear rational for firms to lobby to prevent it occurring in the first place. However, the finding in Appendix 5 is that corporate lobbying to change monetary and exchange rate policy is ineffective. Thus corporations which do not have the flexibility to protect themselves strategically have little protection in the event of overvaluation.

The conclusion for public policy is less serious - governments have pursued policies leading to prolonged overvaluation yet have still been re-elected. This suggests that a recurrence of prolonged overvaluation cannot be ruled out.

If corporations cannot collectively change government policy, then corporations have an interest in the establishment of an exchange regime which will keep government exchange rate policy in line with those of their principal international competitors. The principal exchange regimes of the twentieth century are investigated in **Appendix 4** to examine whether their operation and their international obligations are sufficient to prevent governments from pursuing policies which lead to prolonged overvaluation. It is found that currency overvaluation has occurred in all global exchange regimes this century. However, the magnitude and persistence of overvaluation, particularly in sterling, has been far greater under post-Bretton Woods floating than under fixed exchange rates. Thus the form and design of regime can be critical in preventing prolonged overvaluation.

In a world of completely free capital movements, market economists can argue that governments and central banks are not able to make independent decisions on the virtues of alternative macroeconomic policies. The logical conclusion of this is that governments are at the mercy of the financial markets and that discontinuities such as currency overvaluations will remain, with even a potential world government likely to experience difficulties, (such as that of the federal government within the single currency U.S.A.).

It was already noted in **Chapter 2** that a significant factor determining the direction of portfolio capital flows is the interest rate differential adjusted for exchange rate expectations. Governments have the power to adjust interest rates, which in turn affects exchange rate expectations. If, for domestic political reasons, a government does not cut interest rates to stem speculative capital inflows and thus prevent overvaluation, there is no guarantee that the foreign exchange market will value a currency appropriately based on export and import fundamentals. Ito (1988), Frankel & Froot (1986) and Takagi (1991) cite evidence that exchange rate expectations are not obviously rational. If these expectations are not rational, then the Chicago school hypothesis, that markets know best (Friedman 1953), loses validity. Indeed, Tobin (1982) and Dornbusch (1990, 1993) argue that capital movements have developed too much independence.

A question for future research is the public policy response to "irrational" exchange rate

expectations, since this response appears to be contradictory. On the one hand, the governmental role is proactive. Governments have, through the abolition of exchange controls, created a licence for currency speculation. Through the pursuit of divergent economic policies, governments also create the basic conditions necessary for lucrative speculation in currency movements. On the other hand, the governmental role is reactive and defensive. Governments sometimes seek to manage exchange rates, even when the prevailing regime is a floating one, eg. the Plaza and Louvre Accords. Yet where a semi-fixed exchange regime exists, such as the Exchange Rate Mechanism in the E.U., governmental attempts to defend a parity that the market decides is untenable create one-way bets for speculators³.

Governments have not attempted to regulate the foreign exchange market to prevent such speculation. This is in marked contrast to other financial markets⁴.

Given the determining role of governments in interest rate policy, what, if anything, can governments do to minimize the damage on firms that has been documented in this thesis? The principal lesson is that firms cannot manage discontinuities and that anti-inflationary policy must be gradual and not imposed in short, sharp shocks⁵. A question remains as to whether the self-imposition of an external discipline on U.K. governments can prevent the recurrence of prolonged currency overvaluation. To engender a more secure environment for U.K. corporations against other sources of financial risk, a further question of research is whether U.K. public policy should attempt to emulate the social and institutional features which reduce the vulnerability of German firms to financial instability.

A system for exchange rate management is needed that can assist in engendering stability

³ So lucrative has this speculation become that in the turmoil ahead of the French referendum on Maastricht, the Bundesbank revealed that it spent DM 60 bn in intervention in the exchange markets (FT 21.9.92/22).

⁴ In the bond and equity markets, for example, short trading of stock which the trader does not possess is regulated. Furthermore, after the 1987 stock market crash, U.S. regulators pinpointed portfolio insurance as the trigger for substantial price falls and promptly started to regulate portfolio insurance.

⁵see Chapter 10, sections 3 and 5.

in the world economy, rather than permitting freedom for instability. Thus is an external discipline on U.K. politicians more feasible via world monetary reform, or via monetary reform at the European level ?

2.1 Prospects for world monetary reform as a discipline against currency overvaluation.

Williamson (1985:63) notes that the present arrangements of exchange rate management at a global level are a "non-system". The world functions at present without a monetary constitution: there are no international rules governing the choice of exchange rate regime, of a peg, or of margins; there are no substantive international restrictions or pressures on intervention policy, or on monetary-fiscal policy; and there are no limits on the choice of reserve assets, or of reserve switching. Williamson also doubts that the markets can reconcile that which is deliberately uncoordinated. The precept of the "global monetarist" school and of gold standard resurrectionists are rejected on the basis of unrealistic assumptions, particularly on their assumption of no divergence from the international parity conditions. Further, no limit on global reserves can hope to coordinate national economic policies when the combination of high capital mobility and floating exchange rates makes the quantity of reserves demand determined.

Under the current non-system, for the U.K. to continue with flexible exchange rates means more of the same, i.e. freedom for the U.K. government to reflate and inflate ahead of elections, or deflate to reduce inflation without any regard as to whether sterling becomes overvalued or regard to the impact of prolonged overvaluation on U.K. firms. This lack of attention to the impact of currency overvaluation is not confined to the U.K.⁶ Indeed, governments have not learned from the previous examples of economic exposure in other countries. The prolonged overvaluation of the U.S. dollar from 1980-85 was followed by years of prolonged undervaluation to 1992. There are no international arrangements to prevent the U.S. government again embarking on policies which lead to a period of prolonged dollar over- or undervaluation. In the U.K., the government appears to have learned virtually nothing from the 1979-83 overvaluation since it

⁶eg. France and Germany in 1994/5.

deliberately chose an overvalued rate for sterling membership of the ERM in 1990-92⁷. Similarly, the policy discussions on monetary integration in Germany could have benefited from an understanding of the experience in the U.S. and U.K. some ten years earlier. The consequences -(eg.hysteresis)- of currency overvaluation, or of sharp discontinuities in exchange rate policy, must be taken into account in formulating policy.

The question then is what the macroeconomic policy should be which can avoid the discontinuities which are damaging at the corporate level⁸. At the international level, with free capital movements, some, such as the proponents of fixed exchange regimes, might argue the need for world government. However, the conventional response is to state that a world government is not a foreseeable option and to dismiss a fixed exchange regime as unrealistic.

In the absence of a world government, one proposal is the international harmonization and coordination (Steinherr 1987b), of national monetary policies (Frenkel et al. 1988, IMF 1988, Frenkel & Goldstein 1989, Claasen 1990) such that a stable low rate of inflation in a broad basket of tradable goods exists. When this condition is satisfied, the main cause of divergences in PPP is removed. However, convergence on low inflation rates is insufficient to produce stable exchange rates. Coordination of fiscal policies is also necessary, and difficulty in attaining such coordination is also delaying EMU.

This underlines two realities which suggest that a fixed exchange regime in Europe based on a DM-zone cannot be recommended at world level. Firstly, the divergence between countries in their preferred inflation/growth combinations and attitudes to policy imbalances remains. Indeed, the Bretton Woods regime was abandoned precisely to permit governments, particularly the U.S., to follow divergent inflationary paths without

⁷Whilst the U.K. is unlikely to repeat that mistake near-term, and whilst being out of the ERM has led to possible undervaluation in sterling, a risk exists that without an external discipline, policies may again be pursued which lead to overvaluation.

⁸Fiscal and monetary policy should aim to generate a steady expansion of total demand at a sustainable rate. Net export demand should grow fast enough to keep the balance of payments in order and domestic demand nicely balanced between consumption and investment (Godley FT:21.2.1995:21). However, this is only at a national level.

coming under a balance of payments constraint. Thus it is not feasible to obtain economic convergence via strengthening the role of the G-7 from one of mere cooperation to one of coordination. Cooperation has not led to coordination, partly because the commitment to manage exchange rates in the E.U. has not been shared by the U.S., which remains convinced of the merits of floating for the dollar⁹. The Plaza and Louvre Accords were merely an attempt to prevent the US dollar becoming even more grossly misaligned than it was.

A second reality is that the alternative to world convergence, namely for a single dominant country to provide a common nominal anchor, appears infeasible. A divergence in the power base underlying a multi-polar world exists with no foreseeable likelihood that the U.S., Europe and Japan¹⁰ will combine to serve as a collective hegemon¹¹ to a future world regime of fixed exchange rates. A continuation of flexible exchange rates between the three poles thus appears realistic, since the partnership between the three remains undefined.

In addition to monetary policy coordination, two additional policies, implemented at world level, have been proposed to stem speculation.

One is the introduction of target exchange rate zones (Williamson 1985, Williamson & Miller 1987). The purpose of target zones is to make divergences in monetary and fiscal policy across countries more transparent. If a zone is breached, then this serves as a signal to countries to correct policy imbalances. However, countries can and will simply refuse to adjust their economic policy if it suits them to do so. Even in the EMS, target zones failed because of the absence of a linked monetary policy.

⁹In 1973, floating suited the U.S. idea of monetary sovereignty but not that of E.U. member states (barring the U.K., which has also pursued policies leading to currency overvaluation). The notion that the U.S. cannot be relied upon is elaborated in Triffin (1983) and Strange (1985, 1987).

¹⁰Constitutional reform in the U.S. and Japan is necessary for international monetary reform. Strange (1990) suggests that the E.U. should overcome the lack of U.S. leadership by forging links with Japan.

¹¹The U.S. appears unwilling to manage the US\$ in a way that will provide a reliable store of value. Risk diversification into other currencies is thus encouraged.

Second is the introduction of a transactions tax on international capital flows (Tobin 1982) and on foreign exchange dealings (Dornbusch 1990). The rationale for such a tax is to address the bandwagon effects and overshooting of exchange rates which can lead to prolonged overvaluation. The central bank can similarly deter speculation by setting trading limits based on the bank's capital and by raising overnight interbank rates to a penal level. However, the Bank of England's regulatory concern is to protect the savings of depositors rather than to control trading in currencies¹². Further, the benefits of free foreign exchange markets occur unequally, giving rise to a free rider problem. The U.K.'s desire to maintain the largest share of the market is reflected in its supposed regulatory stance that the market will tend to shift to where it is least regulated and taxed.

2.1.1 Conclusion

Doubts arise as to the relative feasibility of implementing any of the above recommendations at world level and accordingly they do not fulfil the need for an external discipline on the U.K. government. Given the unlikelihood of obtaining U.S. agreement on coordination (Strange 1988:114, 235), the E.U. (i.e. the DM zone) has seemingly little alternative to pursuing a go-it-alone policy.

2.2 European monetary reform as a discipline against currency overvaluation.

With a single currency in Europe, it would become easier for the E.U. to negotiate with the other poles of N.America and Japan on means of regulating and taxing foreign exchange transactions. One reason to assume greater E.U. negotiating strength is that a single currency in Europe should become at least as attractive as the dollar, both as a reserve currency and for invoicing trade¹³(Goodhart 1991b).

¹²Why governments have not sought to regulate the foreign exchange market to the same degree as equity and bond markets is partly a product of history. At the time of the 1929 crash, which precipitated national legislation to deter short trading in equity and bond markets, foreign exchange markets were relatively minor on account of exchange control.

¹³Total E.U. GDP is greater than that of the U.S. The E.U. is a net foreign creditor and the world's biggest exporter. With a single monetary policy, the E.U. will also be home to the world's biggest financial market. Apart from these structural factors, the attractiveness of the European single currency will be its more stable monetary policy than the Fed's.

Regarding a discipline on the U.K., what was missing in Bretton-Woods and what is missing at world-level, but present at E.U. level, is the hegemony of Germany in the formation and operation of the European Central Bank. This provides the motivation for a fixed exchange regime at E.U.-level¹⁴.

It remains to be seen whether a single monetary policy - more explicitly committed to both anti-inflationary policies and to stability than the U.S. Fed - means no repeat of the U.K. soft-currency policies and reversals which have led to the U.K. stop-go cycle and overvaluations in the past.

A third feature which can protect U.K. firms from overvaluation within a monetary union is that given the importance of expectations in inflation, the costs of reducing inflation and wage rigidities are significantly lower if there is a credible policy commitment to doing so. Keynesians argue¹⁵ that a country needs to maintain the flexibility of exchange rate adjustment since otherwise the risk arises of differential cost pressures leading to the inflationary parts of a monetary union becoming depressed regions (equivalent to having an overvalued currency). However, if real wages are not flexible downwards, i.e. money wage illusion does not exist, then a devaluation is ineffective. The policy conclusion is that the U.K. cannot price itself back into world markets simply by devaluing¹⁶. This underlines the case that U.K. firms would be better protected from overvaluation under a single European currency. Similarly, a small open economy is unlikely to be a feasible currency area since it cannot, by varying its exchange rate, bring about changes in relative prices (Maynard 1974). This provides a further rationale for monetary

Strange disagrees that a European currency would become as attractive as the dollar, citing that most trade is in US\$, the U.S. is the largest open and rich market and therefore the premier attraction for MNCs, and that U.S. political stability is unchallenged.

¹⁴It is acknowledged that a hegemonic system is vulnerable to upheavals in the centre country, such as German monetary union. However, this does not invalidate the possibility that aligning to German monetary policy can serve as a discipline on the U.K. See Goodhart (1993a, 1993b). The U.K. could not politically withstand the discipline 1990-92 - but it had itself chosen an overvalued exchange rate for ERM entry. Whereas France could politically withstand the discipline, deflation has dampened employment levels.

¹⁵For example, Feldstein (1992).

¹⁶The period since sterling's departure from the ERM in 1992 is exceptional in U.K. history in that the real depreciation has not been erased by higher U.K. inflation.

integration.

Further research is needed on the main risks, at the level of the corporation, from monetary integration. These risks relate principally to the strategy for integration and the time period over which this strategy comes into effect. Instead of monetary integration conventionally occurring as a crowning process to a long period of economic integration¹⁷, the Maastricht strategy (Delors 1989a:12) is monetary convergence as a tool for achieving economic convergence (and this as a means to political union). As economic convergence requires that poorer regions grow faster than the center, the question is whether monetary convergence will worsen regional growth rates and increase economic disparities. The answer depends on how quickly the structural advantages to the periphery from monetary convergence listed above can take effect. The arguments which suggest that the process will be slow are principally twofold.

One is that if the periphery's capacity and productivity is too low to compete effectively with the center economies, then deflationary policies will place a greater burden on the periphery than on the centre.

Second is the process of commercial momentum, that firms in the center increase their advantage. This is because firms in the center cannot relocate to where factors may be cheaper in the periphery because the required specialist personnel may not be available in the periphery (Porter's "cluster effect").

Can the pronounced segmentation in product and factor markets be more quickly broken by not having a single monetary policy than by having one ? Collignon (1990:216-236) argues the case that with a credible monetary policy, risk premia on interest rates in the periphery would fall and, in spurring economic growth in the periphery, reduce the significance of labour immobility (Delors 1989b). This would be a difficult and lengthy

¹⁷The desirability of political and economic integration (as per the U.S. example of monetary integration) is acknowledged, though monetary integration existed between the U.K. and Ireland without political integration. This lasted until the U.K. embarked on policies leading to prolonged overvaluation in 1979.

process in a multicurrency system¹⁸. Thus contrary to the conventional doctrine, it is not the tight monetary policy of the center which prevents the periphery catching up with the center, but the laxities in monetary and fiscal policies in the periphery, which are the cause of the periphery's high hierarchy premium¹⁹ (Collignon 1990:227).

What Collignon omits to add is that it is not so much the difference between the expected profitability of investment (Keynes' marginal efficiency of capital) and the nominal interest rate which determines the level of investment in the periphery. Instead, firms plan and invest ahead if they see secure market growth for the output of the investment. This study has stressed that U.K. overvaluations and the accompanying recessions represent major discontinuities in which firms cannot plan and invest for secure market growth. For this reason, if firms came to perceive that a single European currency removes the historic U.K. stop-go cycle, an incentive exists to exploit the differences which give rise to the pronounced factor and product market segmentation in the E.U.

Thus factor and product market divergences can be more effectively arbitrated away via a stable macroeconomic policy from monetary integration rather than via the E.U. policy to remove barriers in financial markets.

Thus the case for monetary integration as a means of preventing exchange rate overvaluation in the U.K. is political in that it writes a credible anti-inflationary policy and monetary stability into the U.K. constitution. Melitz (1988) argued that the high-inflation members obtain benefits of increased monetary discipline, while the others experience improvements in their international competitiveness. However, for the high-inflation members, the gains from membership depend on a variety of factors whose net effect is uncertain (Melitz 1988) .

¹⁸This is because the structural determinants of the "currency hierarchy" may persist even with a sound economic policy for a long period, as it takes up time to build up trust and confidence in a specific currency.

¹⁹The external value premium expresses the utility of either holding liquidity or financial assets in the form and denomination of a specific currency. It expresses the foreign currency substitution effect. The relative advantage of a higher external value premium is called the hierarchy premium (p.26).

One uncertain effect is the risks to U.K. firms from cost-push inflation and labour immobility. The determinants of the labour market, for example, are not amenable to economic analysis so much as to socio-political analysis. Space does not permit an analysis of comparative risks to U.K. and German firms from differing socio-political factors bearing on inflation²⁰.

If the U.K. rejects the European option, feasible strategies for generating the necessary discipline on government economic policy are limited. The constraint of the foreign exchange market is the creation of "risk premia" on interest rates. But this has not constrained the U.S. and U.K. governments, even though it raises governments' borrowing costs.

Financial market disintegration (i.e. divergences from the neoclassical equilibrium parity conditions) was clearly in the interests of both the U.S. and U.K. governments, but the ensuing currency misalignment was not in the interests of domestic corporations. Thus, if it is not foreign exchange markets which act as a discipline on governments²¹, what recourse do corporations have to prevent the exchange rate misalignment brought about by go-it-alone policy stances? Evidence is presented (Appendix 5) that corporate power is weak and fragmented. If the corporate voice alone is not enough to influence the U.K. government, an additional ingredient in the E.U. is the political pressure to complete the Single Market via monetary integration. The imperative of product market integration is tending to dislodge financial market disintegration within the E.U. By the same process, the soft currency policies of countries such as the U.K. are being dislodged by the triumph of hard currency policies under German leadership.

²⁰This warrants separate dissertations in industrial relations and in economics.

²¹Dornbusch (1993:101) nevertheless asserts that the disciplining device in a tri-polar world is extreme exchange rate movements and that this is the best system to coordinate the blocs. Brittan (1994) concludes that since the 1987 stock market crash, markets behave in such a way to make inflationary policies to stimulate an economy difficult to pursue, whatever the urge on the part of governments to do so. The check operates through two principal channels. One is via a wealth effect, when a collapse in the value of bonds reduces the propensity to spend. Second is via an inhibitory effect on monetary policy, since interest rate cuts when the market expects a long-term rise in rates are unlikely to have any worthwhile stimulative effect.

A second policy direction for the U.K. is to at least match the measures inherent in German public policy which could improve the capability of U.K. firms to withstand financial shocks. It is not feasible to legislate to emulate all the factors noted in Appendix 6 which assist in protecting German firms from financial shocks.

One reason is that financial market regulation, in theory, is the prerogative of the E.U. given the agreed goal to create a single market²². The proposed E.U. regulations²³ which propose removing barriers to takeovers have focused only on removing technical barriers, leaving the structural barriers in Germany in place (Jenkinson 1992). This has the effect of perpetuating the protection of German firms from hostile takeover. The vulnerability of U.K. firms to takeover would remain and the incentive for some U.K. firms to make high dividend-payout ratios to protect themselves from takeover would also remain.

A second reason why the U.K. cannot effectively legislate is because many of the factors shown to be beneficial to German firms are structural and arise from social and institutional rather than legal forces. Positive aspects of German bankruptcy law and late payment could nevertheless be transferred to the U.K. It would be less easy for the U.K. government, without grass roots support, to legislate to change U.K. accounting practice to the German model. It would be even less easy to change structural factors in the U.K. which favour a free market in corporate control. One such structural factor is the sheer size of the U.K. equity market in relation to GDP compared to Germany. Nevertheless, so long as the government acknowledges the beneficial effects on U.K. firms of promoting the interests of their long-term stakeholders, then it can elect to arbitrate on hostile takeovers on the basis of pre-agreed criteria of corporate expenditure on research and training, for example.

²²The regulatory process of creating financial market integration in the E.U. is outlined in Neven (1992). In terms of the definition by Oxelheim outlined in Chapter 2 above, the Commission's proposals come nowhere near to creating financial market integration and are merely an attempt at capital market integration.

²³These are the "Thirteenth Directive on Company Law, Concerning Takeover and Other General Bids" and the "Proposal for a Regulation on the Statute for a European Company". However, the latter has never been adopted or implemented.

A second approach is to recognize that many U.K. corporations are dependent on retained earnings, not on the stock market, as a source of investment funds. Public policy measures could then be taken to assist U.K. companies to abandon the stock exchange as a means of raising capital²⁴. Such measures could be incentives to go private, or incentives to ensure that only a minority of shares are actually traded, thereby serving to reduce the pressure for high dividend-payout ratios.

It is reasonable to assume that U.K. policy to emulate the German insider model should not be piecemeal or partial. It remains unproven that factors which promote corporate success in a German business culture would do the same in a U.K. business culture. For example, if the U.K. legislates against hostile takeovers, a mechanism for the correction of managerial failure will not exist unless the U.K. also legislates to put in place the bank mechanism that exists in Germany for correcting managerial failure. However, the latter would be difficult to legislate since it depends on cultural factors which have existed in Germany for at least a century and which cannot be introduced into the U.K. overnight.

2.2.1 Conclusion.

International monetary reform can feasibly aid in preventing exchange rate overvaluation and as far as the U.K. is concerned, the more feasible form of regime change is at E.U. level, not at world level.

At present, U.K. policy emphasizes monetary sovereignty, no commitment to EMU, and is supportive of the U.S. short-termist model of a free market in corporate control and of the rights of shareholders over stakeholders.

This thesis finds that U.K. monetary management was a disaster for the U.K. case-study corporations in that it produced prolonged currency overvaluation; and that it is necessary to address a root cause of U.K. currency overvaluation, namely that of U.K. economic policy-making. Given the reluctance of the U.K. to legislate in an independent central

²⁴The proportion of corporate investment financed by new issues is abysmally low at approx. 4% (Wadwhani 1987).

bank²⁵, it appears that the most realistic hope of removing control of monetary and fiscal policy from U.K. politicians will be the pressure among fast-track E.U. member states for a European central bank²⁶. Thus corporate treasurers are entirely logical to be in favour of EMU; but that EMU is not a total solution and that public policy to improve competitiveness would be more effective by focusing on financial risks in addition to currency risk. To create a similar risk environment for corporations in the U.K. as in Germany requires not only stability in macroeconomic policy but also legal and institutional changes and changes in socio-cultural norms in the U.K. U.K. norms largely perceive a company as a capitalist enterprise, but the comparison of U.K./German corporations in the case-studies underpin the Cadbury conclusion in favour of a shift toward the continental European view of the enterprise as a coalition of interests and a partnership between capital and labour²⁷.

A quick route to the creation of a similar risk environment is via increased U.K. policy convergence with German/E.U. norms. E.U. policy on financial market integration safeguards the German capital market model, i.e. security from hostile takeover. U.K. participation in monetary integration offers the prospect of removing the threat of currency overvaluation from U.K. firms. It could then be a matter of time for U.K. social norms to adapt to those of the continental model and provide a means for attaining long-term stability in the firm's planning environment.

Without such changes, the conventional self-imposed restriction of the corporate treasury role to financial rather than strategic hedging - and the failure to institutionalize proactive strategic hedging elsewhere in the firm - will tend to reinforce the higher risk environment facing U.K. firms compared to their German and continental rivals.

²⁵The case in favour of an independent central bank in the U.K., plus the arguments against, is made in Fischer (1994), though the political analysis could be upgraded.

²⁶A caveat to the case for a European central bank is the essential need for it to maintain a broadly based political coalition in support of its counter-inflationary policies (Goodhart 1993a). The risk is that such a coalition may be weaker when other countries are added.

²⁷Cadbury, chairman of the U.K. committee on corporate governance, FT 3.6.1994.

3. CONTRIBUTION OF THESIS

3.1 Findings.

The principal contribution of this thesis is a demonstration that even large corporations and MNCs cannot manage prolonged exchange rate overvaluation²⁸.

Previous studies (eg. Walsh 1986:123) have concluded on a priori grounds, or on the basis of surveys, that economic exposure presents a major problem of management. This thesis demonstrates for the first time by means of case-study of actual corporations that the misalignment syndrome can substantially contribute to withdrawal from a business and even corporate failure. Further, whereas models of economic exposure alone cannot adequately capture competitors' reactions, this study has included a comparison with German competitors. In both the auto and chemical industries, German rivals were able to improve their competitive position relative to the subject U.K. firms during sterling overvaluation and US\$ undervaluation²⁹.

Inherent in such a demonstration is evidence that financial instruments provide scant protection in the face of prolonged exchange rate overvaluation. In consequence, the role of the treasury, which is responsible for external and internal financial hedging, is limited.

Evidence is also provided to rebut the assertions of Capel (1991³⁰), George & Schroth (1991)³¹ and Mello & Parsons (1992) that firms can simply increase, decrease or switch production in various currency zones in order to obtain advantage from changes in real

²⁸Previously it was generally believed that only small enterprises would not be able to immunize themselves against exchange risk since they do not have treasuries or specialist personnel who are experienced in using risk management instruments. All the case-study firms in this thesis had treasuries, with ICI's treasury being in the highest league of sophistication.

²⁹Since the EMS realignments of 1992, currency overvaluation has now become a problem facing German firms.

³⁰p.5 & conclusions.

³¹who assert that firms "can avoid the negative effects" of foreign exchange risk.

exchange rates. Instead, it is found that the suddenness of overvaluation and the difficulty in forecasting its duration prompted a response of massive cost-cutting in all the subject firms. That the Jaguar and ICI case studies are not an aberration is confirmed by similar developments in the U.K. auto and chemical industries.

The case studies thus qualify the conclusions of Blin et al (1982:4) and de Lattre (1985:71) that firms have found reasonably satisfactory answers to the risks of floating. Some have, but certainly not most, in cases of prolonged overvaluation.

A fourth contribution is a comparison of treasury hedging between competing firms in two industries in the U.K. and Germany. Despite the similarity in treasury hedging in focusing on transaction exposure (Herrmann 1988, Beck 1989, Glaum & Roth 1993), an interesting finding is that a wide difference in hedging performance can exist. This is illustrated in how currency movements affect the U.K./German competitors differently. The difference can arise from differing vulnerability to and management of economic exposure. This can stem from German rivals having a more flexible product-market strategy. Not only are U.K. firms subject to much wider swings in real exchange rates and to exchange rate misalignment, but also the structure of the selected U.K. businesses in terms of their currency risk profiles is much weaker compared to that of their German competitors³².

Remedying the disadvantage of the U.K. firms requires action on two fronts. One is on the causes of periods of prolonged currency overvaluation and the other is on reducing the vulnerability of the businesses to economic exposure.

On the latter point, given the finding that responsibility within the corporation for economic exposure management is diffuse in both countries, the much lower vulnerability of the German competitors to economic exposure can be concluded to be the product of

³²There are, of course, U.K. companies and industries, such as pharmaceuticals, which may have more balanced currency risk profiles than their German competitors. Exceptions to the generalizability of the case studies are considered in Chapter 9. Other favourable U.K. comparisons with Germany are in retail, food and drink, and insurance industries.

accident rather than design. Further, U.K. management in the ICI and Jaguar case-studies did not indicate recognition that the structure of their business in terms of their currency risk profile was far more vulnerable than that of their German competitors. They accordingly did not monitor the currency vulnerability of their German competitors, indicating the urgent need for management education on the topic.

Regarding the causes of prolonged overvaluation, a fourth contribution of this study is to bring the role of government policy into the forefront as a major actor in the currency environment facing the firm. Previous writers such as Walsh (1986), Capel (1991) and Holland (1993) have regarded the currency environment as extraneous and given. Early writers on the policy implications of the 1980s phenomenon of massive shifts in capital flows stressed the constraint of such flows on government policy³³. The findings of the specific cases of overvaluation in the U.S., U.K. and former GDR of this study confirm the opposite conclusion. This is that national policy autonomy can actually be facilitated by the combination of capital market liberalization and divergences from neoclassical equilibrium in financial markets (i.e. non-integration of financial markets). Thus in the U.S., the Reagan administration was able to adopt an independent policy of Keynesian expansion without an outflow of capital, without a withdrawal of credit and without an inflationary collapse in the dollar. This is because financial market disintegration meant precisely that U.S. policy autonomy could be sustained via interest rate differentials, i.e. the U.S. was able to run an independent monetary policy without reference to any other states. This is true only of the U.S., but the first Thatcher government deliberately, (though was obliged to), exploit divergences from neoclassical equilibrium to sustain and intensify its restrictive policies³⁴. Germany could pursue Keynesian deficit financing to

³³For example, Helleiner (1989) writes (though referring to Canada and the U.K.):
"...one of the goals of the Bretton Woods agreement - that of promoting policy autonomy for each nation - has been undermined by the internationalization of finance...
...By constraining U.S. policy autonomy, undermining national Keynesianism" (p.20).
"...the very size and quickness of the global financial flows has turned the markets into a modern equivalent of the gold standard...they discipline states, forcing them to maintain economic policies which conform to the needs of an integrated world economy" (p.22).

³⁴An asymmetry between the responses of financial markets to restrictive and expansionist policies, to large and small countries and to governments of differing political shades clearly exists, since the Mitterand attempt in 1983 to create a Keynesian boom was thwarted as risk premia on French franc-denominated assets were bid up to levels which thwarted expansion.

pay for integration at an overvalued exchange rate by raising interest rates to attract foreign capital.

The notion that all governments are always at the mercy of the foreign exchange market is therefore not valid from the U.S. example of overvaluation cited in this thesis. The U.S. and U.K. cases are concerned with the threat of speculative capital inflows, the opposite of the policy problem facing the French government in 1982-83³⁵. The evidence does not support the view that portfolio capital can flow into a currency and that governments are powerless to react or prevent long-term overvaluation in their currencies. Portfolio capital moves in response to interest rate differentials adjusted for risk and this risk includes expectations of future exchange rate movements. Governments have the power to reduce interest rates if they seek to prevent overvaluation of their currencies. The constraints on this power should nevertheless not be underestimated, as exemplified in Japan in the early 1990s in view of its other objectives, such as anti-inflationary policy.

Regarding the damage created by overvaluation, neither the case-study firms nor their pressure groups could influence U.K. exchange rate policy. Further, the finding from a survey of U.K. treasurers is that they support the need for an external control on U.K. economic policy, such as monetary integration in the E.U. However, the (direct) contribution of corporate treasurers to monetary integration is limited.

The contribution of this study to the finance literature is to document the decision-making process whereby corporations in three industries attempt to manage currency misalignment. The significance of empirical research into decision-making processes is put into perspective by D'Ambrosio & Hodges (1988:386-387). In their conclusion on "what we do and do not know about finance", they head the list of what we do not know as follows:

"We know that finance managers make financial decisions but we do not know precisely how they make them. We know how they should make them; but the process they

³⁵Markets may respond perversely to both higher and lower interest rates.

actually use eludes us, especially when it comes to strategic financial planning".

For example, this study finds that instead of consciously creating a natural hedge, or trying to reach such a match incrementally, firms base their decisions on acquisitions and new business possibilities predominantly on criteria of market competition. Even where currency considerations were important, there is evidence for the sample firms that currency factors were (nevertheless correctly) considered only as one out of a number of other market factors.

The contribution to the international business literature is to underline the practical limitations of portfolio theory as the basis of strategy for firms to overcome currency misalignment. The reality is that the conventional model of the global firm is flawed, since a natural home-country bias, in conjunction with various constraints³⁶, hinders companies' efforts to become global. Further, conglomerate companies cannot be advocated as a solution, given the problems³⁷ of managing diverse businesses. Thus if the 1950s literature of product-market strategy is myopic in not being able to deal adequately with prolonged currency overvaluation, the evidence of the case-studies underpins three other conclusions. Firstly, they demonstrate that U.K. firms found themselves floundering in a risky environment under emergent strategies (Mintzberg 1990a). By contrast, German rivals in the case-studies were able to take strategy in their

³⁶These include increased bureaucracy; the need to produce individually for specific markets to meet local tastes; and that the required level of scale varies not only between industries, but also between the various businesses within each industry. Thus the scope of a global firm can be too broad. It may be geographically diverse, but in some or all of its various businesses it may be too small to build up leadership positions.

³⁷Problems of conglomerates include firstly, creating a synergy between diverse businesses and, secondly, that geographical diversification for conglomerates is limited. Outside the U.K., conglomerates have only found it possible to pursue takeover strategies in the U.S., owing to the similar stock market culture.

Further, factors which favoured the growth of U.K. conglomerates in the 1980s are losing validity. In the 1980s, conglomerates could issue paper on a high P/E ratio to buy companies on a low P/E ratio. Conglomerates could generate cash from the acquisitions to repay debt by strict financial controls, exploiting pension fund surpluses, and exploiting accounting loopholes to create smooth earnings growth histories. Conglomerates have tended to pay a premium for acquisitions, but given investor recognition that takeovers cannot generate instant returns, there are few long-term benefits for shareholders in the acquiring companies.

stride with the sense of mission that has been enunciated by Hamel & Prahalad (1989). Secondly, it suggests that globalism is less appropriate as a model for a single firm to achieve than one of achieving globalism by creating a network of strategic alliances³⁸. One form of this is exactly what ICI and its German rivals are doing in swapping parts of their businesses. Thirdly, the U.K./German comparison underpins the benefits of "architecture", i.e. relational contracts (Kay 1993) as a foundation of corporate advantage³⁹ and, contrary to Porter, it suggests that strong domestic competition is not necessarily a source of domestic competitive advantage, other things being equal, since the U.K. economy has a poor trade-off between competition and investment (Helm et al 1991).

3.2 Application of research.

The implications of the research findings for corporate and public policy are summarized in sections 1 and 2.

One application of the case studies is as training material for future treasurers, since there are currently no texts which demonstrate how the conventional orthodoxy of external hedging can be inadequate. Similarly, there are no texts which indicate the consequences of this inadequacy for the firms concerned. In particular, the slowness in adjusting product-market strategy to real exchange rate changes, or the impossibility of making changes at all, is not part of treasury training, since it is "believed" that adjusting product-market strategy is not the role of the treasurer. If it is the role of the corporate strategy department instead, then improved and formalized channels of communication need to exist between the two departments and the business divisions.

³⁸However, the inability to manage prolonged overvaluation may mean that it is impossible to make a strategic alliance and the firm fails, eg. Lesney; or where the firm has a valuable asset such as Jaguar's brand name, a takeover, not a strategic alliance, is a necessity.

³⁹However, U.K. firms are not going as far as their E.U. rivals in holding each other's shares as cross-shareholdings and having representatives, as suppliers and purchasers etc., on each others' boards.

4. QUESTIONS FOR FUTURE RESEARCH.

This section focuses on seven directions for future research which are indicated by this study.

4.1 Organization theory.

Given the need for product-market flexibility, a significant question is how flexible the firm can or should be. The answer is essentially individual to each firm and it would be a valuable exercise for firms to conduct.

On the cost side, further information is needed to assess how much of a firm's output is vulnerable to prolonged currency overvaluation. Full data is not available on the extent to which the percentage of sales in any market may be accounted for by exports, or by local production, or even whether firms export from local FDI. In the ICI case-study, Hoechst provided the fullest information, but the information provided by the other chemical companies is incomplete.

Given the finding that responsibility for economic exposure management, i.e. the strategic management of currency risk, within the firm is diffused, the primary objective is to investigate how to institutionalize responsibility for it. Following the Allied (Lyons) Domecq debacle, the Association of Corporate Treasurers (1992) has issued guidelines for outside investors to be able to judge how sophisticated a firm is in its currency management. It is notable that these guidelines do not include a scrutiny of how economic exposure is managed. All they are are a means of checking that glaring gaps on account of management negligence do not exist. These possible gaps are in the management of transaction and translation exposure and in the effectiveness of financial instruments used to manage these exposures. Indeed, the purpose of the guidelines is merely to allay fears among stock analysts and investors that the lack of disclosure on currency management practices could lead to another case of misinformed profits forecasts and a falling share price on the scale of the Allied Domecq debacle.

If full disclosure on currency management were available, the actors who would be

interested in such information - and who could act as tools for institutionalizing responsibility for economic exposure management within the firm - are four. These are the executive and non-executive directors (managing and supervisory board in Germany), the Currency Committee and the Audit Committee. The two-tier boards in both countries do not have close and detailed knowledge of day-to-day transactions in the treasury. To facilitate division of labour in decision-taking, responsibility has to be delegated to the treasury, which operates within guidelines laid down by the board. The Audit Committee would be responsible for ensuring compliance to these guidelines. The difficulty in control is that no evidence was found that any of the subject companies had formulated written guidelines for economic exposure management to the treasury or to any other locus of responsibility within the firm. Executive directors would be responsible for the overall performance of the firm, including that of economic exposure management. The executives would need to have at their disposal the information necessary to enable them to manage prolonged overvaluation. However, the managing board is unlikely to obtain this information from the treasury if the treasury is not assigned the task of strategic management of currency risk. It is even less likely that the non-executives (or supervisory board) would have the information which would permit them to challenge executive policy. A difference between the U.K. non-executives and the German supervisory board is that members of the supervisory board comprise bank⁴⁰ and trade union representatives whose appointment does not depend on the personal favour of the head of the managing board. Common to both U.K. and German non-executives is that for them to be able to monitor the performance of the company in managing economic exposure, they would need information on currency hedging, both external and strategic. The source of such information is likely to be the accountants/internal auditors and the Currency Committee. However, in both the U.K. and Germany, contact between the non-executives and internal bodies is channelled through the executive/managing board, yet it is the management which the non-executives are supposed to oversee.

The Currency Committee is a relatively recent institution in firms and has proliferated

⁴⁰If bank-appointed directors do not have the information on hedges which go wrong (or which were never instituted), it has significant institutional importance for Germany. The role of the banks in the correction of managerial failure in Germany is indicated in Appendix 7.

in both the U.K. and Germany. As little is known about these committees, a first step in formalizing economic exposure management within the corporation is to research the role of these committees in a large sample of organizations. For example, did BMW's Currency Committee have a determining role in BMW's decision to set up a production plant in the U.S. and if so, how did it come to this decision and based on what information? Similarly, did BMW's Currency Committee have a role in BMW's decision to purchase the Rover company in the U.K.? Organizational behaviour techniques could be applied to investigate the effectiveness of Currency Committees in relation to the objectives that they are set, and whether the objectives are adequate in relation to the economic exposure management needs of the corporation. For example, what is the composition of Currency Committees⁴¹; what powers do their members have in the corporate hierarchy; what is the quality of information they receive on which they base their decisions; what kinds of decisions do they make, are these binding or merely advisory; and how are these decisions implemented and monitored within the organization?

4.2 Strategic management accounting.

If the Currency Committee were assigned an advisory function, or responsibility for managing economic exposure and if the Audit Committee were assigned responsibility for ensuring that the business units within the corporation complied with such strategic management, a potential conflict of interest could exist within the firm. The entrepreneurship of the business units could be sapped by regulations, for example, dictating matches between the currency of costs and revenues. To avoid unnecessary bureaucracy, the management accounting information on which the Currency Committee should base its decision-making must necessarily be strategic. According to Dent (1990:4), the influence of strategy research in the accounting literature appears to be marginal (aside from pure technique). Future research is needed to explore ways of designing an accounting system which reconciles information on the firm's economic exposures - (with the object of limiting these exposures) - with the potential for taking advantage of new business opportunities and acquisitions which might at the same time

⁴¹the senior management accountant should be a member (IFAC 1995)

increase economic exposure (see IFAC 1995). The need to identify competitor's short-run cost behaviour and its strategic significance is the most urgent task (Simmonds 1989). Edelshain's survey of U.K. corporations (1995)⁴² finds that few corporations are doing this, and then primarily the larger ones, and so it is necessary to research how firms can be induced to use such methods.

4.3 Finance : Agency theory

Neoclassical methodology assumes that agents act rationally and that the interests of the firm and its shareholders are the same. These assumptions appear inconsistent with the observations that firms are not managing their economic exposure. The strict assumptions of neoclassical methodology can be relaxed by introducing concepts such as agency theory.

The review of empirical research in Chapter 4 concluded that firms are inconsistent in that they state that they are risk averse yet at the same time do not manage their economic exposure. To investigate whether this is caused by competing interests within the firm, such as management and employees being risk averse, but also unaware of the risks from economic exposure, it is necessary to research how, if at all, performance in strategic hedging is measured and if it is not measured, how it may be possible to devise an evaluation system.

4.4 Business Strategy

In terms of the link between strategy and structure, the need for research on Currency Committees was indicated above. Further evidence is also needed to ascertain whether a conflict exists between product-market strategy and a risk reduction/efficiency trade-off. For example, are the choices available in product-market strategy constrained by the firm's declared financial strategy, such as the need to balance assets and liabilities in the

⁴²The survey found that only 37% formally examined the cost/pricing decisions of their competitors and only 45% reported that they examined the impact of possible exchange rate scenarios on their own competitive position.

same currency, or is financial strategy determined by product-market strategy, as is conventionally believed? More information is needed on the extent to which the need for the strategic management of currency risk via geographical diversification can lead to conflict with the need for economies of scale in production. For example, Philips NV⁴³ originally sought a single production facility in Germany for one of its products in order to maximize economies of scale. It decided instead to split production between two locations in the U.S. and Germany for fear of losing market share in the U.S. if the U.S. currency displayed prolonged undervaluation. The degree of conflict may depend on the extent to which competitive advantage is attained through overall cost leadership rather than through product differentiation. According to Porter (1980, 1985), though not others, these two strategies are mutually incompatible. Empirical information is needed on the relative importance of these two strategies in industries where costs are important and where the risk of misalignment can impose a constraint on globalization⁴⁴.

4.4.1 Contingency theory.

Contingency theory suggests that organizations' structures are contingent upon contextual factors (Pugh et al 1969). Given rapid currency movements over time, the danger exists that entities within the firm will be conditioned by the nature of the organization in which they work and not by changes in the external environment. A system of early warning signals of the impact on the firm of changes in real exchange rates is necessary. Such a system would also need to incorporate means whereby the signals are acted upon in a timely manner and not simply after losses have already been incurred. For the signals to be acted upon, future research is needed to explore the effectiveness of contingency plans and whether and how these are regularly updated in the light of the firm's changing circumstances. As a first step, it would be worthwhile knowing what percentage of firms actually do monitor changes in real exchange rates⁴⁵ and how information on real exchange rate changes can be more readily disseminated to smaller firms.

⁴³M. Inwards, Philips U.K., interviewed 2.2.1990.

⁴⁴More information is also needed on the comparative costs and effects of differing means of implementing matches in the currency denomination of costs and revenues.

⁴⁵Edelshain (1995) found that 36% of respondents did not know whether changes in real exchange rates impacted their business, so they did not even monitor them.

4.5 Economics - social and institutional factors in currency risk.

One of the findings of this study is that the case-study German firms prospered without managing their economic exposure⁴⁶, whereas their U.K. competitors suffered severe profits crises relating to sterling overvaluation. Social and institutional factors need to be investigated to explain the paradoxes that exist to the hypothesis that firms cannot manage economic exposure.

For example, the success of the Mittelstand companies in Germany is notable, and supports the hypothesis of the limited role of the corporate treasury since these companies are mostly too small to have treasuries, nor can they emulate German MNCs' geographical diversification. What social and institutional factors peculiar to Germany explain the success of the German Mittelstand companies ? Similarly, evidence from Porter (1990) shows that small and medium-sized family enterprises contribute the largest share to Italian exports, yet it is small firms that are the least sophisticated in currency risk management. It is notable that the Italian government has been ready to allow nominal depreciation in the lire, in contrast to the British position in which the exchange rate 1979-82, 1990-92 has not offset differential inflation rates, thereby producing misalignment. What social and institutional factors explain the contrasting U.K./Italian positions ?

The social and institutional approach can also usefully be extended to analyze how Japanese corporations are managing the rise in the real yen/US\$ rate in the early 1990s (eg Marston 1990) and to compare the effectiveness of such management with that of the Japanese corporations' U.S. and European competitors.

4.6 Empirical testing of models.

A sixth direction for future research is to empirically test those models in economic exposure management which have already been designed. It is noteworthy that none of the economics and finance models bearing on foreign exchange risk which are outlined

⁴⁶This is consistent with Glaum & Roth's (1993) survey (Table 10, p.1197) in which 18 out of 22 respondents ignored economic exposure. 9 respondents nevertheless stated that economic exposure is "very important" (Table 9, p.1194).

in Table 4.1 above has been empirically tested, including those of Walsh and Mello & Parsons.

Current data is not likely to be available, since models require data from competitors (for example, Walsh's model). Ex post data relating to a specific period in the past, which has no bearing on the current competitive situation, can then be used to examine the predictive performance of the model, given the known outcome.

4.7 International Relations

Corporate/government relations in lobbying for monetary integration in the U.K. are weak and fragmented (Appendix 5)⁴⁷. The analysis could be extended backwards to monetary policy itself to specify the differences in corporate/government relations between the U.K. and Germany which have provided the foundation in Germany in the post-1945 period for a stable monetary policy and a stable exchange rate policy.

It is also concluded that there is nothing in current international monetary relations to prevent misalignment occurring again in key currencies, as witnessed in the yen and DM in 1995. What needs explaining is how U.S. corporations were completely ineffective in preventing the U.S. administration from imposing policies which led to prolonged overvaluation between 1980-85, particularly in view of the sheer magnitude of real fluctuations in the US\$. Research so far on this topic, such as Moens' (Table 2.3) econometric relationship (which shows that U.S. corporate profits rose when the US\$ was overvalued), has not explained why and in what cases profits rose with overvaluation, such as data for domestic/foreign sales splits. Yet the prospect of a recurrence of US\$ overvaluation has serious implications for U.S. corporate strategy and for the corporate lobbying process.

⁴⁷In Edelhain's (1995) survey, 3% of respondents stated that they no longer sought government help.

APPENDIX 1

ASSOCIATION OF CORPORATE TREASURERS QUESTIONNAIRE FOR A.C.T. MEMBERS - APRIL 1990

"Attitudes to Monetary Union"

1. How important do you think the development of the Single Market in Europe will be to your company over the rest of the decade?
- | | <u>%</u> |
|-------------------------|----------|
| a) critically important | 7 |
| b) very important | 49 |
| c) quite important | 30 |
| d) marginal | 13 |
| e) no importance | 1 |
2. How quickly do you see the importance of the Single Market reaching a peak for your company?
- | | <u>%</u> |
|------------------|----------|
| a) already there | 24 |
| b) by 1992 | 21 |
| c) by 1995 | 31 |
| d) by 2000 | 14 |
| e) after 2000 | 3 |
| f) no view | 7 |
3. How dependent do you think the success of the Single Market is on currency stability -
- (i) - within the Community?
- | | <u>%</u> |
|-----------------------|----------|
| a) very dependent | 54 |
| b) somewhat dependent | 36 |
| c) not dependent | 9 |
| d) no view | 1 |
- (ii) - between the Community and other major markets?
- | | <u>%</u> |
|-----------------------|----------|
| a) very dependent | 16 |
| b) somewhat dependent | 51 |
| c) not dependent | 33 |
| d) no view | 0 |

4. Do you believe that currency stability within the Community can be achieved without a single currency?

	Yes %	No %	No View %
a) in the short term (3 - 5 years)	61	31	8
b) in the medium term (5 - 10 years)	51	37	12
c) in the long term (10 years plus)	31	53	16

5. Do you believe that sterling should join the ERM?

	%
a) Yes - immediately	44
b) Yes - but when inflation is lower	41
c) Yes - but not before the next election	1
d) Not for the time being	9
e) Never	3
f) No view	2

6. If sterling was to join the ERM before the end of 1990, what sterling/DM central rate would you prefer?

	%
a) 2.50	6
b) 2.60	22
c) 2.70	25
d) 2.80	22
e) 2.90	5
f) 3.00	11
g) 3.10	0
h) 3.20	1
i) other	*2
j) no view	6

* 4 notes were cast for other rates as follows:

2 for 2.85

1 for 3.40

1 for as high as possible

7. Which option would you favour initially for sterling within the ERM?

	%
a) normal 2¼% band	55
b) 6% band (like Spain)	43
c) no view	2

8. Regarding the future monetary arrangements within the Community which option below most closely accords with your personal preference?

	<u>%</u>
a) a monetary free-for-all	3
b) 'competing currencies' as proposed by the Treasury	7
c) stay with the EMS/ERM (excluding sterling)	2
d) stay with the EMS/ERM (including sterling)	46
e) move gradually towards monetary union/single currency	32
f) move rapidly toward monetary union/single currency	10

9. Given the possibility of a single currency in the Community, which of the following would you prefer?

	<u>%</u>
a) the DM	6
b) the ECU	51*
c) existing currencies at fixed parities	24
d) existing currencies fixed, where practical, at whole number parities (eg. 10 Fr.Fr. = £1.00)	14
e) Some other, please specify	**0
f) No view	5

* some called for revised weighting

** one vote was for sterling and one for a new artificial currency with no history.

10. Would you personally favour the delegation of monetary policy and management of the money supply -

	Yes <u>%</u>	No <u>%</u>	No View <u>%</u>
a) within the United Kingdom to a more independent Bank of England?	81	12	7
b) - within the European Community to a European System of Central Banks?	60	27	13

11. In respect of the European Community, which of the following propositions most closely accord with your personal view?

	<u>%</u>
a) a single currency is only possible with political union and a European government	31
b) a single currency can be achieved without political union provided that monetary policy is delegated to an independent system of central banks.	62
c) some other view	7*
* fourteen replies expressed a variety of views mainly against the idea of a single currency particularly in the near term.	

12. Do you believe that a European System of Central Banks (as proposed in the Delors Report) should be accountable to:

(more than one tick is acceptable)

	<u>%</u>
a) European Commission	13
b) European Council	13
c) European Parliament	37
d) National Parliaments	33
e) No view	15
f) Other	5

APPENDIX 2 PREVIOUS SURVEYS

Table A.1 summarizes the principal surveys that have been undertaken of how corporations manage currency risk.

TABLE A.1 (continued next page)
SURVEYS INVESTIGATING THE APPROACH OF CORPORATIONS TO CURRENCY RISK
MANAGEMENT

Survey Author & Date	Jilling & Folks 1977	Rodriguez 1980	British/ North America Committee 1982	Broder 1984	Cezairli 1988
Sample & Size	U.S. MNCs	U.S. MNCs	11 U.S., 13 U.K., 3 Canadian MNCs	47 U.K. MNCs	63 Foreign subsidiaries of U.S.MNCs
Which Exposures Investigated	miscell. & not grouped	translation & transaction only	translation transaction economic	translation transaction economic	translation transaction economic
Exposure Management Methods Investigated	21 methods	Yes	Yes, but scant attention to economic exposure	Yes	10 translation transaction 7 economic
Effectiveness of Methods Investigated	Yes	No	No	No	Yes
Strategic Management Investigated	No	No	Yes	Yes	Yes
Risk Aversion Investigated	Yes	Yes	Yes	No	Yes

TABLE A.1 (continued from previous page)

SURVEYS INVESTIGATING THE APPROACH OF CORPORATIONS TO CURRENCY RISK MANAGEMENT

Survey author & date	Soenen & Aggarwal 1989	Beck 1989	Lessard 1990	Belk & Glaum 1990	Edelshain 1995
Sample & Size	56 U.K., 103 Dutch, 58 Belgian firms	10 German MNCs	48 U.S. MNCs	17 U.K. MNCs	119 U.K. "Times 1000" firms
Which Exposures Investigated	translation & transaction only	translation transaction economic	translation transaction economic	translation transaction economic	23 categories
Exposure Management Methods Investigated	5 methods	transaction economic	9 methods	briefly	43 categories
Effectiveness of Methods Investigated	only indirectly	No	Yes	No	Yes 43
Strategic Management Investigated	No	Yes	Yes	Yes	Yes
Risk Aversion Investigated	No	Yes	Yes	Yes	Yes

"The results (of the Belk & Glaum and Edelshain surveys) are surprisingly consistent across the two samples"
(Belk & Edelshain 1993)

TABLE A.2
SURVEY EVIDENCE ON CURRENCY RISK MANAGEMENT OBJECTIVES
 % of survey respondents stating specified objectives as being important.
 na = not asked.

Survey & date	British North America Committee 1980	Cezairli 1988	Edelshain 1995
Avoid major forex losses	33	88	na
Reduce net economic exposure	27	na	55
Minimize earnings fluctuations	11	na	40
Maximize home currency equivalent income	11	na	na
Balance sheet protection	9	51	39
Preserve cash flow generation	4	na	na
Reduce translation exposure	4	na	na
Strengthening the company's competitiveness in global markets	58	63	na
Profiting from exchange rate volatility	na	13	26
Hedge all exposures from currency trading	na	na	53
No formal objectives re. currency exposure	na	na	15

TABLE A.3
SURVEY EVIDENCE ON THE MOST FREQUENTLY USED METHODS FOR MANAGING CURRENCY RISK.

% of respondents using stated methods.

na = not asked.

Survey & date	J & F 1977	BNAC 1981	Broder 1984	S & A 1989	Lessard 1990	Edelshain 1995
<u>Short-term contractual</u>						
Forward contract	82	93	96	83	95	78
Currency borrowing	83	34	88	47	94	61
Leading/lagging intra-firm	71	na	58	35	na	20
externally	51					
price adjustment in export market	48	na	na	42	82	23
dividend adjustment intra-firm	83	na	na	na	na	26
<u>Long term non-contractual</u>						
Currency borrowing	na	89	na		na	60
Flexibility in sourcing	na	na	na		62	12

J + F = Jilling & Folks

BNAC = Blin et al

S & A = Soenen & Aggarwal

TABLE A.4
EMPIRICAL EVIDENCE OF SURVEYS ON THE EFFECTIVENESS OF METHODS
 % of respondents stating specified methods are effective.
 M = medium effectiveness
 H = high effectiveness
 L = low effectiveness

Survey & date	Jilling & Folks 77	Cezairli 1988	Lessard 1990
pricing in home currency	M	51	
netting		33	
leading & lagging	H	25	
currency borrowing	H	67	
intra-firm transfers	M	18	
forwards	H	82	58
futures		17	
currency swaps		37	
currency options		27	
price adjustment	H	60	48
flexibility in sourcing		33	33
adjusting capacity utilization		11	27
investment decisions			24
product diversification		18	
geographical diversification		26	
natural hedge	M	48	
unhedged long term currency borrowing	H	26	

**TABLE A.5
EDELSHAIN'S (1995) RESULTS ON THE EFFECTIVENESS OF METHODS TO MANAGE CURRENCY
RISK IN "TIMES 1000" CORPORATIONS.**

Percentage Responding

METHODS	USED	FINDING EFFECTIVE
Forward contracts	78	67
Spot	74	44
Option	51	35
Selective hedging	46	30
Swaps	40	29
Parallel loans	17	9
Insurance	17	7
Futures	15	12
Collars	14	8
Pricing in a different currency	34	13
Netting	31	19
Timing of dividend remittances	26	8
Indexing contracts	21	11
Leading/lagging payments/receipts	20	6
Delaying/speeding purchases/sales	14	3
Using reference to a currency basket	12	5
Using reference to a stable currency	16	10
Using international group transfer pricing	10	4
Matching currency denomination of revenues and costs and assets and liabilities	61	41
Issuing local currency debt	60	43
Use of tax schemes	19	12
Selective subcontracting	14	7
Selective overseas plant location	12	4

APPENDIX 3

The mechanics of aggressive or defensive asset and liability management for currency overvaluation are indicated in the following tables:

**TABLE A.6
TREASURY RISK POSTURE IN ASSET AND LIABILITY MANAGEMENT**

Risk Posture	AGGRESSIVE Increase the following denominated in strengthening currencies	AGGRESSIVE Increase the following denominated in weakening currencies	DEFENSIVE To minimize foreign exchange gains and losses
Balance Sheet Exposure	Assets	Liabilities	Match the currency denomination
Income Statement Exposure	Revenues	Costs	Match the currency denomination
Cash flow Exposure	cash inflows	cash outflows	Match the currency denomination

TABLE A.7
METHODS OF PURSUING AN AGGRESSIVE TREASURY STANCE
VIA CHANGES IN OPERATING VARIABLES

OPERATING VARIABLES eg. trade receivables and payables inventory fixed assets	CHANGES - examples £ OVERVALUATION AGAINST THE DM
<p>COSTS OF CHANGES These must be compared with the potential currency gains.</p> <p>Suitable imports may not be available.</p> <p>Shortening length of credit terms may cut sales, discounts will add to costs.</p> <p>Deferring payment may mean missing discounts and losing goodwill.</p>	<p>Currency denomination is largely determined by the nature of the firm's business and may not be easily changed. Possible changes include:</p> <p>Cash flow exposure Example is of a U.K. exporter to Germany. To obviate high hedging costs of exports from high forward discount and interest rate differential, the U.K. company should find imports in DM to match the £/DM risk of exports.</p> <p>Translation exposure Example is of a U.K. subsidiary in Germany when sterling overvaluation is forecast.</p> <p>"All-current" translation method generates positive balance sheet exposures. Method : Reduce DM asset exposure. Reduce DM receivables by shortening length of credit terms, offering discounts. Reduce DM inventories. Increase DM payables by deferring payment</p>

TABLE A.8
METHODS OF PURSUING AN AGGRESSIVE TREASURY STANCE
VIA CHANGES IN FINANCIAL VARIABLES

FINANCIAL VARIABLES eg. cash short-term investments debt	CHANGES - examples Example is of a U.K. subsidiary in Germany when prolonged £ overvaluation is forecast
<p>COSTS OF CHANGES</p> <p>Changes to Operating variables in Table A.7 eg. increasing DM trade payables and DM borrowings and reducing DM receivables, will tend to increase DM cash flow of U.K. subsidiary. Excess cash can be reduced by transferring to parent and converting into £.</p> <p>The principle cannot be applied to all countries. Some prohibit high dividend payments.</p> <p>In practice, capital market borrowing is "lumpy" and it is more flexible to use local bank borrowing in DM. The U.K. MNC parent would also find it difficult to issue debt/equity in all its subsidiaries' currencies exactly when it wants to. If sterling overvaluation coincides with recession, it may not be able to raise funds in the capital markets at all.</p>	<p>Discretion over currency denomination is greater than with operating variables. The treasury role is therefore enhanced.</p> <p>Cash Flow Exposure. Objective: reduce net exposed DM assets. Reduce DM cash/near cash. Increase DM debt.</p> <p>Balance Sheet Exposure. Take measures to facilitate transmission of earnings back to parent eg. pay out extra dividends from reserves. Thus it is desirable to ensure that reserves are not capitalized.</p> <p>Repay parent company debt, since repayments are not normally taxed. Thus it is desirable to fix a high ratio of intercompany debt to parent equity in the subsidiary's capital structure.</p> <p>Currency of financing policy. To increase DM debt, the U.K. parent should borrow DM long-term in capital markets, since the subsidiary in Germany is likely to be restricted to local bank borrowing.</p>

APPENDIX FOUR

ROLE OF EXCHANGE REGIME IN PROLONGED CURRENCY OVERVALUATION.

1. Objectives.

Given that governments have ignored the need to prevent currency overvaluation yet have still been re-elected, the realistic hope for corporations to influence exchange rate policy to prevent currency overvaluation is by lobbying for an exchange regime which binds governments to a set of rules which preclude overvaluation. The purpose of this section is to investigate the role of exchange regimes¹ in the twentieth century in the prevention or curtailment of currency overvaluation, with reference to the U.K.:

2. The Gold Standard and prolonged overvaluation.

According to the theoretical blueprint (see Robbins 1963), exchange rates could not become overvalued because of the unrealistic assumption of perfect flexibility in production. However, the U.K. government had chosen an overvalued pre-war exchange rate to return sterling to the gold standard and was only forced off it in 1931 after all its gold reserves had been depleted.

Given that the burden of adjustment falls directly on the firm, not on governments and that the perfect flexibility assumed in Hume's model does not exist, the capacity reductions, bankruptcy and unemployment that were a feature of the cycle are consistent with the existence of currency overvaluation. Further, the existence of banks and credit creation meant that the rules of monetary expansion and contraction proportionate to the inflow and outflow of metal did not apply. Thus the system could never be self-correcting.

¹space does not permit a review of regime theory. See Strange 1982a.

In conclusion, the actual workings of the gold standard bore no reality to the theoretical basis of the regime. Exchange rate overvaluation could exist, and the regime created cycles which are undesirable from the point of view of both corporations and governments.

3. Flexible exchange regimes and prolonged overvaluation.

In the inter-war period, a clean floating regime existed between 1920-25 and then, after the breakdown of the gold exchange standard from 1931, a regime of dirty floating followed, i.e. one in which governments manipulated exchange rates to obtain a trade advantage over competitors. Devaluation to create an advantage implies undervaluation of an exchange rate. However, the reality of downward rigidity in wages and prices implies inflexibility in real adjustment. To the extent that floating exchange rates do not fully reflect this downward rigidity, currency overvaluation can result.

4. Bretton Woods and prolonged overvaluation.

The benefit to corporations of the Bretton Woods regime can be seen on two fronts. Macroeconomic risk was much reduced by the Keynesian revolution and the new counter-cyclical objectives of governments to prevent the slumps and prolonged depressions that characterized the operation of the gold standard.

Secondly, the advantage of the gold standard, exchange rate fixity, was retained. A disadvantage of the gold standard, that governments selected the (overvalued) exchange rate to join the regime, was tackled by having "fixed, but adjustable" exchange rates, i.e. the possibility of adjustment was built into the regime. This possibility could be exploited to prevent a currency becoming overvalued. Adjustments were to occur only very infrequently to limit exchange risk. With both macroeconomic and exchange risk now limited, firms faced the lowest "financial" risk environment of all time. The burden of adjustment had been shifted from the corporation to governments.

In practice, prolonged exchange rate overvaluation could still occur, either through seniorage in the U.S. case, or in the U.K. case in the 1960s, owing to political unwillingness to devalue in line with U.K. economic fundamentals and because the

Bretton Woods regime facilitated discretionary economic policies, but did not have the means to secure macro-economic policy coordination.

5. Post-Bretton Woods floating and prolonged overvaluation.

The attraction of floating in 1973 was that it did not matter if policy coordination could not be secured, since floating was supposed to permit autonomy in economic policies. Secondly, floating was assumed, particularly by Chicago school proponents (Friedman 1953, Melamed 1988) to bring about smooth adjustment without government intervention. It was believed (see Williamson 1985:48) that the adjustment problems of floating in the inter-war period, namely downward wage and price rigidity, would be more than offset in the post-Bretton Woods regime of floating by the macro-policy benefits, i.e. governments believed that they would not have to sacrifice monetary sovereignty. It is noted here that whereas the macro-policy benefits essentially accrue to governments, the costs of rigidity in the price adjustment mechanism accrue to corporations. The macro-policy benefits involved an end to the crises of confidence in a currency which are politically painful to governments; no one-way bets for speculators; no requirement for policy-makers or central banks to intervene, since "markets cannot be wrong" (Friedman 1953); and less concern on international liquidity, since floating permitted a reduction in reserves.

In reality, the reversion to floating which followed Bretton Woods led to divergences of exchange rates (from the equilibrium values indicated by trade flows) of a far higher magnitude than that seen in earlier regimes.

Why prolonged overvaluations emerged can be seen principally in terms of the temptations offered to governments to pursue their own uncoordinated policies and secondly to the changes in the background environment² which acted as permissive factors to sustain the prolonged overvaluations.

The temptations were that floating was supposed to remove the balance of payments

²See Chapter 2 and Strange 1988.

constraint on growth so that countries could pursue differing inflation targets which would be fully offset by exchange rate adjustment. The only additional problem that corporations had to manage, compared to the Bretton Woods regime, would then be volatility in nominal exchange rates.

Instead, the U.K. and U.S. are examples of differing inflation rates not being fully offset by exchange rate adjustment owing to governmental manipulation of interest rate policy. Thus the burden of adjustment and of management of economic divergences and shocks was, in certain countries, switched from governments back to corporations.

The background trends which have enabled currencies to become persistently overvalued under floating are as follows. Firstly, product market integration³ and the increased internationalization of corporations⁴ has been engendered by, and tends to reinforce, trade liberalization. Secondly, trade liberalization can exert pressures for the abolition of exchange control. Thirdly, the abolition of exchange control and the deregulation of financial markets permits increased capital mobility and speculation. Fourthly, the asset market approach to the balance of payments (summarized in **Chapter 2**) indicates how governments can exploit capital mobility by manipulating interest rates to attract capital inflows. In the long term, capital inflows can thereby coexist with massive structural balance of trade deficits and in turn sustain prolonged currency overvaluation.

The economic integration that benefited corporations has continued apace under floating exchange rates. What this suggests is that governments were willing to dispense with the international monetary system because it was not essential to economic growth and because it interfered with domestic sovereignty. By contrast, the trade system remained intact. The other institution set up at Bretton Woods, the GATT, has continued to exist

³International product market integration is an idealized state which would exist when the degree of international arbitrage is sufficient to ensure the equality of prices of the same goods across countries, after adjusting for transport costs. This notion of price equality is known as the Law of One Price. Other conditions necessary for it to exist include the absence of market imperfections and the presence of other parity conditions such as purchasing power parity. See Diagram 2.1

⁴see Turner & Hodges (1992:12-21) for an account of globalization and the role of the corporation in increased product market integration.

because it is an inter-governmental contract which governments recognize that they need⁵.

The question then is how floating has not hampered continued economic integration. Economic integration continued apace because the economic shocks facing firms in those countries with misaligned currencies were, in global terms, localized. In addition, economic integration continued apace as one of its catalysts, the free movement of capital, was unleashed under floating.

6. Conclusion.

U.K. experience in four consecutive exchange regimes is that sterling overvaluation has occurred under all of them. The design of the regimes made unrealistic assumptions regarding the workings of the economic system and of public policy-making. The practical implications strongly suggest the need for coordinated government management.

⁵Strange (1990) argues that financial stability is more important for trade growth than details such as the Uruguay Round.

APPENDIX 5

WHY LOBBYING ON EXCHANGE RATE POLICY AND MONETARY INTEGRATION WAS INEFFECTIVE.

For efficacy, application of pressure group theory¹ indicates that corporations and corporate pressure groups should lobby at both national and at European level and that the links between corporations and pressure groups and between pressure groups on the issue of exchange rate policy and monetary integration should be strong at both the national and at the European level. The actual pattern of corporate and pressure group lobbying is now compared against these yardsticks, with emphasis on the U.K. example of overvaluation.

Corporations can attempt to influence government policy directly, or they can lobby governmental institutions via industry and national/international pressure groups.

1. Direct lobbying.

The preparedness of government to listen to direct communication depends on several factors, such as the strategic importance of the industry and firm, its numbers of employees, its location in marginal parliamentary seats, its contacts with MPs and government ministers. On these criteria, Lesney Products & Co. Ltd. had little weight and it did not engage in direct lobbying of the government. By contrast, both BL, (as parent of Jaguar) and ICI had significant weight and both did engage in direct lobbying, eg. during the 1979-83 sterling overvaluation:

"...our prospects, speed of recovery and international competitiveness will be considerably affected by what happens to the value and volatility of sterling, by the level of U.K. interest rates, by the size and vitality of our customer base and the extent to which the rate of inflation of Government controlled costs can be reduced. The Company stands to benefit markedly from success in the Government's efforts to reduce the rate of U.K. inflation, an objective which we fully support. Nevertheless, we have drawn

¹eg. Butt 1985, Streeck & Schmitter 1991, Mazey & Richardson 1992.

Government's attention in the strongest terms to the dramatic effect on our business of some of the mechanisms which are being used." (Chairman's Foreword, ICI 1980 Annual Report).

Similarly, the BL chairman sought a meeting with the Industry Secretary:

"...We told him that the remarkable appreciation of the pound since January (1979) had had traumatic consequences for BL. Conventional wisdom stated that the competitive effect of strong sterling would be offset by cheaper imports of raw materials. But our raw materials were indigenous, and more than 90% of our components manufactured in Britain...But this Government wouldn't budge. Any discussion on the subject met with a stonewalling response." (Edwardes 1983:96)

Later, during the 1990-92 overvaluation, ICI did not attempt to lobby against the exchange rate that was chosen for entry until July 1992 (FT:31.7.92:1). The reason for the delay is that ICI believed that sterling's membership of the ERM was the correct policy² for long-term strategic reasons.

ICI and BL's fruitless direct campaigning during the 1979-83 sterling overvaluation was supplemented by vigorous action on the part of national pressure groups (CBI 1981) such as the Confederation of British Industry and Institute of Directors. These are likely to be more influential than narrow specialist trade associations. This is because of the need to influence public opinion in order to change government economic policy.

Despite the intense lobbying, there is no evidence that pressure groups were able to influence exchange rate policy. It was not until 1983 that the Chancellor brought the pound significantly lower. This was via a relaxation in monetary policy with significant interest rate cuts. The change in policy was brought about not by pressure groups, but prompted partly by a collapse in the market price of North Sea oil.

²T. Harrison, interviewed 7.6.1994.

2. Why corporate pressure group lobbying against currency overvaluation has been ineffective.

Corporate pressure groups can pursue four main objectives to secure monetary integration as a means for U.K. firms to avoid sterling overvaluation.

One is lobbying to speed up attainment of the Maastricht convergence criteria. However, the reduction of fiscal deficits Europe-wide during a recession would serve to prolong recession. Corporations thus have little interest in ensuring that the Maastricht target of monetary integration by 1997 is achieved on time, let alone speeded up³.

Secondly, corporations can lobby government to take measures which would enable them to use the ECU in place of national currencies. However, governments do not wish to take such measures.

Thirdly, pressure groups could facilitate cooperation between firms to bring about inter-firm invoicing and payment in ECU. This has not been attempted by pressure groups. The AMUE has not got beyond the mere dissemination of information on the ECU to primary users and has not attempted to lobby end-users. At the end-user stage, the only research so far has been surveys by the European Commission (1985) to ascertain public attitudes to the ECU.

Fourthly, lobbying efforts have focused on only two of the three sets of actors, namely governmental agencies⁴ and, in the case of the AMUE, on other corporations⁵. There is little evidence of lobbying on the third tier, that of corporations' employees and consumers. It appears that pressure groups, both national and at E.U. level, have given

³The Director General of the CBI commented "it would cause us no concern if the Maastricht timetable were formally abandoned" (FT 15.11.93:7).

⁴In the U.K., both the CBI (1993a) and Institute of Directors (FT:16.6.93:18) have called for an independent central bank. The IoD also calls for tax payments to be made in ECU (IoD 1991:29-34).

⁵ However, the lobbying of other corporations by the AMUE is part of its quest for new members, rather than to persuade corporations to use ECU strategies in their treasuries. Indeed, the AMUE's existing members are not even doing this.

up the idea of lobbying at voter level.

Voters and corporations, in terms of employment and profits, are the most likely to suffer from prolonged currency overvaluation. Yet there does **not** appear to be a general perception among these groups that adherence to the discipline of a single monetary policy in Europe could prevent prolonged overvaluation. Instead, the debate in the U.K. has focused on the loss of political sovereignty and such a loss has tended to be perceived as negative.

The principal reasons for the neglect to tap the potential support in the U.K. for monetary integration on the rationale of preventing overvaluation are issue saliency, the relative strengths of pressure groups and the receptiveness of appropriate governmental institutions to pressure group lobbying.

Issue saliency against overvaluation might be expected to be significant for the following reasons. One is that prolonged overvaluation affects all corporations in the economy concerned. Second is that because all corporations are affected by it, a policy community exists in which corporations can collectively attempt to address the problem. Third is that if corporations cannot collectively manage the problem themselves, their collective action is likely to be focused on the government. This in turn will tend to focus attention on the causes of the prolonged overvaluation. Fourth is that to the extent that the government realizes that currency overvaluation is having an adverse impact on the competitiveness of the economy, it is more likely to be motivated to address the problem.

Why pressure groups have been ineffective in capitalizing on this consensus against prolonged currency overvaluation by means of monetary integration can be analyzed as follows. The CBI and other pressure groups did not lobby for sterling to join the ERM in 1979 because of the previous experience of sterling being forced out of the Snake. From 1983-90, currency overvaluation lost its saliency. At the time of the 1990-92 sterling overvaluation, the CBI, which had been lobbying since 1986 for U.K. entry to the ERM, did not lobby against the sterling overvaluation within the ERM. Such lobbying

could have undermined the entire ERM policy⁶.

A second reason is that whilst U.K. corporations and voters are likely to find a consensus against the adverse effects of prolonged overvaluation, they are less likely to perceive monetary integration as a cure. It is notable that the CBI has never surveyed its membership on whether it is in favour of the ERM. Instead, the CBI adopted its position in support of sterling participation in both the ERM and EMU with the justification that its surveys indicate overwhelming support of its membership for exchange rate stability.

Given the lack of perception in the U.K. of monetary integration as a means to preclude overvaluation, why have pressure groups not been active in propagating such a rationale? To answer this, the policies of corporate pressure groups at industry level, national and European level are examined.

At the industry level, there are over 2000 trade associations in the U.K. These are fragmented and, according to the U.K. trade minister, tend to be narrowly focused, poorly resourced and ill-equipped to improve their members' competitiveness (FT:19.7.93). The relevant pressure groups for the case study firms are the Society of Motor Manufacturers and Traders (SMMT) and Chemical Industries Association (CIA). Despite the large resources of these bodies - (the annual income of the CIA is £4M) - neither has published any report on how currency factors affect the U.K. industry they represent⁷. One reason is because currency factors would affect their members in different ways, depending on their degree of geographical diversification. The SMMT has never stated its policy on exchange rates, whereas the CIA has. A rationale for sterling membership of the ERM from 1979 can be seen in the CIA's own words:

"...The chemical industry generally finds beneficial a weak dollar in order to secure cheap raw material inputs where they are priced internationally and a strong DM to enable competitive pricing of exports to the E.C. which takes more than 50% of U.K.

⁶CBI Director General quoted in FT:12.8.92:17.

⁷The information in this section is derived from Michael Hollingsworth, chief economist, SMMT, interviewed 21.7.92, and N. Sturgeon, economist, CIA, interviewed 29.7.91.

chemical industry exports" (CIA, private correspondence 30.7.1991)

What occurred instead was that the US\$ rose in real terms 1980-85 and sterling appreciated against the DM. This indicates a difference between the CIA's interests and those of its German equivalent, the Verband der Chemischen Industrie (VdCI). Whilst the term "a strong DM" is a misnomer, it is in the interests of the German chemical industry that the DM is not overvalued in relation to PPP. However, it is not necessarily in the interests of the VdCI that the pound is overvalued, since overvaluation has been associated with U.K. recession, which would tend to have an adverse impact on German exports to the U.K. At the European level, the CIA lobbies via the Conseil Européen Fédérations Industries Chimiques (CEFIC), but similar differences exist as with VdCI, since DM pricing of chemicals is the norm in continental Europe. Thus the common ground between them is a preference for exchange rate stability.

A second question is why the U.K. industry pressure groups did not lobby the employees (voters) and trade unions of their members to generate grass roots support against sterling overvaluation and in favour of monetary integration⁸. The explanation lies with the perceived objectives of the industry pressure groups. These objectives tend to be dominated by technical concerns. The SMMT states that the governmental policies with which it is concerned are transport policy, environmental policy and trade policy - for example, European access for the cars of its Japanese manufacturers in the U.K. It does not concern itself with issues of economic competitiveness.

At the European level, whilst the SMMT has close contact with its German equivalent, the Verein Deutscher Automobilhersteller (VDA) and contact on technical issues with the Organisation Internationale des Constructeurs d'Automobiles (OICA), its sharing of information is restricted to the above policy areas and these do not include exchange rate policy or the advocacy of monetary integration. Whilst the CBI and its German equivalent, the BDI, do lobby on monetary integration⁹, the links between the national

⁸The German pressure groups have little incentive to do so, whilst German voters have already been lobbied by the popular press on the risks of replacing the DM with a European currency.

⁹Dr. Massenber and Dr. Kudis, private correspondence 3.4.1991. Policy is set out in BDI (1990).

industry pressure groups and these employers' federations on exchange rate policy are weak. The salient issues in which the SMMT, for example, has close links with CBI committees are tax and transport policy¹⁰.

The question then arises as to why the CBI has not compensated for the gap left by industry pressure groups and attempted to muster grass-roots support for monetary integration as a tool to preclude overvaluation. Such a tactic would reflect the CBI's effectiveness as a publicity machine. One reason why the CBI has not attempted this is that it perceives the lobbying of employees as the function of trade unions. A second reason is that national pressure groups are themselves divided. In opposition to the CBI, the Institute of Directors (1991:5)¹¹ has been effective in propagating the view that the loss of the exchange rate instrument in the U.K. would remove one means of restoring competitiveness in the event of a divergence in inflation rates between the U.K. and the rest of the E.U. The U.K. government is reluctant to lose this additional flexibility, which it could regard as critical ahead of an election. What the CBI recognizes (CBI 1989b:15 paras. 66-69), but has failed to propagate, is the advantage of the discipline of monetary integration. The discipline could be crucial in preventing the divergence in inflation rates occurring in the first place. By contrast, monetary sovereignty in the U.K., which the IoD seeks to prolong, could tend to facilitate such a divergence.

Given the findings of the survey of U.K. corporate treasurers, that the preferences of the overwhelming majority of ACT members regarding exchange regime are at odds with U.K. government policy, why has the ACT been ineffective in influencing U.K. government policy ¹²?

One is the strength of the government's self-interest in maintaining monetary sovereignty.

¹⁰Margaret Line, economist, SMMT, interviewed 21.7.92.

¹¹The IoD's own view is that the attainment of the necessary economic convergence for EMU can only be secured in the long-term and that it is necessary to retain exchange rate flexibility until that time. In the meantime, it advocates the ECU as a parallel currency (IoD 1993:4).

¹²The findings of the survey provided the input of the ACT to the U.K. Treasury as part of the consultancy process which the treasury used (but completely ignored) in policy formulation ahead of Maastricht.

Secondly, the ACT is not a political body and was not founded to engage in lobbying. In any case, monetary integration would be classified as only a minor issue in the goals of the ACT. The ACT perceives its role as one of education and of fostering the development of the treasury profession in the U.K.

Similarly, for the CBI, monetary integration is only one issue out of many and the CBI itself views EMU as a distant prospect (CBI 1990b:13 Para.4). Further, whilst the CBI supports monetary integration, it perceives other aspects of E.U. policy, such as social legislation, as far more significant to its members' interests (FT:20.4.94:7). Similarly, whilst the European Round Table of 40 top industrialists supports monetary integration, it believes that "competitiveness should be at the top of the E.U.'s policy agenda" (FT:4.12.93:24). Lobbying at the European level is also hampered by differences between the interests of the national employers' federations. The CBI supports economic integration and would ideally like to see German standards of industrial production and economic stability in the U.K. However, the price the CBI is prepared to pay for economic integration does not include acceptance of German corporate social obligations, such as supervisory boards. This puts the CBI at odds with the BDI and DIHT in Germany and, at the European level, with Unice. The pressures for positive integration, i.e. the creation of E.U. policies, favoured by the German pressure groups are being countered by CBI pressure for negative integration, i.e. integration via the erosion of national policies, such as the levelling down of social policies. The CBI thus seeks to prevent the imposition of policies of positive integration on itself¹³. By contrast, it is in the interests of German pressure groups that social costs throughout the E.U. are levelled up towards German standards.

Why then has the AMUE, which focuses exclusively on monetary integration, not taken up the mantle left by the CBI, Round Table and Unice ?

Firstly, the AMUE is very weak in terms of its membership at national level, particularly in the U.K. Unlike the CBI, the AMUE counts only few industrial corporations among

¹³The President of the CBI stated that it was necessary to "persuade our sister federations in Unice...of the importance of avoiding "own goals" through the Social Chapter, or other related legislation" (FT:20.5.93:19)

its U.K. members. Even the CBI has allowed its membership subscription to the AMUE to lapse. A reason for the lack of U.K. corporate interest is the lack of cohesiveness of corporations on EMU¹⁴.

Secondly, the AMUE's U.K. membership itself is not at all cohesive. A large number are banks. This might seem paradoxical in view of a survey (Arthur Anderson 1993) of 400 banks in 21 European countries which found that most believed that EMU would not be in their interest since they hope to increase profits from trading in individual European currencies. 86% also responded that the goal of monetary integration was unlikely. The banks that are members of the AMUE in the U.K., such as San Paolo, Chase and Barclays, are clearly those which hope to profit by capitalizing on their expertise in the ECU in readiness for a governmental decision to introduce a single currency. By contrast, industrial corporations have little incentive to introduce the ECU as a parallel currency because of the extra costs¹⁵.

The fact that both banks and industrial corporations are members of the AMUE should nevertheless strengthen the AMUE. Yet such supposed strength has not been sufficient to enable the AMUE to overcome other obstacles to cohesiveness.

A third reason for the ineffectiveness of the AMUE is a lack of agreement between corporations on what they are seeking from EMU. For example, whereas Alcatel has pioneered the use of the ECU in its treasury, and both its finance director and treasurer strongly favour monetary integration, Alcatel's chairman, Pierre Suard, is one of the most prominent anti-Maastricht Treaty campaigners in French business. His view stems principally from the free trade bias in the Treaty:

"In some sectors, like electronic components, it is too late. The Community's free market policy is suicidal, notably in the face of the Japanese" (Suard in FT 8.9.92:2).

¹⁴The anti-EMU stance of Hanson and Redland's treasurer is noted in **Chapter 10**.

¹⁵see **Chapter 9**.

4.5 Conclusions.

The basis for the ineffectiveness is that firms themselves are incohesive both in terms of their currency risk profile and in terms of their degree of preference for changes in exchange regime. Each individual firm's foreign exchange exposure is unique, depending on the options and constraints it faces. Similarly, at a European level, the degree of exchange risk is unique in differing economies, partly depending on government exchange rate policy. There is evidence that EMU is not universally perceived in the U.K. as a solution to overvaluation; that EMU is not perceived as a high priority issue; and that partly stemming from this, corporate lobbying groups are incohesive and weak on the issue of EMU, both at the U.K. and at the European level.

The pluralistic structure of European politics indicates that the large and homogenous common-interest groups that might be expected in the business sector do not in fact exist on the issue of EMU, and that the ideology of Europe is not strong enough for U.K. politicians to make the commitments necessary for EMU. U.K. politicians can openly ignore the CBI, even though such pressure groups are insiders, not outsiders, in that they normally form part of the government's policy formulation process (Peters 1977). Further, monetary integration is an issue of "high" politics, but it is much more difficult for both national pressure groups and those operating at the European level to influence issues other than "low" politics (Hoffmann 1966). One reason is that the consultation process on policy proposals is not open to bargaining in "high" politics, except on details of execution. This suggests that the role of corporate pressure groups in monetary integration is not as strong as the hypothesis of Dekker¹⁶, that the main force in integration since the early 1980s is business interests, whereas prior to this, the main impetus was political.

The weak role of business in exchange regime policy is already witnessed in the switch to floating in 1972/73. Concern that individual firms would not be able to manage the

¹⁶Wisse Dekker, then chairman of Philips and of the Association for the Monetary Union of Europe, "Europe's Economic Power: Potential and Perspectives", speech delivered to the Swiss Institute of International Studies, Geneva 25.10.1988.

risks involved led to fears that world trade would show dramatic declines. Yet corporations had little input into the decision taken to float, since governments went ahead anyway since they were forced by events.

Why then U.K. firms and pressure groups bothered to lobby can be seen in the quotes from ICI and BL above - that they lobbied out of sheer desperation; that it was a last hope for an instant change, whereas the measures that firms could take themselves could only take effect in the long-term.

APPENDIX 6

CURRENCY RISK IN PERSPECTIVE TO OTHER RISKS STEMMING FROM PUBLIC POLICY - A COMPARISON OF CORPORATE VULNERABILITY IN GERMANY/U.K.

1. Objectives.

It would be simplistic to infer from the case studies that the improved competitive position of German competitors to the U.K. firms stems from the absence of DM overvaluation. A multiplicity of other contributory factors exists. Mention has already been made in **Chapter 3** of the self-reinforcing features illustrated in Porter's diamond.

The purpose of this section is to put the currency misalignment syndrome into perspective with other financial risk which is determined by or is under the jurisdiction of public policy. Here existing research on comparative German and U.K. public policy relevant to the financial risks affecting firms is summarized.

2. Comparative vulnerability of U.K. and German firms to hostile takeover.

U.K. companies are uniquely vulnerable to hostile acquisition (Franks & Mayer 1990, Jenkinson 1992), and the role the stock market is performing in the U.K. is not a financing function, except in a very limited sense, but instead the role is one of a market for ownership and control (Mayer & Alexander 1991).

The question for public policy is whether this role of the U.K. stock market is a desirable one. The effect of the U.K. model is to allow markets in corporate strategies to emerge. A company believing it has a better strategy than others is free to make takeover bids. The drawback is that there is no commitment of shareholders to the firm. Further, the other stakeholders such as suppliers, purchasers and employees are not represented in ownership decisions. For these reasons, the U.K. model can be termed an outsider system, whereas that of Germany is an insider system in which the degree of outside

control by shareholders is much more circumscribed.

To test the short-termism hypothesis¹, the impact of the insider and outsider systems of corporate control on entrepreneurship and economic performance needs to be compared. Mayer & Alexander (1991) concluded that the German insider model favours highly specialized high value-added production where involvement of highly trained employees is crucial. It also facilitates the concerted development and implementation of activities by stakeholders, providing the security for a firm's suppliers to risk investing in innovation to upgrade products. Secondly, the insider system consolidates market strength, since in the creation of markets, long-term relationships have to be built up with suppliers and customers. By contrast, in the U.K. outsider model, U.K. quoted firms display a better performance than non-quoted firms because they can grow by takeover rather than organic growth.

2.1 Conclusion.

In contrast to German firms, U.K. firms have not only had to manage prolonged currency overvaluation but also have to face the threat of hostile takeover and a more uncertain planning environment.

3. Comparative vulnerability of U.K. and German firms to make high dividend-payout ratios.

In finance theory, dividend policy should be a residual in the sense that profits remaining over and above the need to fund investment are paid out to shareholders. Thus investment needs should be the determining factor in the amount paid out in dividends. Contrary to theory, Mayer (1991) found in practice in the U.K. that dividend policy is not at all a

¹This hypothesis is that if firms are protected from hostile takeover, management is given a more secure and, arguably, effective opportunity to plan and invest for the long term than if it were continually forced to prioritize short term profits as a means of keeping takeover threats at bay. To test this hypothesis, it is necessary to compare the beneficial effects on the firm of the German model of long-term stakeholder relationships with the mechanism to correct managerial failure presented by the U.K.'s free market in corporate control.

residual but decided instead at the highest level in companies. Further, the dividend-payout ratio of U.K. firms is on average twice as high as that of the German firms (Mayer & Alexander 1990). This difference could not be explained by hypothesizing that U.K. companies do not need to invest as much as in Germany, nor by differences in tax regime. Instead, German companies tend to cut dividends when profits were depressed whereas U.K. corporations maintained or increased them (Mayer 1991).

In the 1990-92 sterling overvaluation, U.K. dividend-payout ratios were double the level during the 1979-83 overvaluation, and the ratios have tended to increase as the profitability of U.K. companies has declined during recession (Dorrell:FT:15.5.1994).

Ownership and control structures influence the U.K. dividend-payout ratio in that the dividend-payout ratio of U.K. quoted companies is twice as high as that of unquoted companies (Mayer & Alexander 1990).

4. Comparison of institutional factors affecting corporate failure in U.K. and German firms.

This section summarizes evidence which suggests that in the event that firms encounter liquidity problems on account of, for example, currency overvaluation, then social and institutional factors relating to public policy give the German firm greater security than its U.K. counterpart. Four principal factors are considered here: bankruptcy law, bank relations, accounting practice and legal constraints on late payment.

4.1 Bankruptcy law.

In summary, German legal procedures when a company is in financial difficulty are biased towards a rescue culture, whereas in the U.K. the culture is more biased towards liquidation to repay creditors.

In Germany, the de facto position, if not the legal one, is that employees have an enhanced status in an insolvency in relation to other creditors. This acts as an incentive

for banks and other creditors to maintain the firm as a going concern.

In the U.K., banks assess creditworthiness on the basis of asset values, since liquidation would destroy goodwill, whilst leaving assets intact. Underlying this bias is that banks in the U.K. have an incentive to institute liquidation, since in so doing, they have the first claim on the company's assets. A further bias toward liquidation exists in a potential conflict of interest in the common U.K. practice whereby accountancy firms advise banks on the viability of client companies and then accept the resulting contract for receivership or administration.

4.2 Bank relations and withdrawal of credit.

In Germany, bank borrowing as a source of finance for AGs is found to be less important than it is for companies which do not have supervisory boards (eg. most GmbHs), thus diminishing the significance of the bank representative on the supervisory board in providing bank finance (Edwards & Fischer 1992). The main difference between the role of banks in the U.K. and Germany is that when a German firm falls into difficulties, it is far less vulnerable to the withdrawal of bank credit than its U.K. counterpart. This does not stem so much from the Hausbank role as from evidence that in Germany, much more bank lending is long-term, i.e. beyond 4 years. When firms fall into financial difficulties, German banks can decide to withdraw loans at any time, but unlike the U.K., German banks have to prove to the courts that a firm's borrowing conditions have deteriorated. Available data cited by Edwards & Fischer (p.14) indicate that only 23% of problem loans are rescued and that German banks often do not attempt a rescue.

Given this reluctance, Edwards & Fischer conclude that German banks exercise a means of discipline and control on the managers of larger firms much as the hostile takeover mechanism acts as a discipline in the U.K. Moreover, German banks exercise the function of ensuring that managers do a good job much more efficiently than a hostile takeover mechanism (p.17) and that this mechanism is exercised not so much via loans as by their voting power on management selection (p.18).

4.3 Accounting practice.

This section summarizes evidence that German accounting practices are biased toward limiting large fluctuations in reporting variables and are more consistent than U.K. practice in generating resilience in the face of shocks such as currency misalignment. This bias stems from differences in management accounting practices (Strange N. 1991, 1992) and in financial accounting.

In financial accounting, cultural factors present a bias toward stability. The relationship between notional operating profit in management accounts to the published P & L is usually opaque. German financial accounts are biased towards minimizing operating profit for tax reasons. Thus in the ICI case study, it was shown in **Table 8.13** that for the three German rivals, net income as a percentage of sales in 1979-83 was generally lower than that for ICI and far less volatile.

In management accounting, cultural differences exist between the U.K. and Germany in terms of goals; in the way, and by whom, the systems are designed; in the ways they are used and in the accuracy and relevance of the information produced (Strange N. 1991).

The way management uses accounting systems indicates that in the U.K., the purely financial performance of the company matters more, to more people extending further down the hierarchy than in Germany. The main reason is that in the U.K., capital productivity measures are used down to surprisingly low levels. Whilst German and U.K. main boards have similar "top four" performance measures, sharing an overwhelming interest in ROCE, German boards do not attach so much significance to EPS and cashflow as in the U.K. One level below the main board, ROCE falls to seventh place as a performance measure and to twelfth place two levels below main board. At this level, no profitability measures reach the top four performance measures in Germany whereas ROCE and cashflow are prominent in the U.K.

The main cultural factors underlying the above differences are consistent with U.K. firms being more vulnerable to shocks such as currency overvaluation. The U.K. emphasis on capital productivity reflects the relatively high cost in the U.K. of borrowed funds and

its volatility. The U.K. emphasis on EPS and cashflow is consistent with the evidence that the dividend-payout ratio in the U.K. is much higher than in Germany.

Whilst German companies are less interested in financial performance than in the U.K., Strange found that they are more interested in real measures of performance. For example, German management at all levels is significantly more interested in personnel and fixed asset productivity than U.K. management. By contrast, U.K. firms focus on current asset productivity, presumably because of its potential for rapid change. A cultural factor underlying the German focus is that German bonus schemes are often based on task completion, or at the highest levels, on absolute profit. By contrast, remuneration schemes at the highest level in U.K. corporations are often related to the company's share price.

Strange argues that the main difference between U.K. and German management accounting is in the structure and content of accounts. Firstly, German management accounts tend to make new investment in productive capacity appear more attractive and further, a much stronger influence of strategic considerations is found to exist in Germany.

The technical reasons underlying the greater willingness in Germany to invest are twofold. The majority of the sampled German companies use replacement values in their management accounts and these values are depreciated on a notational basis often far below zero value. As a result, it is possible for innovators to argue that replacing obsolescent plant will barely cause depreciation to rise, although the financial accounts show the plant to be fully depreciated.

It might be argued that the use of DCF investment appraisal techniques could prevent such an error. These techniques are less used in Germany, though DCF calculations are used to support funding applications in both countries. The relevance is that applications tend to be initially launched because of their positive impact on expected profit under the existing rules of the management accounting system. In Germany, the comparison base is depressed by replacement values and notional depreciation. Furthermore, since the

financial goal is absolute profit or profit as a percentage of sales, the propensity to apply for investment funds is correspondingly higher than in the U.K. This is because of the U.K.'s focus on historic, financial values and capital productivity goals. Thus at a crucial stage in investment decision-making, German management accounting in some respects "simulates" a lower cost of capital.

Evidence for the much stronger influence of strategic considerations in German management accounting is also found in investment appraisal. For example, there is evidence (to take just one example, see Daimler-Benz in Table 7.16), that historically German industry has found that technical product or production excellence usually leads to adequate profit. Once the strategic decision has been taken to excel in particular areas, there is often little attempt to justify individual reequipment decisions in terms of capital productivity.

An additional area in which German management accounting strategically leads the U.K. is in the widespread use of flexible budgets. In industrial corporations, the very structure of the profit and loss (P & L) statement, by being based on cost of goods produced rather than cost of goods sold, allows a simpler link to budgeting and monthly control. A cultural factor emphasizing the German preference for stability is that inflation accounting has been in place for more than 50 years.

Relatively low declared figures for operating income permit the transfer of part of the surpluses to reserves, which are opaque. The reserves serve as a cushion for German firms against unforeseen contingencies. By contrast, U.K. firms have no equivalent.

4.4 Comparative vulnerability of U.K. and German firms to late payment.

In Germany, firms have a statutory right to interest on overdue payments, whereas in the U.K., they do not. The CBI presented evidence in 1994 that late payment threatens the survival of one in five U.K. companies. Further, the U.K. has the worst record in the E.U. for the late payment of bills (FT 28.3.1994:13).

5. Conclusion.

In several key areas under the jurisdiction of public policy, German practice reinforces a stable planning environment for the firm whereas that in the U.K. reinforces uncertainty.

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