

An Exploratory Study into the Effect of a Change in Business Ownership on Employment and Wages

Contract: 112/2007/08

Final Report

for the

Welsh Assembly Government



LE Wales

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Contents

Page

Executive Summary	1
1 Introduction	8
1.1 Objectives	8
1.2 Report structure	9
2 Data on changes in business ownership	10
2.1 Providing context for Welsh data	10
2.2 Data sources	12
3 Management buy-outs	15
3.1 Incidence of MBOs	15
3.2 Profile of target firms	21
3.3 Employment	23
4 Family business/private company transfers	27
4.1 Incidence of transfers	27
4.2 Profile of target firms	33
4.3 Employment	35
5 Mergers and acquisitions	38
5.1 Incidence of M&As	38
5.2 Profile of target firms	43
5.3 Employment	45
6 Initial public offers	48
6.1 Incidence of IPOs	48
6.2 Profile of firms in IPOs	52
6.3 Employment	54

Contents	<i>Page</i>
7 Ownership changes - the Welsh economy in context	57
7.1 Ownership changes and the firm population in Wales	57
7.2 Ownership changes and employment	62
7.3 Ownership changes by sector	64
8 Review of evidence on the impact of ownership changes	66
8.1 Theoretical background	66
8.2 Empirical evidence	70
8.3 Conclusions	94
9 Interpretation	99
10 References	102
Annex 1 Selection of regions for comparison	109
Annex 2 Data availability	117
Annex 3 Distribution of firm-level indicators	120

Tables & Figures

Page

Table 1: Percentiles and turnover thresholds – annual turnover	59
Table 2: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) – number of employees	61
Table 3: Ownership changes in Wales by sector compared with total company population	64
Table 4: Empirical studies on the employment effects of changes in business ownership	71
Table 5: Empirical studies on the wages and other labour market effects of changes in business ownership	80
Table 6: Post-MBO changes in employee relations in the UK and the Netherlands (Bruining et al., 2004)	85
Table 7: Mode of entry of foreign firms into the UK	88
Table 8: GDP per head in 2005 (Purchasing Power Parities) - Deciles over NUTS 1 regions	111
Table 9: Selected comparator regions (NUTS 1)	112
Table 10: Comparator regions (NUTS 1) - number of businesses (local units) by sector (2005)	115
Table 11: Comparator regions (NUTS 1) – local business units, % of total by sector (2005)	116
Table 12: Available observations per indicator and deal type	117
Figure 1: Number of deals by region and type (total: 1996 – 2008)	3
Figure 2: Number of deals per 1,000 business units (total: 1996 – 2008)	3
Figure 3: Number of deals of all types by region 1996 - 2007	4
Figure 4: Trends in MBO activity in Europe (1981-2006)	15
Figure 5: Source of MBOs in Continental Europe and the UK in 2006	16
Figure 6: total number of MBOs per region (1997-2008)*	17
Figure 7: Annual number of MBO deals in Wales, Northern Ireland and Northern England (1997-2008)	18
Figure 8: Distribution of MBO deals across economic sectors (1997-2008)	19

Tables & Figures

Page

Figure 9: Number of MBOs deals per 1,000 local business units (1997-2008)	20
Figure 10: Average MBO deal value (1997-2008)	21
Figure 11: Average turnover of MBO target firms (1997-2008)	22
Figure 12: Average profit of MBO target firms (1997-2008)	22
Figure 13: Average assets of MBO target firms (1997-2008)	23
Figure 14: total number of employees in MBO target firms (1997-2008)	24
Figure 15: Number of employees in MBO target firms: median and maximum per region (1997-2008)	25
Figure 16: number of employees in MBO target firms in Wales (1997-2007)	25
Figure 17: Distribution of employee numbers in Welsh firms targeted by MBOs (1997-2008)	26
Figure 18: total number of transactions per region (1997-2008)*	29
Figure 19: Annual number of private-business transfers in Wales, Northern Ireland and Northern England (1997-2008)	29
Figure 20: Distribution of private business transfers across economic sectors (1997-2008)	30
Figure 21: Number of private-business transfers per 1,000 local business units (average 1997-2008)	31
Figure 22: Average deal value (1997-2008)	32
Figure 23: Acquirer country of origin in private business transfers targeting Welsh companies (1997-2008)	32
Figure 24: Average turnover of target firms (1997-2008)	33
Figure 25: Average profit of target firms (1997-2008)	34
Figure 26: Average assets of target firms (1997-2008)	34
Figure 27: total number of employees in privately-owned businesses targeted in ownership transfers (1997-2008)	35
Figure 28: Number of employees in target firms: median and maximum per region (1997-2008)	36
Figure 29: number of employees in privately-owned businesses targeted in ownership transfers in Wales, per year 1997-2007	37
Figure 30: Distribution of employee numbers in Welsh privately-owned businesses targeted in ownership transfers (1997-2008)	37

Tables & Figures

Page

Figure 31: total number of M&A deals per region (1997-2008)*	38
Figure 32: Annual number of M&A deals in Wales, Northern Ireland and Northern England (1997-2008)	39
Figure 33: Distribution of M&A deals across economic sectors* (1997-2008)	40
Figure 34: Average number of M&A deals per 1,000 local business units (1997-2008)	41
Figure 35: Average deal value (1997-2008)	42
Figure 36: Acquirer country of origin in M&A deals targeting Welsh companies (1997-2008)	42
Figure 37: Average turnover of target firms (1997-2008)	43
Figure 38: Average profit of target firms (1997-2008)	44
Figure 39: Average assets of target firms (1997-2008)	44
Figure 40: total number of employees in M&A target firms (1997-2008)	45
Figure 41: Number of employees in target firms: median and maximum per region (1997-2008)	46
Figure 42: number of employees in M&A target firms in Wales, per year 1997-2007	46
Figure 43: Distribution of employee numbers in Welsh firms targeted by M&A deals (1997-2008)	47
Figure 44: total number of IPOs per region (1997-2008)*	48
Figure 45: Annual number of IPOs in Wales, Northern Ireland and Northern England (1997-2008)	49
Figure 46: Distribution of IPOs across economic sectors (1997-2008)	50
Figure 47: Number of IPOs per 1,000 local business units (average 1997-2008)	51
Figure 48: Average value of IPO (1997-2008)	51
Figure 49: Average turnover of firms in IPOs (1997-2008)	52
Figure 50: Average profit of firms in IPOs (1997-2008)	53
Figure 51: Average assets of firms in IPOs (1997-2008)	53
Figure 52: total number of employees in firms in IPOs (1997-2008)	54
Figure 53: Number of employees in firms in IPOs: median and maximum per region (1997-2008)	55

Tables & Figures

Page

Figure 54: number of employees in Welsh firms in IPOs, per year 1997-2007	55
Figure 55: Distribution of employee numbers in Welsh firms in IPOs (1997-2008)	56
Figure 56: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) – annual turnover	58
Figure 57: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) – number of employees	60
Figure 58: Employees in companies undergoing an ownership change per 10,000 employed persons (2001-2007)	63
Figure 59: Probability of Continued Employment post-takeover	74
Figure 60: Number of deals per 1,000 business units (total: 1997 – 2008)	100
Figure 61: Distribution of GDP per head in 2005 (Purchasing Power Parities*) across NUTS 1** regions	110
Figure 62: Potential comparator regions (NUTS 1) – population* in 2005 (millions)	113
Figure 63: Comparator regions (NUTS 1) - number of local units*	114
Figure 64: Distribution of MBO deal values (1997-2008)	121
Figure 65: Distribution of annual sales, MBO targets (1997-2008)	123
Figure 66: Distribution of annual profits, MBO targets (1997-2008)	126
Figure 67: Distribution of assets, MBO targets (1997-2008)	128
Figure 68: Distribution of employee numbers, MBO targets (1997-2008)	131
Figure 69: Distribution of deal values of private business transfers (1997-2008)	134
Figure 70: Distribution of annual sales, targets of private business transfers (1997-2008)	137
Figure 71: Distribution of annual profits, targets of private business transfers (1997-2008)	140
Figure 72: Distribution of assets, targets of private business transfers (1997-2008)	143
Figure 73: Distribution of employee numbers, MBO targets (1997-2008)	146
Figure 74: Distribution of M&A deal values (1997-2008)	148

Tables & Figures

Page

Figure 75: Distribution of annual sales, M&A targets (1997-2008)	151
Figure 76: Distribution of annual profits, M&A targets (1997-2008)	154
Figure 77: Distribution of assets, M&A targets (1997-2008)	156
Figure 78: Distribution of employee numbers, M&A targets (1997-2008)	159
Figure 79: Distribution of IPO values (1997-2008)	162
Figure 80: Distribution of annual sales, IPOs (1997-2008)	164
Figure 81: Distribution of annual profits, IPOs (1997-2008)	167
Figure 82: Distribution of assets, IPOs (1997-2008)	169
Figure 83: Distribution of employee numbers, IPOs (1997-2008)	172

Executive Summary

Overview

This is an exploratory study of the available evidence on the impacts of changes in business ownership on employment and other company outcomes. The impacts suggested in the literature are dependant on many factors and so are difficult to generalise. Whilst there appears to be a relatively high rate of transactions in Wales, the level of employment change as a direct result of these transactions is likely to be tiny in comparison with overall levels of employment in Wales. This suggests that further investigation may be of limited value, though there is some indication that companies which are subject to ownership change in Wales are relatively productive and that the manufacturing sector is disproportionately represented relative to other sectors.

Introduction

This Report for the Welsh Assembly Government was prepared by LE Wales under Contract 112/2007/08.

The main aim of this study is to draw together economic evidence relating to the effect of a change in business ownership upon a range of firm outcomes; with particular focus on employment and wage impacts. The specification proposes that this be achieved through a presentation of trends in changes in business ownership and a review of existing economic and econometric evidence on the effects of changes in business ownership.

This exploratory study is in three parts. First, it presents data on changes in business ownership for Wales in comparison to nine other European regions; and second, it reviews the literature on the effects of changes in business ownership, particularly on employment and wages. Finally, we also provide some commentary on the evidence and what may be useful avenues for further policy-relevant research.

Business ownership transaction trends

In order to provide context for the Welsh experience of changes in business ownership, we present Welsh data alongside data on ownership changes in nine other European regions, which we selected on the basis of their comparability with Wales in terms of key socio-demographic indicators.

The comparisons with other regions provide useful context, and whilst there are some similarities between the comparator regions, it is important to remember that the regions are also very different from Wales in many respects. From the data presented here it is not possible to draw conclusions

about why Wales may differ from other regions in terms of changes in business ownership.

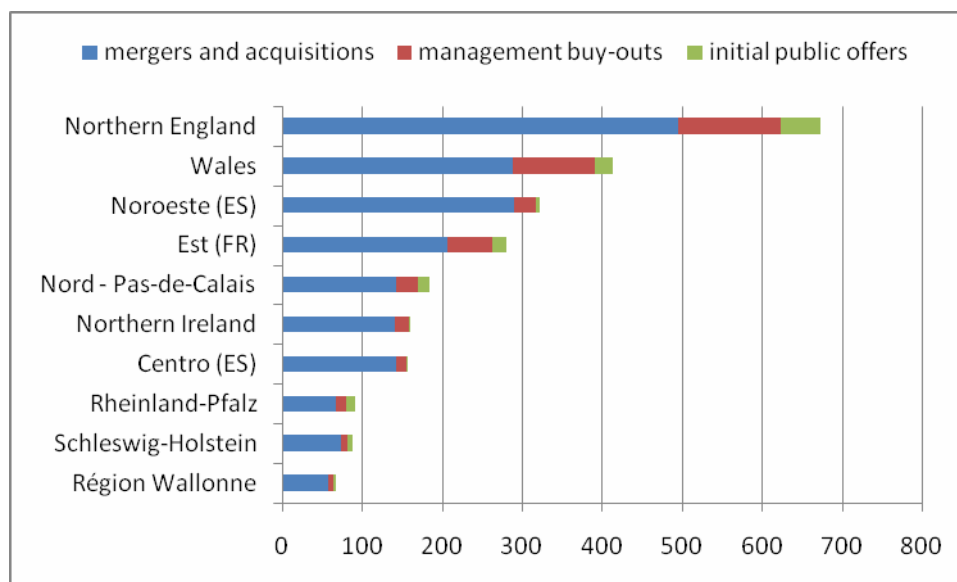
The quality of the data presented is variable. The main databases that are the source of the data presented include missing observations for most variables. In some case the extent of missing observations is large. Full details are provided in Annex 2.

In spite of its position as one of the smaller regions reviewed, Wales has relatively high numbers of changes in business ownership compared to the other selected regions, though not as many as Northern England (which incorporates the NUTS1 regions¹ of North East England and North West England), as shown in Figure 1. Across all ten regions, levels of merger and acquisition (M&A) activity were much higher than the numbers of management buy out (MBO) and initial public offer (IPO) transactions.²

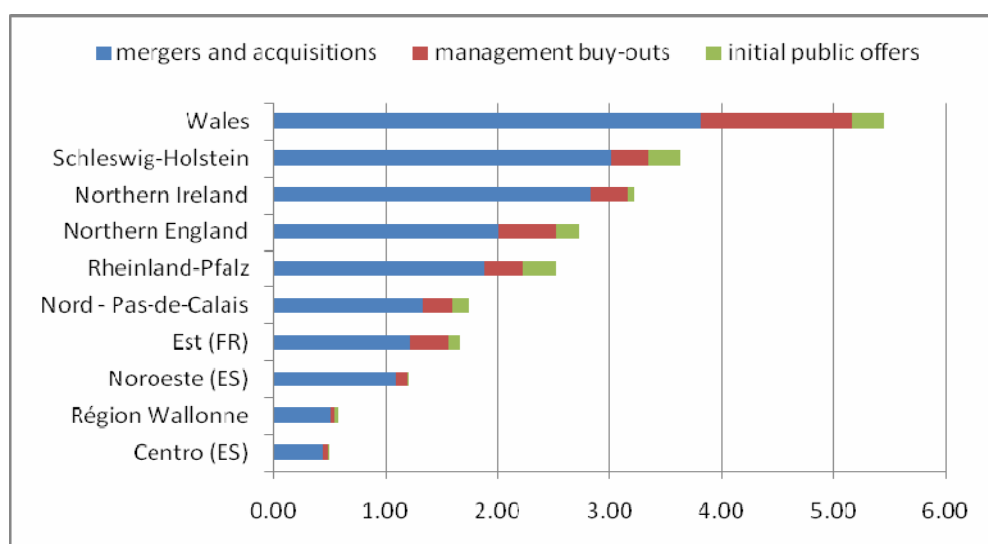
Wales also has a high rate of business ownership changes. Since 1996, Wales has had significantly more changes in all types of business ownership per local business unit than any of the other regions examined. This is also the case for two of the three types of ownership change reviewed – M&As and MBOs. Only one region has higher numbers of IPOs per local business unit. See Figure 2.

¹ This is a statistical classification of regions used across the European Union (Nomenclature d'Unités Territoriales Statistiques). Wales is a NUTS1 level region.

² An initial public offer involves the sale of shares to the public for the first time through a stock market launch.

Figure 1: Number of deals by region and type (total: 1996 – 2008)

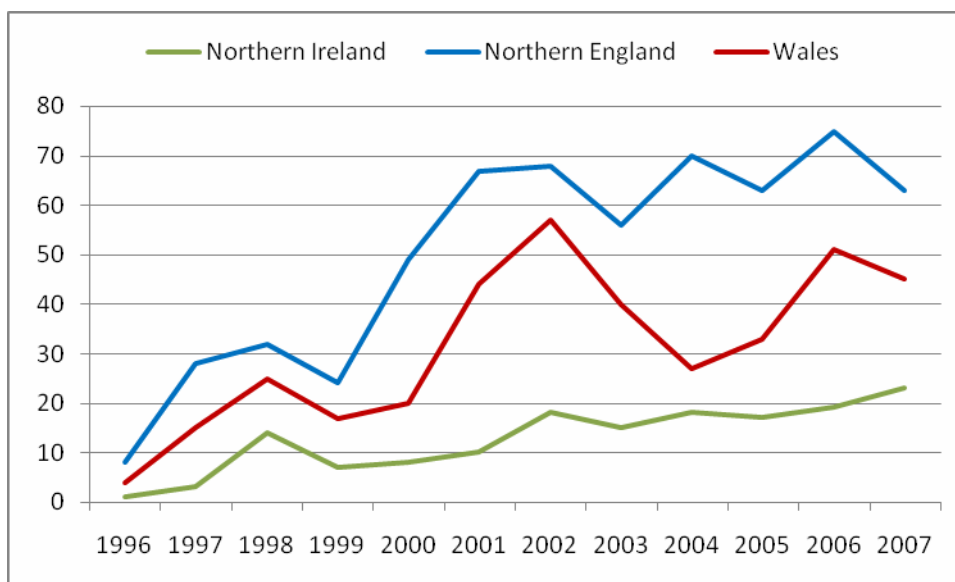
Source: Bureau van Dijk (ZEPHYR).

Figure 2: Number of deals per 1,000 business units (total: 1996 – 2008)

Source: Bureau van Dijk (ZEPHYR).

For most regions there has been a general upward trend in the number of transactions since 1996, though numbers fluctuate year on year. Figure 3 shows the trend for the three UK regions examined.

Figure 3: Number of deals of all types by region 1996 - 2007



Source: Bureau van Dijk (ZEPHYR).

Compared with the total number of working persons in Wales, the number employed in companies that are subject to a change in ownership appears to be very small. It is hard to be clear about precise numbers, due to the gaps in the data on the numbers of employees for companies that change ownership. Over the period 2001 to 2007 there may have been in the range of 12 to 30 employees in companies subject to an ownership change for every 10,000 persons employed in Wales. The number of workers affected by ownership changes is a bigger proportion of employment flows. The number of employees in companies subject to an ownership change was about 9% to 23% of net jobs created in the period 2003 to 2006.

When considering the implications of these figures it is important to consider the following:

- The data refer to all employees of companies subject to a change in ownership - the number of employees who lose their job following a change in ownership will be much smaller.

- Of those employees who do lose their jobs following a change in ownership, a proportion may have lost their jobs in any case, without any change in ownership.

These points suggest that employment changes arising from changes in business ownership in Wales are likely to be very small.

Evidence on the impacts of ownership changes

Overall, the range of evidence in the literature on the effects of changes in business ownership on employment, wages and company performance is rather limited. The range of studies is not wide, particularly when consideration is given to the conclusions that the impacts vary significantly depending on the circumstances of the change in business ownership. This leaves plenty of evidence gaps, with very little evidence in relation to many of those circumstances.

Nearly all of the evidence that does exist concerns the impacts of mergers and acquisitions and is based on firm or plant level data. This literature gives rather mixed signals. Nevertheless it is possible to draw out some broad themes, as follows.

The evidence on employment impacts is mixed, although most studies find that employment decreases after an ownership change. These effects appear stronger in Europe (including the UK) than in the USA and some authors attribute this to labour market rigidities in Europe. Data on Wales suggests that the potential effect of ownership changes on overall employment is very small.

An inherent problem with research in this area is the determination of the counterfactual. In essence, when looking at the performance of a company after an ownership change, the question is 'would this have happened anyway'. It is possible that the ownership change itself is the factor that causes the performance, but alternatively it could be that companies that experience an ownership change share some – perhaps unobservable – characteristics that a) predestine them to be taken over and b) cause their performance to differ from other companies in the market. This problem has not been explicitly addressed in some of the older studies that use US data; the more recent availability of matched employer-employee datasets, in particular in Sweden, have enabled more sophisticated types of analysis in recent years. Studies that address this issue are less likely to find significant negative effects on employment. In the absence of more studies of this nature, the extent to which this issue casts doubt on the earlier results, which typically find employment losses, is at present unclear. However, it suggests that hostility towards ownership changes based on presumed job losses could be misplaced. In this context it should also be noted that the proportion of the

workforce in Wales that is employed in companies that change ownership is very small.³

On wages, some studies report increases after an ownership change for all types of employees, but overall the evidence can be regarded as weak. In the UK, one key study finds no evidence of significant positive wage effects of acquisitions. There is some evidence that ownership changes increase skill levels in the target company and that other worker benefits, such as pension funds, are unaffected. Particularly strong evidence relates to the positive effects of foreign takeovers on productivity and skill levels. The latter effect is likely to occur with substantial lag after the change in ownership.

On the other hand, in a largely un-researched area of non-wage compensation, one study reports an example where ownership changes induce higher effort levels, which are not compensated through pay, and warn that this can reduce service quality.

The UK evidence of company profitability following takeovers is limited and provides mixed results, although the international evidence suggests positive effects of hostile, but not friendly takeovers. The data on Wales shows that companies that are larger and more productive are more likely to change ownership.

Interpretation

The data that we present suggest that both the number and the rate of transactions (per business unit) are high in Wales compared to the nine other regions chosen for comparison. In respect of other measures such as the value of deals and the profile of target companies (sales, profits, employee numbers), data for transactions in Wales do not appear very different from data for many of the other regions chosen for comparison.

This raises two key questions:

- Why is the rate of transactions higher in Wales?
- Does this high level of transactions matter? What impact is it likely to have on the Welsh economy?

Our analysis suggests that employment changes arising from changes in business ownership in Wales are likely to be very small and so in that sense, the higher level of transactions in Wales may not be important. There might be other factors that suggest that the companies that are subject to changes in ownership are important to the Welsh economy. Whilst limitations in the data mean that we are not able to show a clear link, the data is not inconsistent

³ See Section 7.2, p. 62.

with the proposition that companies subject to a change in ownership tend to be larger and to be more productive than the average in Wales. The data also clearly show that amongst companies subject to an ownership change in Wales there is a disproportionate representation of the manufacturing sector compared with its share of the overall company population.

If further investigation is warranted, a first step towards further understanding the significance of these issues is likely to be a wider analysis of the data to understand whether the rate of transactions in Wales would stand out from a much bigger sample of EU regions. This could usefully be supplemented by an empirical investigation of which factors drive differences in transaction rates.

The literature on the employment and wage impacts of changes in business ownership suggests that the impacts depend very much on the specific circumstances of the transaction. Important factors include motivation of the acquirer, extent to which the target company is in favour of the transaction, industry sector, type of ownership change, and extent of labour market rigidity. It is also important to understand that the evidence we review focuses on firm level and plant level data and so employment impacts, for example, relate to impacts at the level of the firm/plant. We did not find any evidence that would directly inform consideration of whether high transaction rates at the macroeconomic level are likely to impact on aggregate employment.

These characteristics of the evidence make it difficult to draw generic conclusions for Wales without a much more detailed analysis of the transactions that are taking place in Wales. Policy recommendations are not a part of this study, and the nature of the evidence means that such recommendations do not arise directly from our analysis.

An understanding of the motivation behind transactions in Wales and the nature and location of ownership could further understanding of the Welsh position in the context of the effects noted in the literature. A direct quantitative analysis of the impacts of changes in business ownership in Wales would be likely to provide more robust insights into whether and how transactions in Wales have impacted on employment levels and conditions and on company performance.

1 Introduction

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The exploratory study is in three parts. First, it presents data on changes in business ownership for Wales in comparison to nine other European regions; and second, it reviews the literature on the effects of changes in business ownership, particularly on employment and wages. Finally we also provide some commentary on what the evidence may suggest for policy in Wales and what may be useful avenues for further policy-relevant research.

1.1 Objectives

The main aim of this study is to draw together economic evidence relating to the effect of a change in business ownership upon a range of firm outcomes; with particular focus on employment and wage impacts. The ownership changes we look are represent transfers of ownership between private-sector entities. Privatisation, that is, transfers of ownership from the state to the private sector, was not considered directly relevant in Wales at present and is thus outside the scope of this study.

The specification proposes that the objectives be achieved through a presentation of trends in changes in business ownership and a review of existing economic and econometric evidence on the effects of changes in business ownership. In cases where ownership changes involve a transfer of assets from one company to another (acquisitions), or the creation of a new entity (mergers), the analysis focuses on data about the target company, rather than the acquirer.

The study was to involve desk-based research and consider evidence relating to the characteristics driving the observed outcomes and identify any spatial or industrial variations in these outcomes. These may include for example, type of ownership change, industry trends, occupational trends, firm size, firm structure, and the origin of new owners in acquisitions.

The main focus was to be on evidence relating to the UK (and to Wales, if available), but taking account of evidence from other OECD countries and evidence relating to regional aspects.

1.2 Report structure

Chapter 2 discusses the availability of data on changes in business ownership.

Chapters 3 – 6 present data on changes in business ownership by type of ownership change – MBOs, family/ private business transfers, M&A, IPOs.

Chapter 7 provides additional context for the Welsh data, including information on firm size, employment and the industrial mix.

Chapter 8 reviews the available economic and econometric literature.

Finally, Chapter 9 interprets the earlier material and makes suggestions for where further research might be useful in a Welsh policy context.

2 Data on changes in business ownership

The first part of this study is a descriptive account of the empirical reality of changes in business ownership in Wales. In order to provide context for the Welsh experience, we also look at ownership changes in other European regions, which we selected on the basis of their comparability with Wales in terms of key socio-demographic indicators.

After briefly discussing our choice of comparator regions, we present in the following sections a list of quantitative indicators covering

- The incidence of changes in business ownership;
- The profile of firms that are subject to a change in ownership;
- The scale of the impact of ownership changes on employment;

for four different types of ownership change (M&A, MBO, IPO, as well as family business transfers). The data show that Wales is one of the more active regions we examined, in terms of ownership changes over recent years, and that the number of transactions is increasing over time.

In many cases, the data is characterised by the presence of outliers, which makes it difficult to capture the distribution in a summary statistic, such as the mean or the median. We provide the complete distributions of the variables in Annex 2.

2.1 Providing context for Welsh data

In order to provide some context for data on ownership changes in Wales, we have presented Welsh data alongside data for 9 other EU regions. We believe that a regional comparison is likely to be more useful than comparison with member states both because it enables the choice of comparators that are more similar in terms of key socio-economic indicators and because of the way that the data is constructed.

Databases covering ownership changes typically assign locations to companies based on their registered head offices. Thus a change in ownership of a UK company, headquartered in London, that maintains production facilities in Wales, would be included in data for Greater London, not for Wales. Assuming a similar inter-regional distribution of firms within a country means that regions with a similar profile can be compared across countries, as the proportion of ‘missing’ companies (which are not registered, but nonetheless present in the region) may be more likely to be similar. None of the regions included in our comparison are national capital city regions

After selecting comparator regions based on income, population and other factors,⁴ we are left with regions both within the United Kingdom and on the continent. Both types offer a slightly different angle on the issue:

- *The European comparison.* The comparison with other regions of the European Union serves largely to locate the Welsh experience within a broader context, reflecting international economic trends on the one hand, and national particularities on the other.
- *The intra-UK comparison.* The comparison of Wales with other regions in the UK, on the other hand can shed light on differences between regions that are subject to similar macroeconomic, legal and cultural environmental factors. Any divergence in observed outcomes can consequently help to refine the identification of factors that drive the occurrence of ownership changes and their effects.

The comparisons with other regions provide useful context, and whilst there are some similarities between the comparator regions, it is important to remember that the regions are also very different from Wales in many respects. From the data presented here it is not possible to draw any strong conclusions about why Wales may differ from other regions in terms of changes in business ownership. A careful analysis of industrial structure, institutional framework conditions, as well as trade flows and other socio-demographic characteristics, which far exceeds the scope of this project, would be required to attempt a rigorous analysis of the determinants of regional ownership changes. The extent to which this may be possible with further analysis is discussed in the concluding Chapter of this report.

⁴ The selection process is explained in more detail in the next section.

2.2 Data sources

Before we go on to present a quantitative overview of ownership changes in the selected regions, we briefly discuss the main sources that underlie our portrait.

2.2.1 ZEPHYR and AMADEUS

ZEPHYR

The Zephyr database is published by Bureau van Dijk and provides a comprehensive source of information on all types of ownership changes. Its coverage is global, but UK and European companies are covered in particular detail.

ZEPHYR provides information on the following deal types:

- Acquisitions,
- Initial Public Offers,
- Institutional buy-outs,
- Management buy-ins,
- Management buy-outs,
- Mergers

For each deal, the database provides extensive information on deal characteristics (e.g. deal status, deal value, percentage of stake), as well as detailed profiles on the companies involved (target, acquirer, seller), including company financials and stock data.

For the purposes of this report, we use data on deal type, information on the geographic location of target firms, and basic financial data on target firms. We only included deals that are completed at the time of writing. Where the post-transaction stakes are known, we impose a minimum value of 50.1% to avoid counting acquisitions of minority stakes.

Amadeus

AMADEUS, also published by Bureau Van Dijk, is a comprehensive, pan-European database containing detailed information on over 8 million public and private companies in 38 European countries. Bureau Van Dijk assembles data from a number of regional information providers and compiles them into a single database, which provides information in a standardised format that is comparable across countries.⁵

We use AMADEUS to add information regarding the public/private status, as well as on the number of workers employed in target companies to the ZEPHYR dataset that contains the transactions information.

Companies that cannot be matched with AMADEUS data on ownership status are assumed to be private, on account that information on whether a company is publicly traded or not is unlikely to be missing from the database.

Note that both ZEPHYR and AMADEUS contain missing observations in at least some of the variables. All indicators shown in this report are computed over the available sample of non-missing observations. Where totals are provided, for example in the case of employee numbers per transaction type, this means that the figures shown represent lower-bound estimates, as the contribution of companies that with incomplete employment data is not included in the sum. Details of the extent of missing observations are provided in Annex 2.

NUTS regions in ZEPHYR and AMADEUS

ZEPHYR and AMADEUS assign companies to countries and regions based on the location of their registered head offices. Information on the location of individual plants, outlets, or other facilities is not provided in the database.

As we conduct our analysis on a regional, rather than national basis, we use the definition of regions as provided by Bureau van Dijk. However, Bureau van Dijk does not use a consistent regional classification (e.g. NUTS) throughout; instead regional boundaries are in some cases based on national postal districts.

While for the most part these can be easily compiled into NUTS 1 regions, which form the basis of our analysis, certain discrepancies in the delineation of boundaries exist in the UK and Germany, specifically in the North East and North West of England and in Rheinland-Pfalz and Schleswig-Holstein.

⁵ For the UK, AMADEUS makes use of the FAME database, also published by Bureau van Dijk.

Based on the geography of the regions in question, we consider this problem to be insignificant in the case of the two German regions. For Northern England, instead of the two separate NUTS 1 regions, we use the “Northern” region (as defined in AMADEUS and ZEPHYR) that comprises all of the NUTS 1 region “North East” and the northern part of the NUTS 1 region “North West”.

2.2.2 Centre for Management Buy-Out Research (CMBOR)

In the case of management buy-outs we are able to supplement ZEPHYR data with data provided by the Centre for Management Buy-Out Research (CMBOR), which is located at Nottingham University Business School. We use this information in section 1 (p. 27).

However, CMBOR provides regional data only for the UK, while European data is available at the country level.

According to the CMBOR methodology⁶, transactions such as management buy-ins (MBIs), institutional buy-outs (IBOs), and more complex transactions, which involve buy-outs by groups including the management, but not restricted to it (BIMBOs) are all classified as MBOs.

Regardless of transaction type, in order to be included, over 50 per cent of the issued share capital of a company has to change ownership. In addition, companies must be structurally independent (i.e. not a subsidiary) after the buy-out is completed. Finally, as with the ZEPHYR/AMADEUS data, transactions are assigned to regions based on the location of the headquarters of the target company.

⁶ See <http://www.nottingham.ac.uk/business/cmbor/methodology.pdf>.

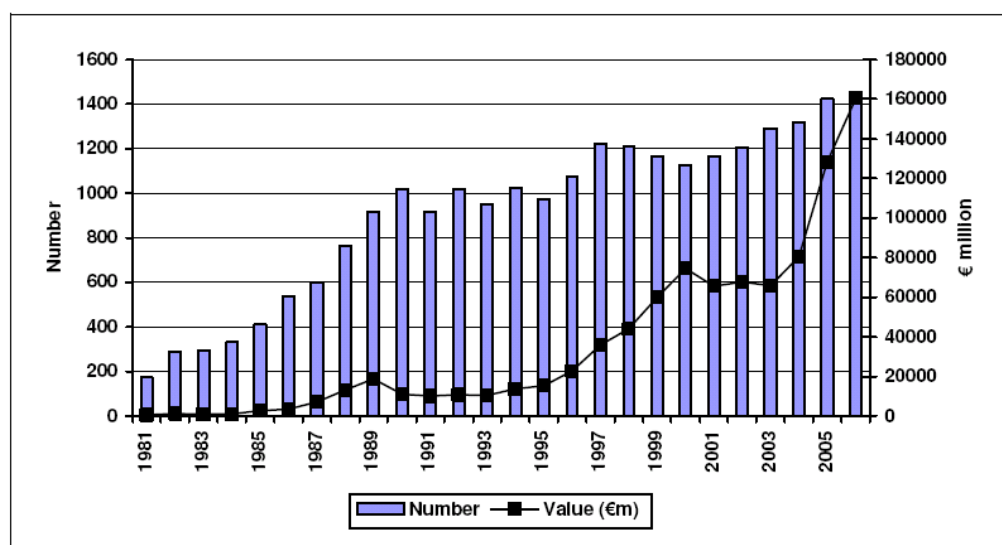
3 Management buy-outs

3.1 Incidence of MBOs

Management buy-outs are ownership changes where the existing management team takes over the business from its previous owners. Included in the category in our dataset are also management buy-ins and institutional buy-outs.

Figure 4 shows that MBO activity has been increasing sharply over the years, both in volume and in value terms. Recent years have seen another all-time high in activity in Europe.

Figure 4: Trends in MBO activity in Europe (1981-2006)



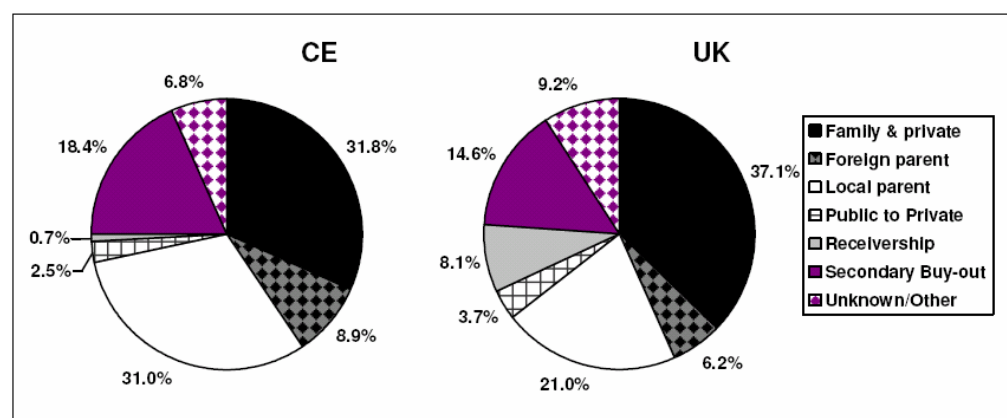
Source: CMBOR/Barclays Private Equity/Deloitte.

Although both value and volume of MBOs are increasing throughout Europe and 2006 has been another record year, the UK is still by far the largest market in terms of transactions. The CMBOR reports that the UK has been recording more than 3 times as many transactions in 2006 as the next most active market, France.

The structure of MBOs in terms of source shows that significant differences exist between the UK and other European markets. Taken together, divestments by foreign and national parent companies are the biggest single

source of MBOs in continental Europe, accounting for around 40% of the total. In contrast, in the UK, they make up only about 27% of all transactions. Family/private enterprises, which are the most important source of MBOs overall, are even more prevalent in the UK (Figure 5). The underperformance of family-run businesses in the UK may be a factor that contributes to explaining this result.⁷

Figure 5: Source of MBOs in Continental Europe and the UK in 2006



Source: CMBOR/Barclays Private Equity/Deloitte.

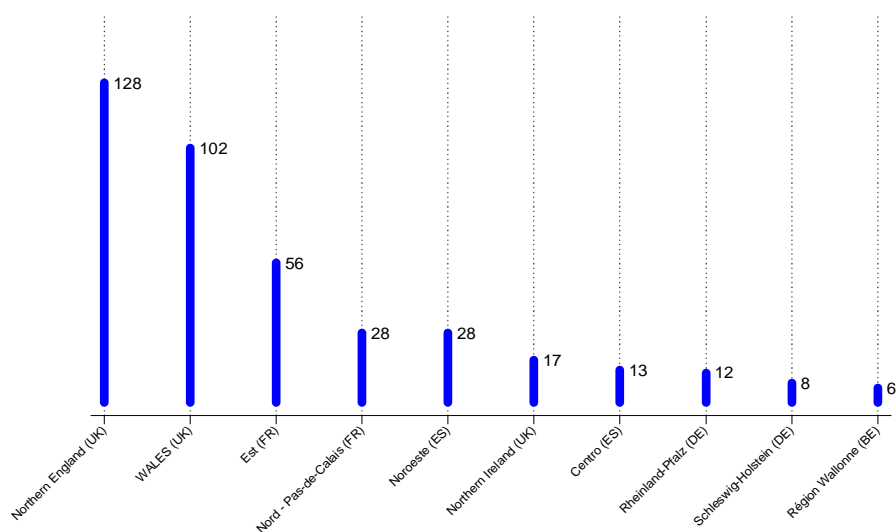
Northern England and Wales are at the top of our list of ten EU regions when it comes to the frequency of MBOs since 1997 (Figure 6). The number of deals is considerably higher than in any of the other regions. Interestingly, the figures suggest a national hierarchy in terms of MBO counts, with UK regions at the top, Spanish and French regions in the middle, and German and Belgian regions towards the bottom of the spectrum.

This could reflect either differences in economic performance over the period (which tended to be sluggish in Germany, for example), or differences in business culture, perhaps reflecting a more transactions-based approach to business development in the UK.

⁷ See Bloom and Van Reenen (2007).

When we look at a time series of MBO deals for the three UK regions in our sample (Figure 7), we find similar trends in Wales and Northern England. Overall, despite a sharp drop in the number of transactions in 2004 (which appears with a one-year lag in Wales), we find that MBOs have been occurring with increasing frequency between 1997 and 2008.

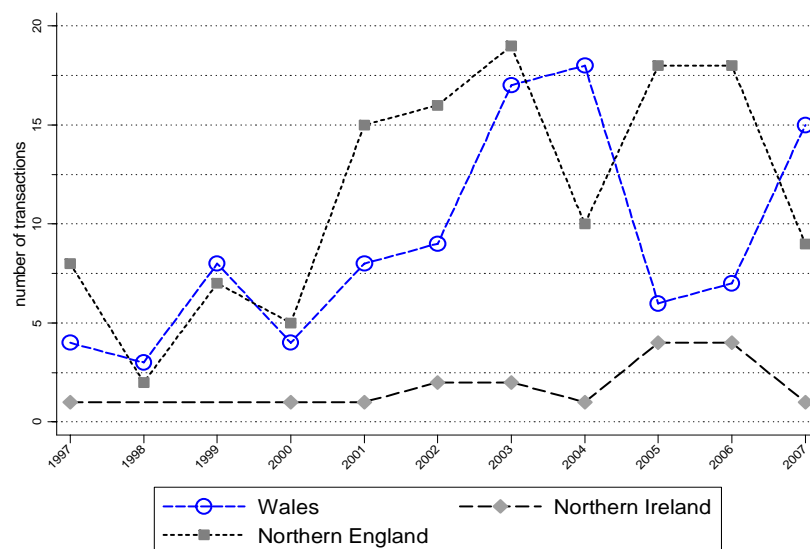
Figure 6: total number of MBOs per region (1997-2008)*



Note: * data for Noroeste goes back to 1996; data for Rheinland-Pfalz goes back to 1998. A company can be involved in several deals during the period, each of which included in the count.

Source: Bureau van Dijk (ZEPHYR).

Figure 7: Annual number of MBO deals in Wales, Northern Ireland and Northern England (1997-2008)

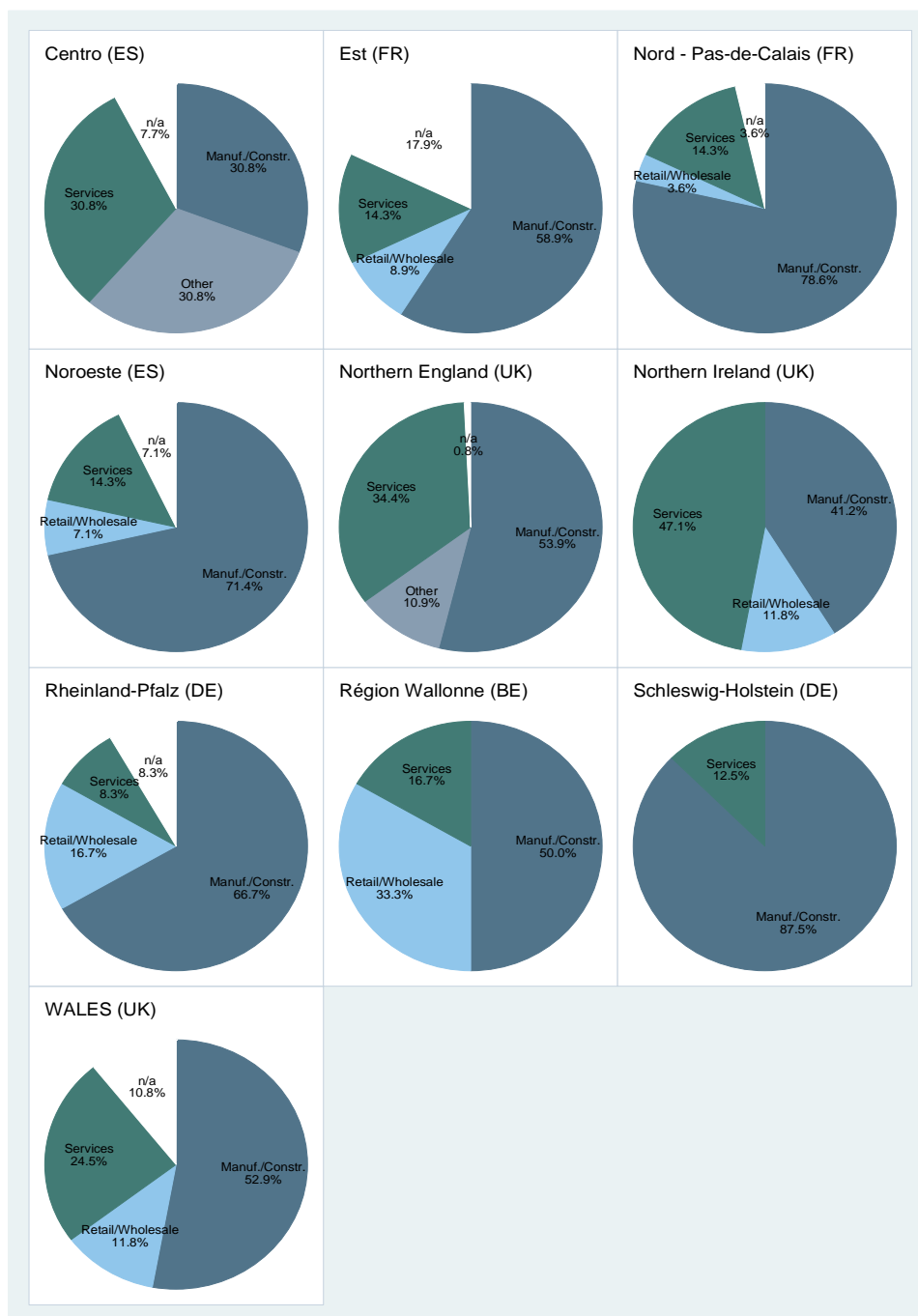


Source: Bureau van Dijk (ZEPHYR).

The graph on the following page shows how MBO transactions are distributed across industrial sectors. In what we shall see is a common pattern, MBOs are most common in the manufacturing sector, which is the focus of MBO activity everywhere except the Walloon Region in Belgium (in Centro, Spain, the largest fraction of transaction occurred in businesses where the sector is unknown).

We can also see that a broader range of sectors is affected by MBOs in the UK than in most other regions. To the extent that this is not simply a function of the greater number of recorded transactions, this might reflect differences in existing ownership arrangements and business practices.

Figure 8: Distribution of MBO deals across economic sectors (1997-2008)



Note: * sectors according to NACE (revision 1.1):

"Manufacturing & Construction" = NACE sections D-E - Manufacturing, utilities, construction;

"Services" = NACE sections H-O - Services

"Retail/Wholesale" = NACE section G - Wholesale, retail;

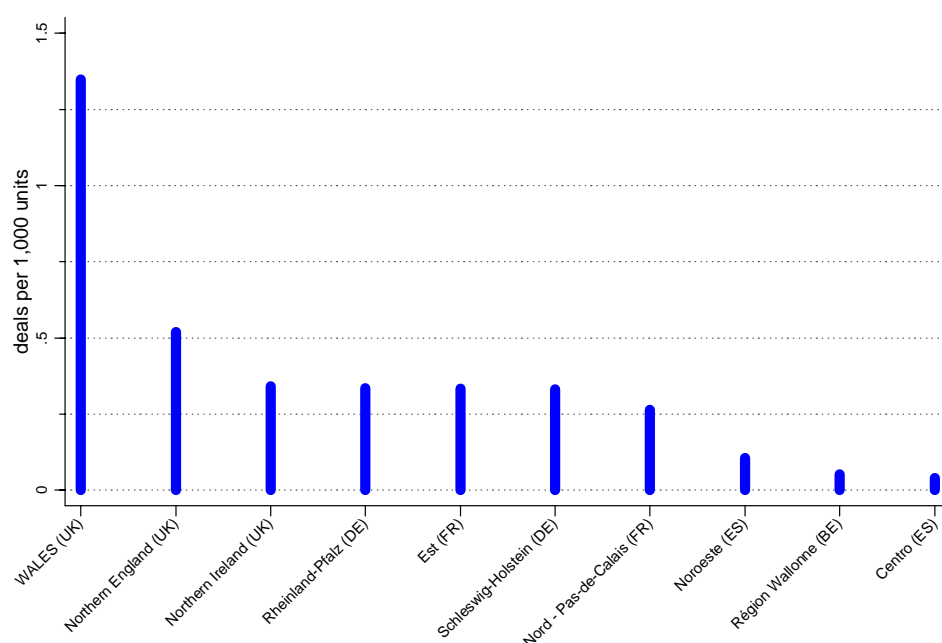
"Agriculture & Mining" = NACE sections A-C - Agriculture, mining.

"Other" = smallest of above categories (varies by pie chart)

Source: Bureau van Dijk (ZEPHYR).

When we compare the number of local business units with the number of MBOs, we find that in Wales there was more than one MBO for every 1,000 units, far more than in any other region in our sample. As we mentioned above, it is difficult, without further detailed analysis, to use these figures to draw conclusions about why businesses in Wales appear to experience more management buy-outs than in other regions.

Figure 9: Number of MBOs deals per 1,000 local business units (1997-2008)

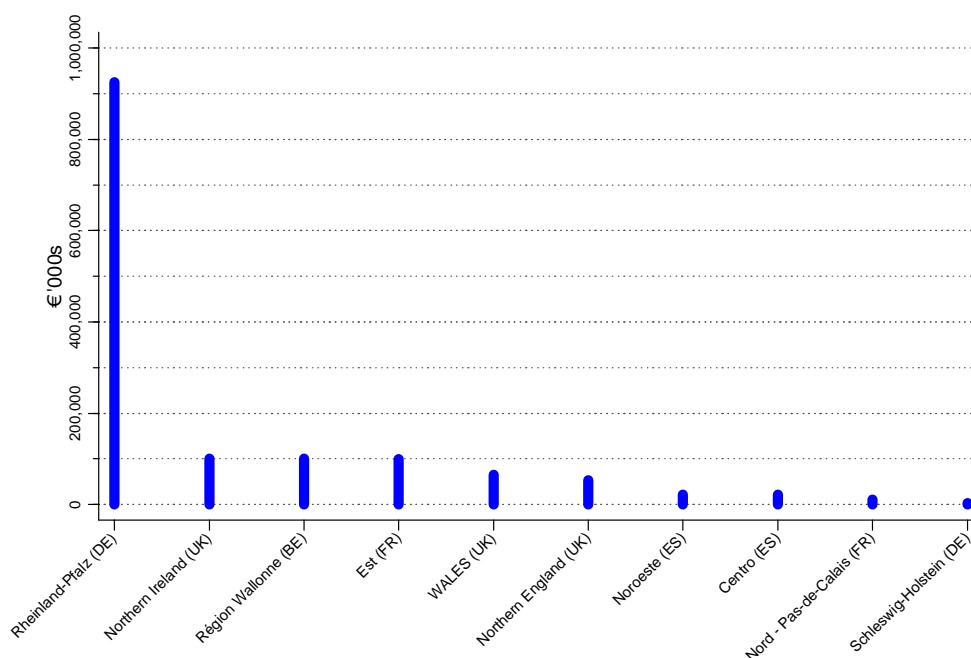


Note: local business unit: see note to Table 10 above.

Source: Bureau van Dijk (ZEPHYR).

In terms of average deal value, Wales shows relatively low values, along with Northern England. The large discrepancy between the high average value observed in Rheinland-Pfalz and the rest of the regions is evidence of exceptional events taking place infrequently, rather than structural differences between regions. However, a low average value could suggest that MBOs affect wider parts of the economy, being a more common element of regional business practice.

Figure 10: Average MBO deal value (1997-2008)

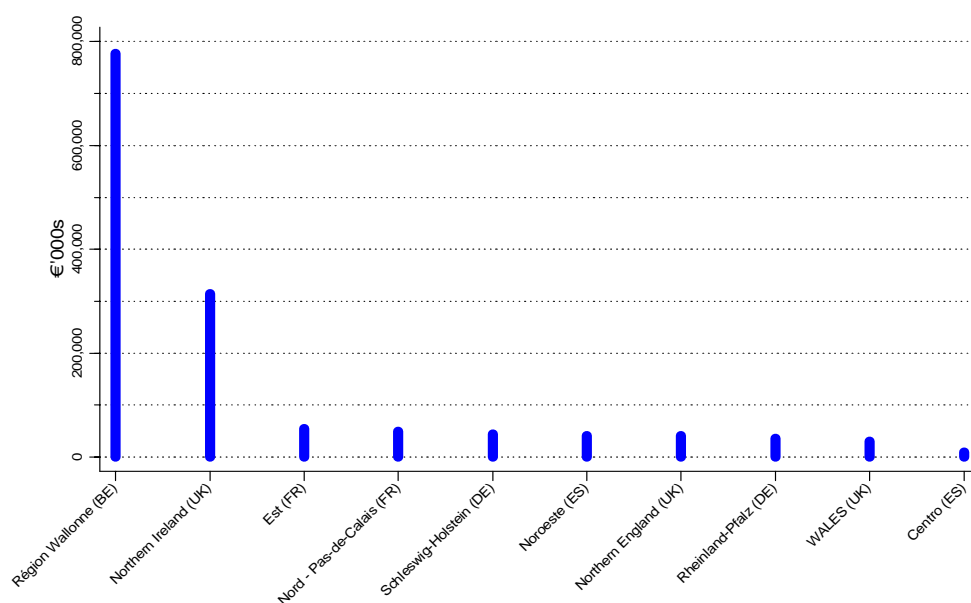


Source: Bureau van Dijk (ZEPHYR).

3.2 Profile of target firms

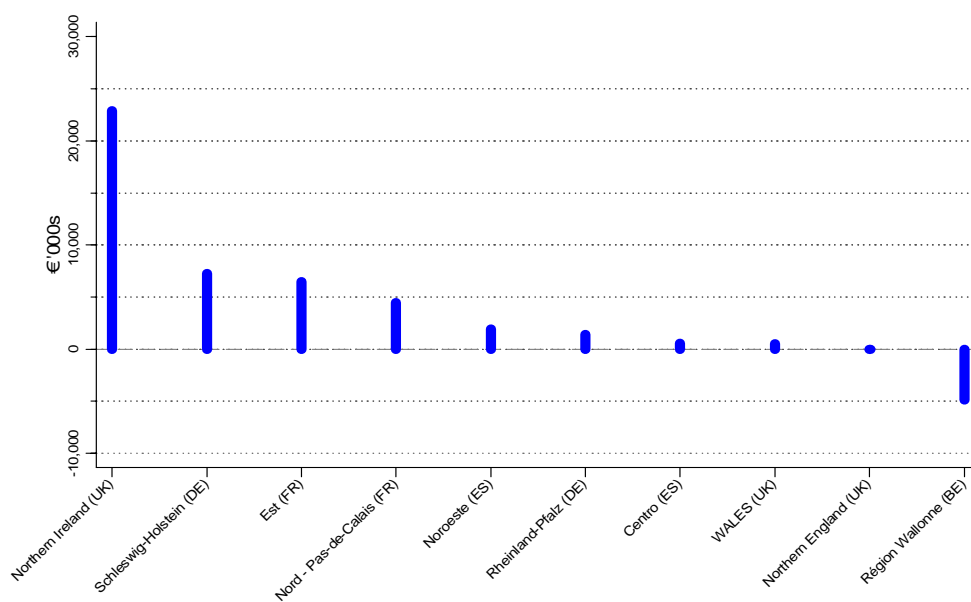
The following tables show a brief portrait of the average firm undergoing a management buy-out. We use mean turnover, mean profit and mean assets to characterise target companies. In a number of cases, the results presented below are based on very few observations. The high turnover in Région Wallonne, for example, is caused largely by a single, very large MBO, as are the high profit figures in Northern Ireland and Schleswig-Holstein and the large target firm assets in Rheinland-Pfalz. For details on the distributions of these variables, see Annex 3 (pp. 117-172).

Figure 11: Average turnover of MBO target firms (1997-2008)



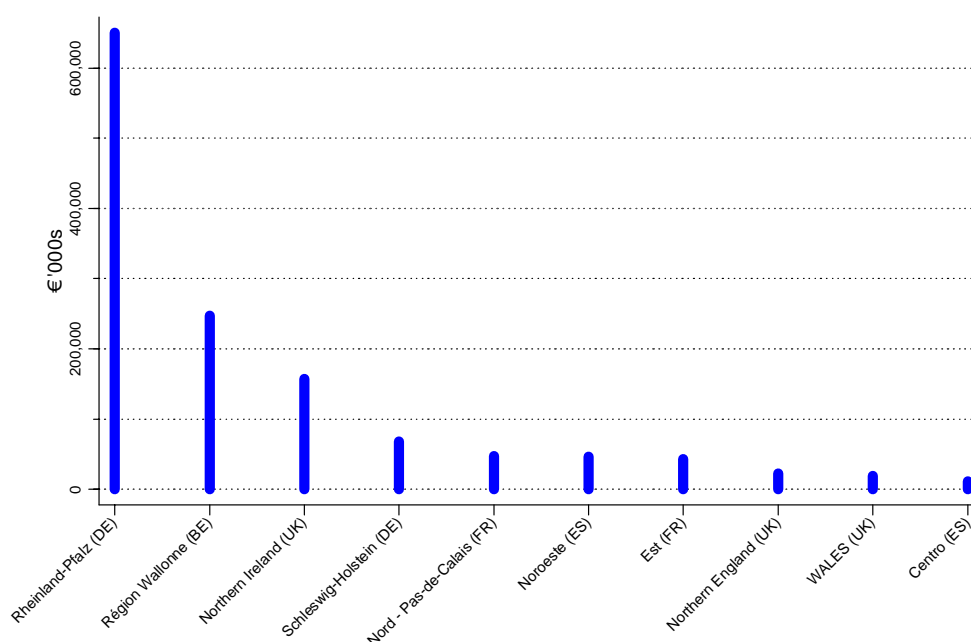
Source: Bureau van Dijk (ZEPHYR).

Figure 12: Average profit of MBO target firms (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 13: Average assets of MBO target firms (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

3.3 Employment

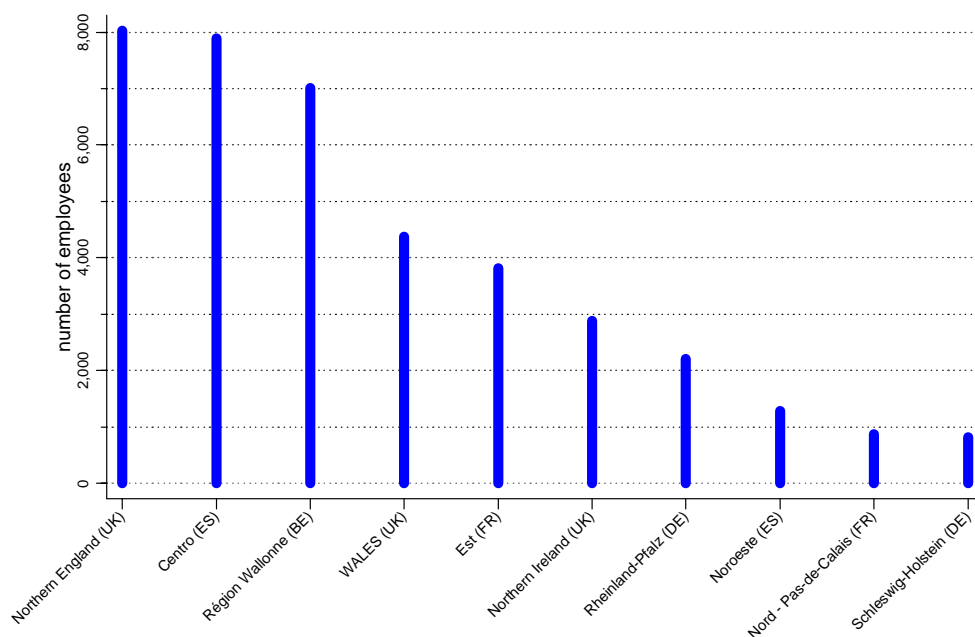
This section looks at the number of employees working in companies experiencing an MBO. The employee figures are based on mandatory company filings contained in the AMADEUS database. As employment figures are not always included in these filings, and as company accounts might not always take all employees into account (e.g. in the case of people employed in wholly-owned subsidiaries), the data we present here might understate the number involved.

We can see in Figure 14 that the numbers involved are relatively small, in the order of a few thousand people over the period 1997 to 2008. We find Wales in fourth position from the top, which, given the relatively large number of deals, suggests that the employment effects of any individual deal – if such effects exist – are likely to be small. Indeed, as the distribution of employee numbers shows (Figure 17), MBOs involving firms with more than 600 employees are a rarity in Wales.

Moreover, there seems to be no clear relationship between median and maximum employee numbers, which can show very large differences (Figure

15). The average firms that are bought out by their management employ a few hundred people, while occasionally such transactions can involve up to 2,000. Anything higher than this is likely to be exceptional. The exact distribution of employee figures in Wales is shown in Figure 17.

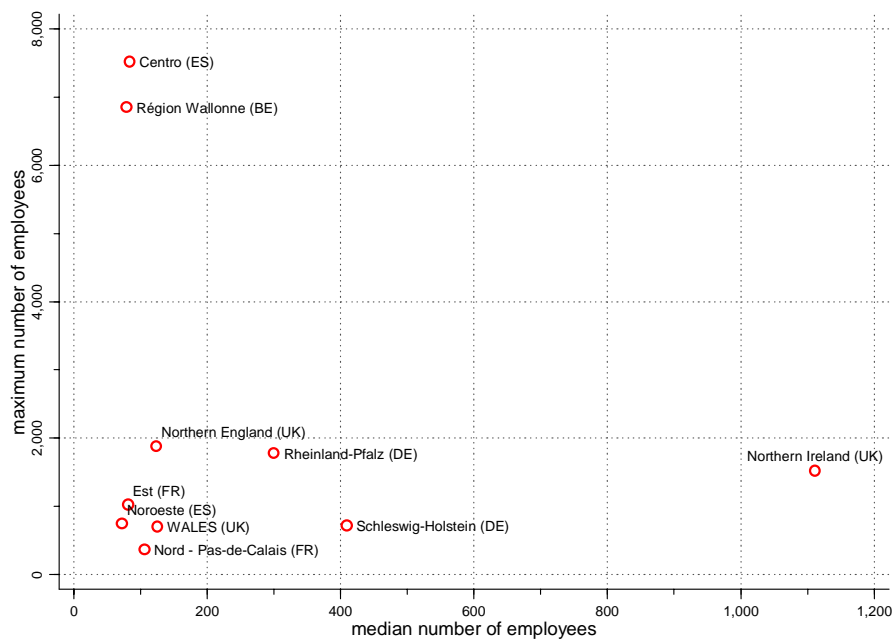
Figure 14: total number of employees in MBO target firms (1997-2008)



Note: the bars show the sum of employees in affected firms over the 12 year sample period.

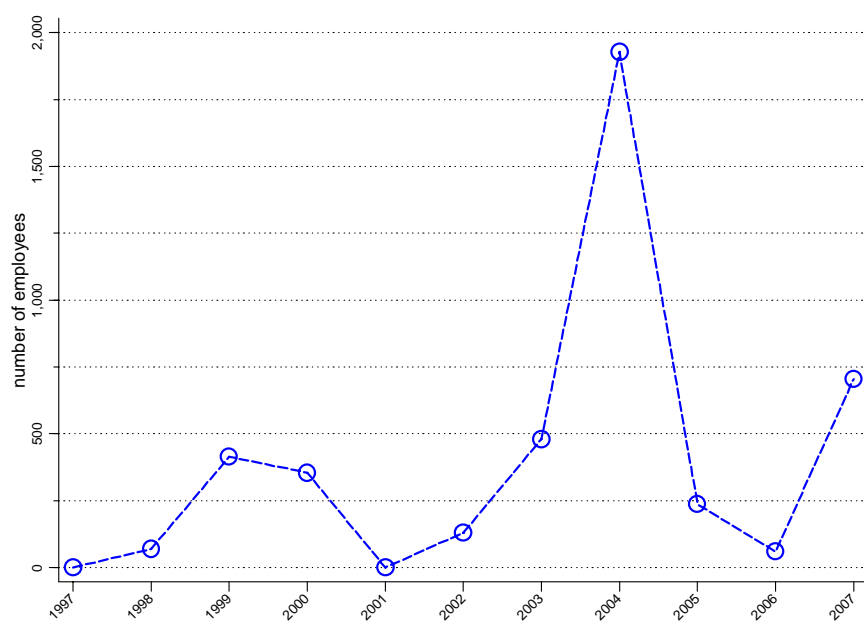
Source: Bureau van Dijk (ZEPHYR).

Figure 15: Number of employees in MBO target firms: median and maximum per region (1997-2008)



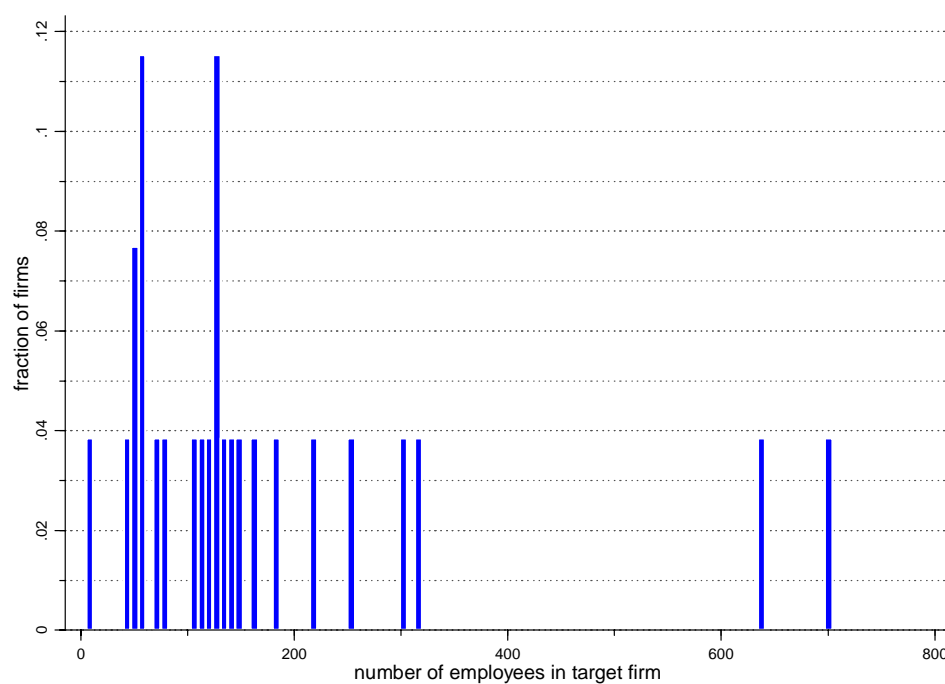
Source: Bureau van Dijk (ZEPHYR).

Figure 16: number of employees in MBO target firms in Wales (1997-2007)



Source: Bureau van Dijk (ZEPHYR).

Figure 17: Distribution of employee numbers in Welsh firms targeted by MBOs (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

4 Family business/private company transfers

4.1 Incidence of transfers

The project terms of reference required us to consider changes in ownership of family businesses, but available information on the transfer of ownership of family businesses is limited and largely confined to surveys of small businesses. However there appears to be a large overlap between the set of family-owned businesses and the set of privately owned businesses. Data on privately owned businesses is more widely available, which is why we use it in this section to approximate the situation of family-owned businesses. Before turning to that, we give a brief indication of what some of the survey data on family-owned businesses suggests.

The DTI Survey of SMEs for 2005, for example, notes that across the UK around two thirds of the sample of SMEs were family owned (“majority owned by members of the same family”), with this proportion being the same for those businesses both with and without employees.⁸ Smaller businesses were more likely to be family owned as were businesses in the primary and construction sectors. The Welsh element of this survey showed a higher proportion of family owned businesses amongst Welsh SMEs – 77%. Figures for previous years in Wales were 80% in 2004; 60% in 2003; and 64% in 2002.

In the DTI survey, SME owners were asked whether they envisaged a closure or full transfer of the business’s ownership during the next five years. 22% anticipated closure or a transfer of ownership during that period, though only 4% had a business transfer plan in place. Expectations about ownership transfer for Welsh SMEs were very similar to those for UK SMEs at 24%.

In a more recent survey of UK family businesses in 2007/08, PwC reported that 28% of family business owners anticipated a change in ownership in the next five years, though for 44% of these companies ownership is anticipated to remain in the family, with a trade sale anticipated for 22% and sale to the management team expected for 17%.

As there is no classification in AMADEUS that identifies businesses as family owned, in the remainder of this section we use data for private companies (i.e. companies that do not sell shares to the public) as a first approximation.

⁸ The Omnibus Survey of Small Businesses in Scotland found that 69% of SME’s in Scotland were family-owned in 2002. Bloom and Van Reenen (2007) report that 30% family ownership in the UK.

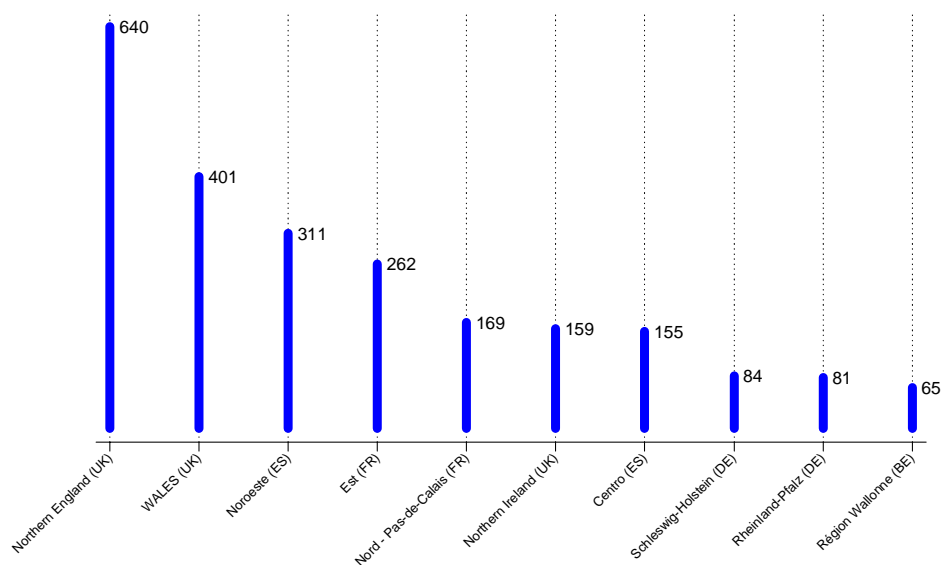
Information on the legal form of companies is reported in the AMADEUS database. As explained above, we treat all companies as private companies that are not listed as public. It should be noted that the variable recording the legal form of companies is based on self-reporting, and is often missing. Moreover, since reporting requirements for privately held companies are typically less extensive, the amount of information on transactions involving such companies in AMADEUS is more limited.

The transactions covered in the tables below include management buy-outs, management buy-ins, mergers, acquisitions, and institutional buy-outs.

As we have seen in section 3 (Figure 5), family businesses appear to be particularly attractive for MBO investors, and represent the largest source of MBOs in the UK, including Wales.

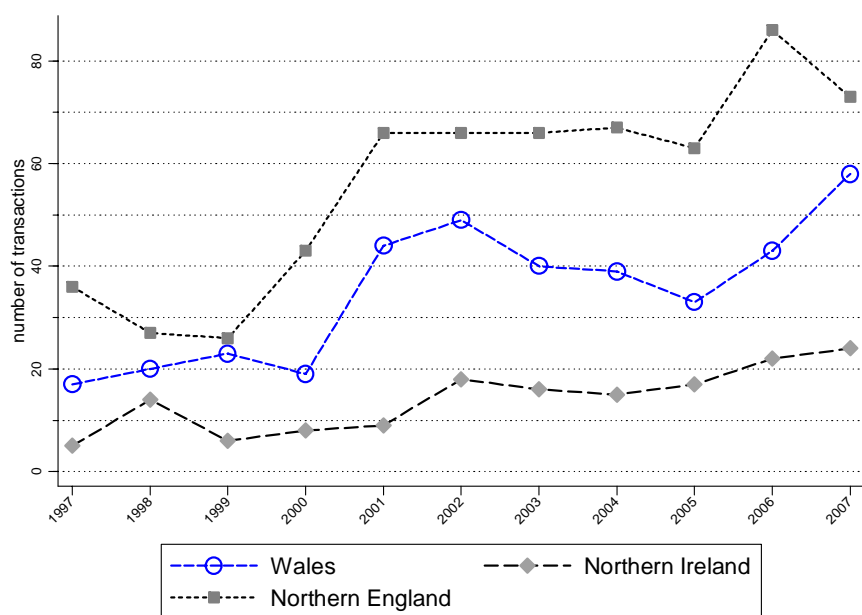
At several dozen per year, the number of recorded changes in the ownership of private businesses in Wales is relatively large considering the size of the Welsh economy (Figure 18).

All three of the UK regions in our sample has seen an increase in the number of ownership changes over recent years. These seem to follow the same trend (Figure 19). The changes are comparatively evenly distributed across sectors, although again manufacturing stands out as the sector most likely to experience changes in ownership. A second focal point for takeover activity for private businesses is the retail sector, as can be seen in Figure 20.

Figure 18: total number of transactions per region (1997-2008)*

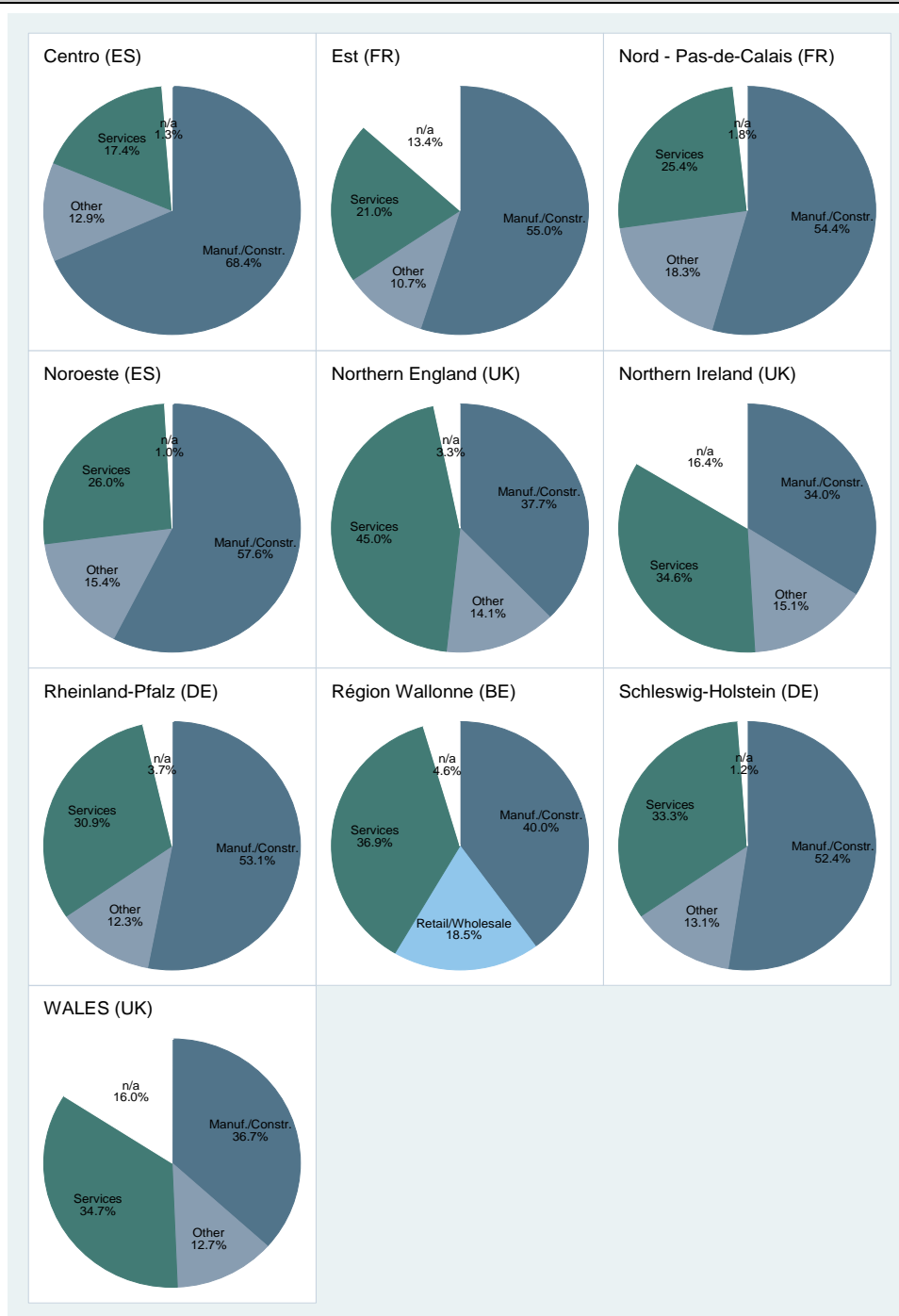
Note: * data for Noroeste goes back to 1996; data for Rheinland-Pfalz goes back to 1998. A company can be involved in several deals during the period, each of which included in the count.

Source: Bureau van Dijk (ZEPHYR).

Figure 19: Annual number of private-business transfers in Wales, Northern Ireland and Northern England (1997-2008)

Source: Bureau van Dijk (ZEPHYR).

Figure 20: Distribution of private business transfers across economic sectors (1997-2008)



Note: * sectors according to NACE (revision 1.1):

“Manufacturing & Construction” = NACE sections D-E - Manufacturing, utilities, construction;

“Services” = NACE sections H-O - Services

“Retail/Wholesale” = NACE section G - Wholesale, retail;

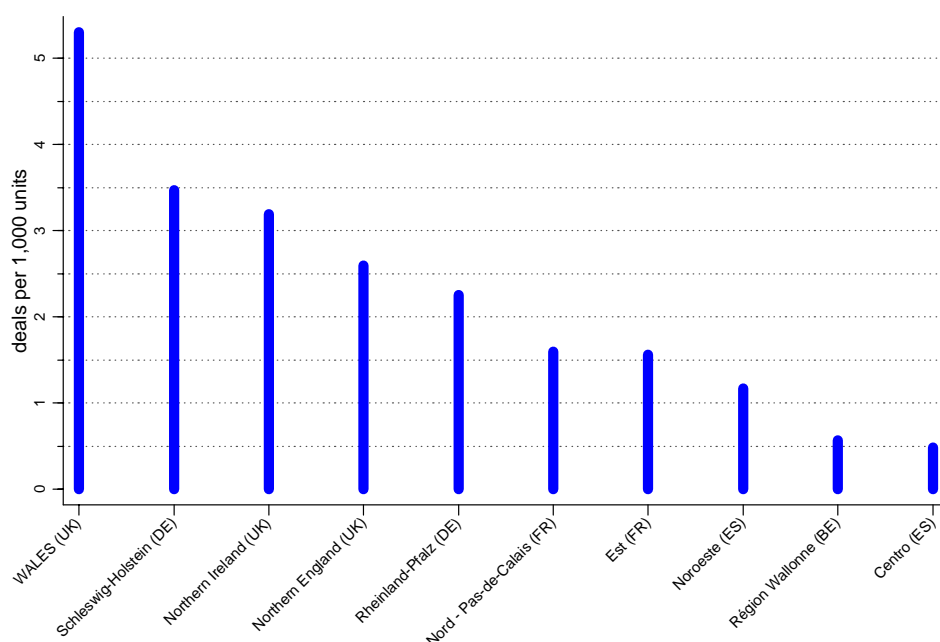
“Agriculture & Mining” = NACE sections A-C - Agriculture, mining.

“Other” = smallest of above categories (varies by pie chart)

Source: Bureau van Dijk (ZEPHYR).

Again, Wales stands out for the number of firms involved as targets in business ownership changes compared with the total stock of local business units. Deal values, on the other hand, are relatively low compared with other regions.

Figure 21: Number of private-business transfers per 1,000 local business units (average 1997-2008)

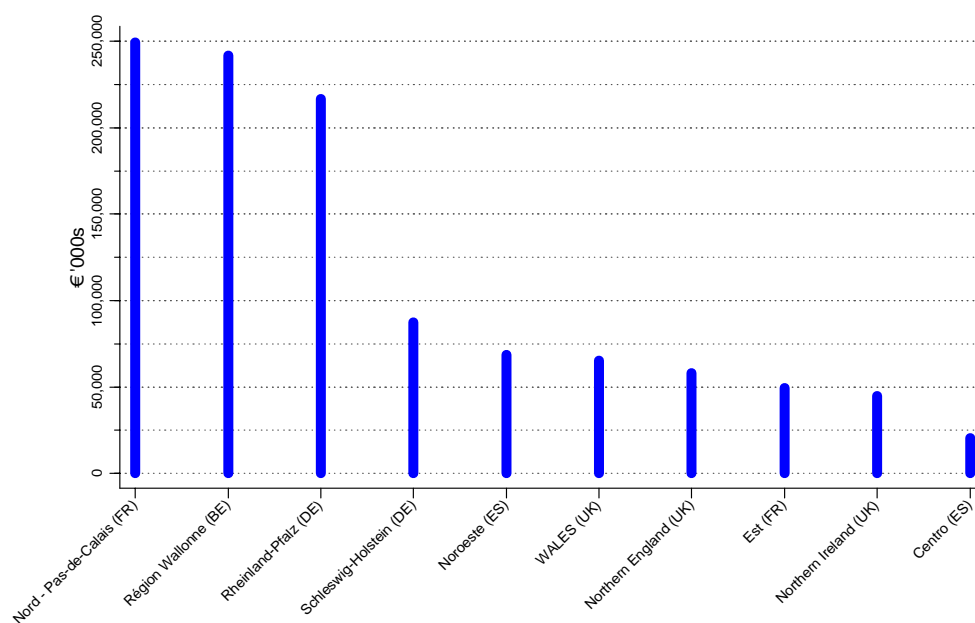


Note: local business unit: see note to Table 10 above.

Source: Bureau van Dijk (ZEPHYR).

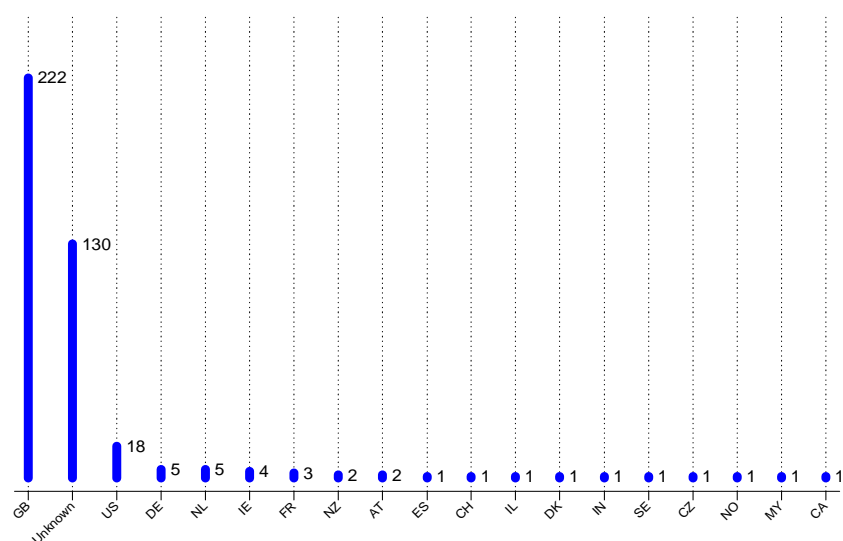
A look at the country of origin of acquiring firms reveals that ownership of Welsh companies mostly stays within the United Kingdom. The United States form a distant second in the list of most active acquirers, followed by a number of European countries (Figure 23).

Figure 22: Average deal value (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 23: Acquirer country of origin in private business transfers targeting Welsh companies (1997-2008)

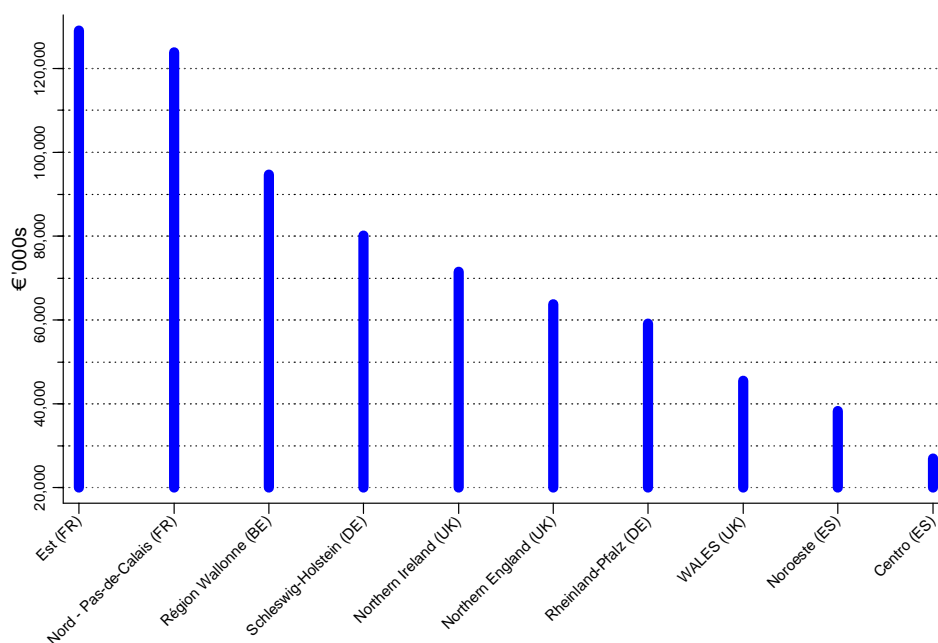


Source: Bureau van Dijk (ZEPHYR).

4.2 Profile of target firms

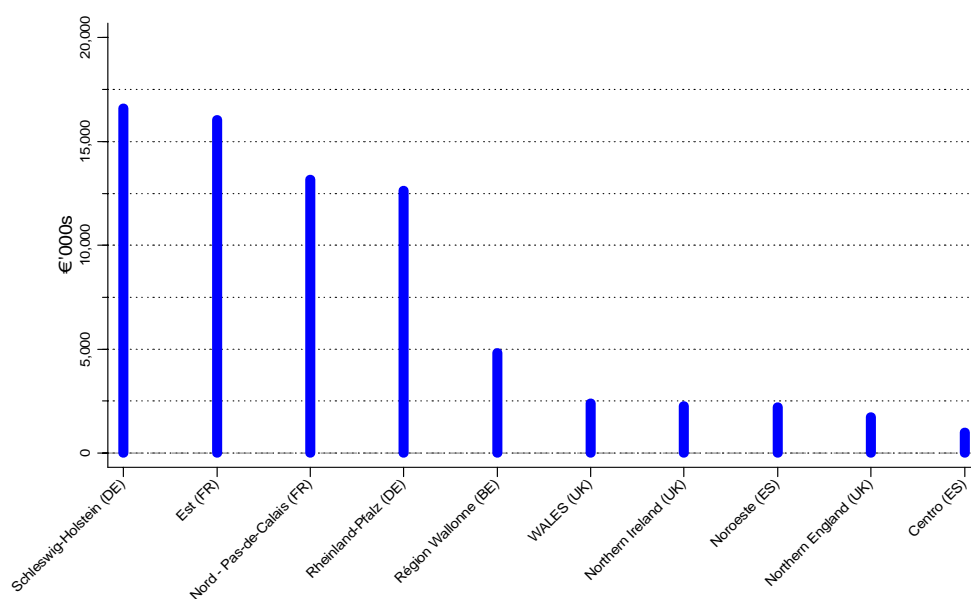
The following tables show a brief portrait of the average privately-owned firm undergoing a change in ownership. We use mean turnover, mean profit and mean assets to characterise target companies. The figures show that Est (ES) and Nord - Pas-de-Calais have seen unusually large companies as takeover targets between 1997 and 2008. The large average value for target firm assets in Rheinland-Pfalz is due to a clear outlier (see Figure 72).

Figure 24: Average turnover of target firms (1997-2008)



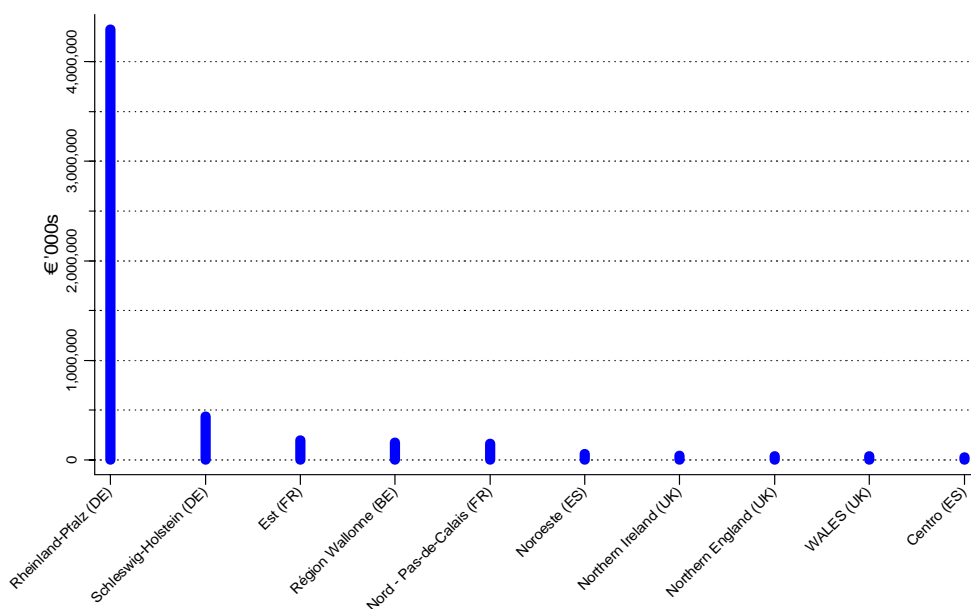
Source: Bureau van Dijk (ZEPHYR).

Figure 25: Average profit of target firms (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 26: Average assets of target firms (1997-2008)

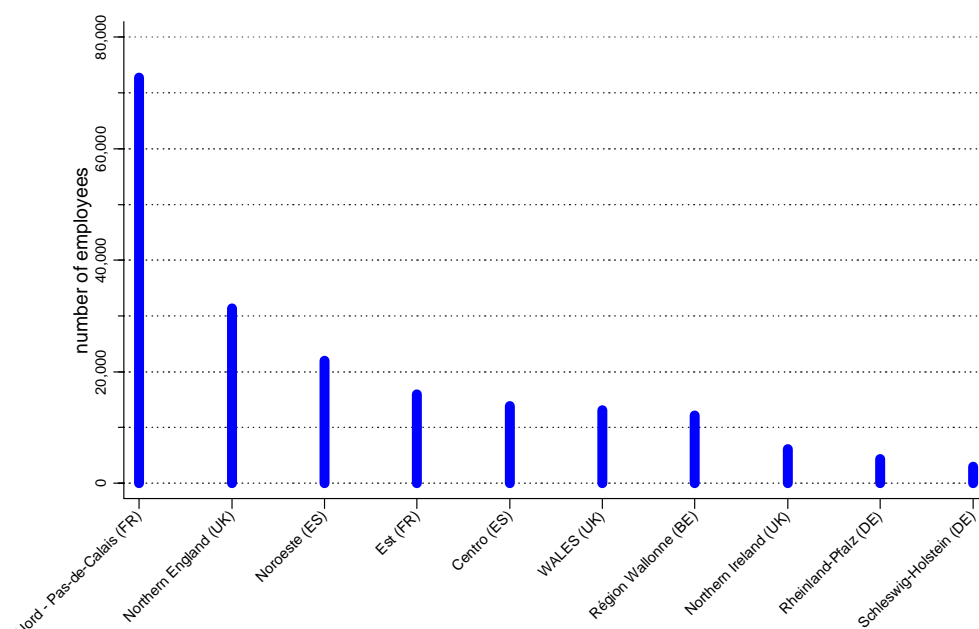


Source: Bureau van Dijk (ZEPHYR).

4.3 Employment

We can see in Figure 28 that the median number of employees targeted in takeovers of private businesses is relatively high in Wales, Rheinland-Pfalz, Northern England, Northern Ireland and Nord – Pas-de-Calais. With the exception of Nord – Pas-de-Calais, however, the average maximum number per transactions is still low, even for these five, at less than 500 employees. In Wales, the vast majority of transactions involved firms with fewer than 200 employees (see Figure 30).

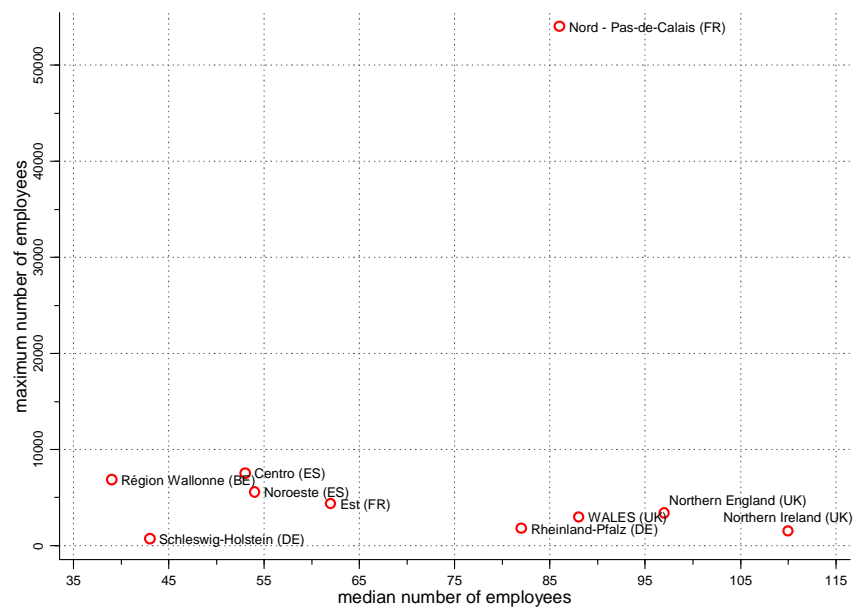
Figure 27: total number of employees in privately-owned businesses targeted in ownership transfers (1997-2008)



Note: the bars show the sum of employees in affected firms over the 12 year sample period.

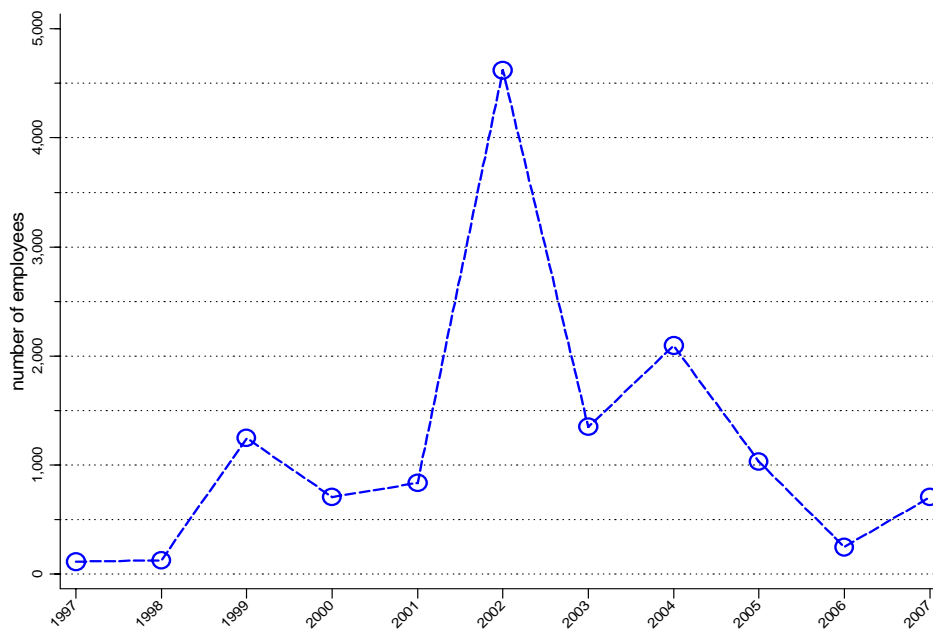
Source: Bureau van Dijk (ZEPHYR).

Figure 28: Number of employees in target firms: median and maximum per region (1997-2008)



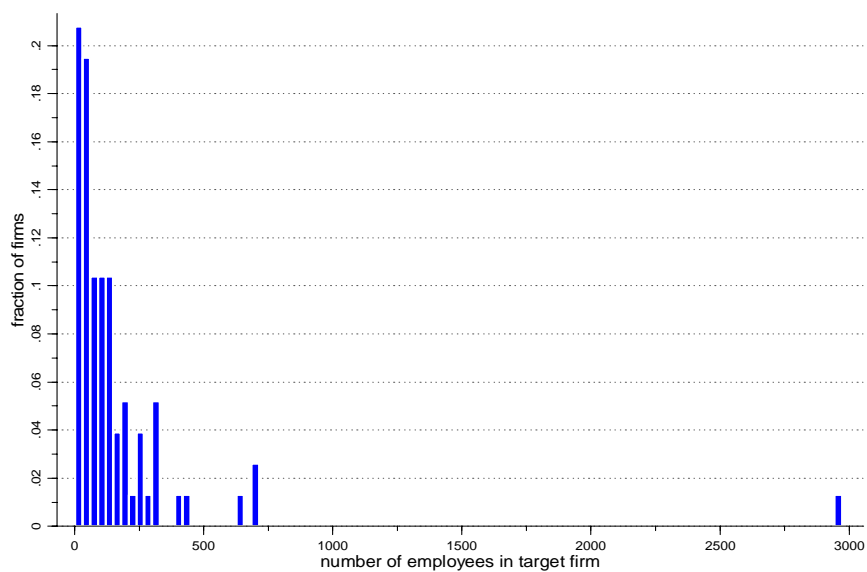
Source: Bureau van Dijk (ZEPHYR).

Figure 29: number of employees in privately-owned businesses targeted in ownership transfers in Wales, per year 1997-2007



Source: Bureau van Dijk (ZEPHYR).

Figure 30: Distribution of employee numbers in Welsh privately-owned businesses targeted in ownership transfers (1997-2008)



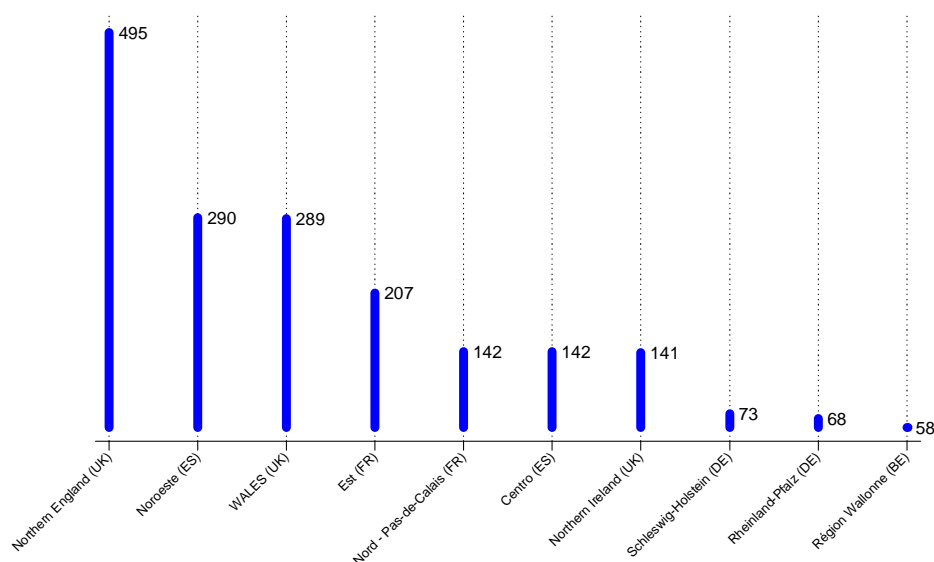
Source: Bureau van Dijk (ZEPHYR).

5 Mergers and acquisitions

5.1 Incidence of M&As

Welsh firms have been the target of mergers and acquisitions 289 times over the last 12 years. This places Wales near the top in our list of regions, with only Northern England reporting a significantly higher number of deals.

Figure 31: total number of M&A deals per region (1997-2008)*

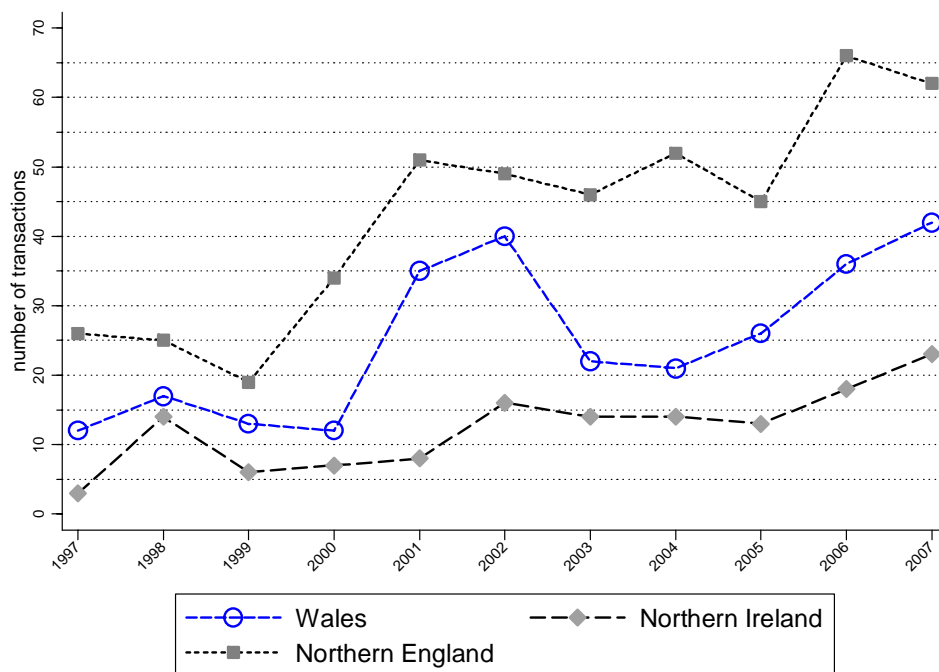


Note: * data for Noroeste goes back to 1996; data for Rheinland-Pfalz goes back to 1998. A company can be involved in several deals during the period, each of which included in the count.

Source: Bureau van Dijk (ZEPHYR).

The occurrence of M&A transactions in Wales shows high volatility over time. However, a sustained increase in yearly numbers can be traced back to 2004. Preliminary data for 2008 (not shown) offers no indication of a fundamental change in the upward trend.

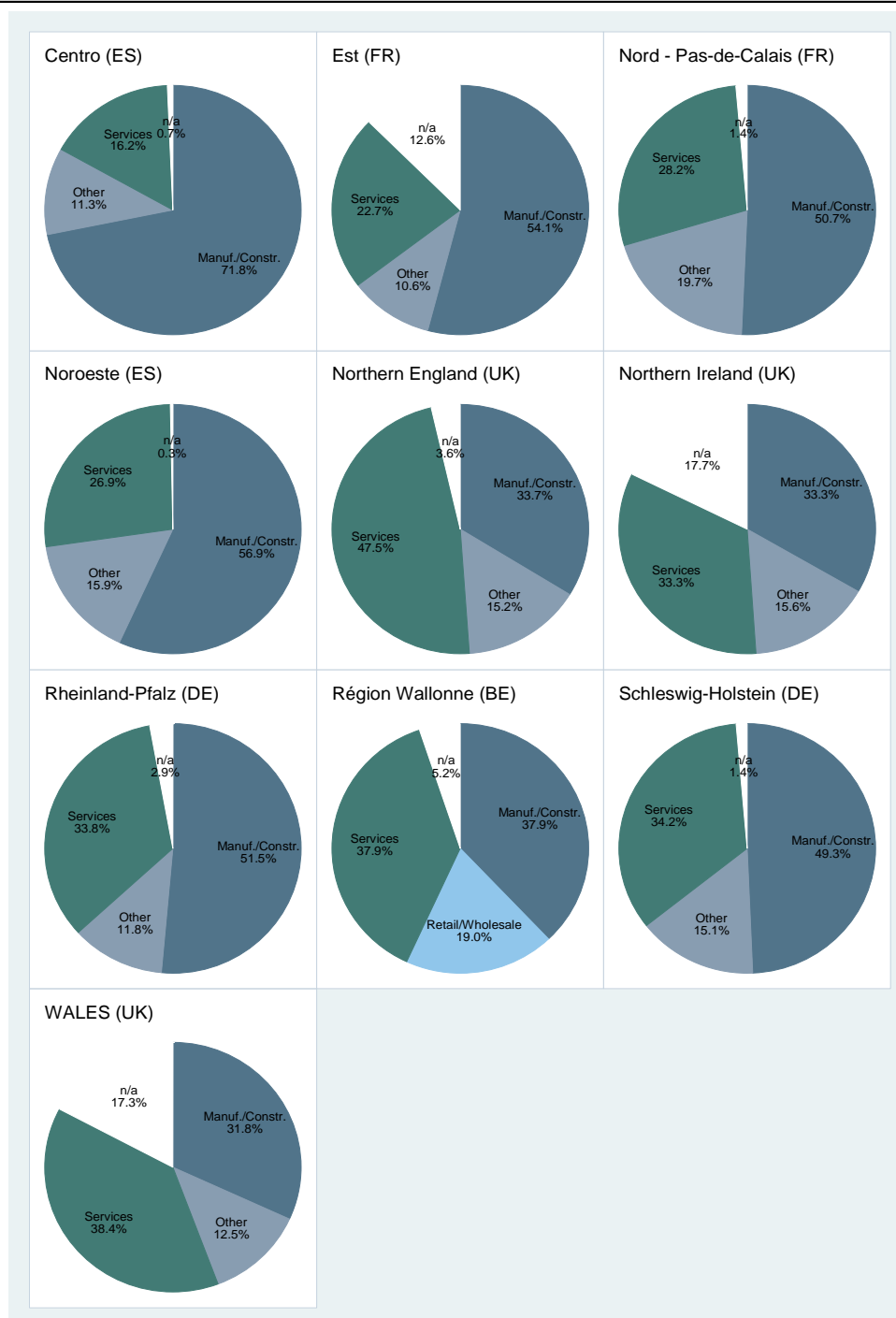
Figure 32: Annual number of M&A deals in Wales, Northern Ireland and Northern England (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

M&A most frequently involves manufacturing businesses. With the exception of the Spanish Centro region, all regions report the highest number of M&A deals, typically more than one third of the total, in the manufacturing sector.

Figure 33: Distribution of M&A deals across economic sectors* (1997-2008)



Note: * sectors according to NACE (revision 1.1):

“Manufacturing & Construction” = NACE sections D-E - Manufacturing, utilities, construction;

“Services” = NACE sections H-O - Services

“Retail/Wholesale” = NACE section G - Wholesale, retail;

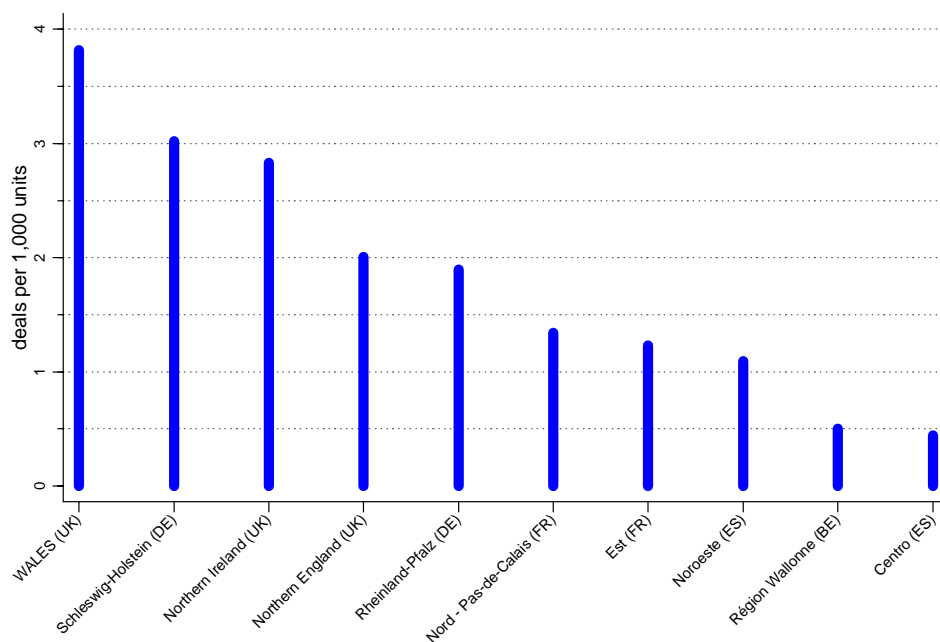
“Agriculture & Mining” = NACE sections A-C - Agriculture, mining.

“Other” = smallest of above categories (varies by pie chart)

Source: Bureau van Dijk (ZEPHYR).

When looking at the number of deals per business units, we find that Wales has proportionally more M&A transactions than the other regions. The other UK regions, as well as the two German regions also report strong M&A activity. However, in terms of average deal value, Wales is only in fifth place.

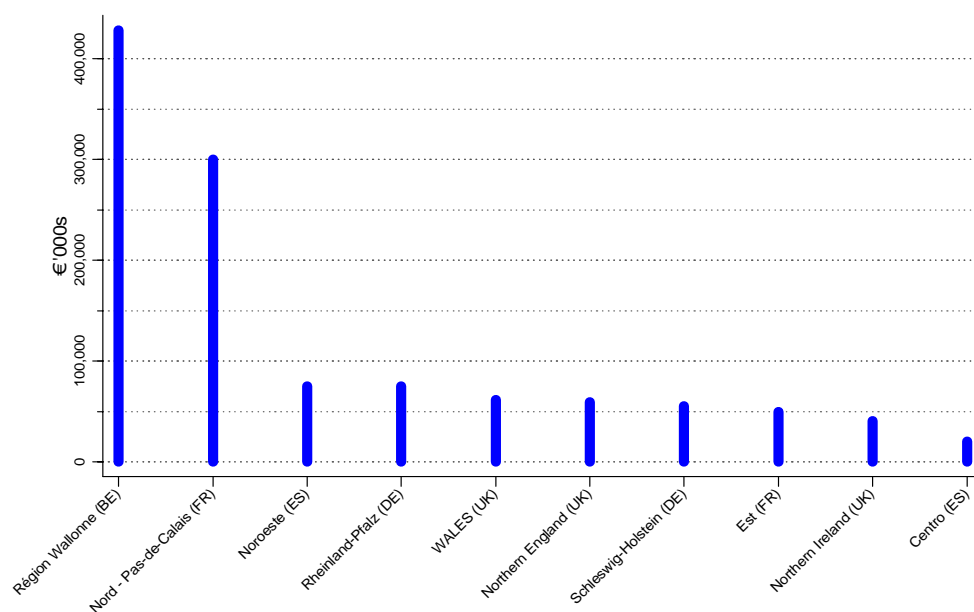
Figure 34: Average number of M&A deals per 1,000 local business units (1997-2008)



Note: local business unit: see note to Table 10 above.

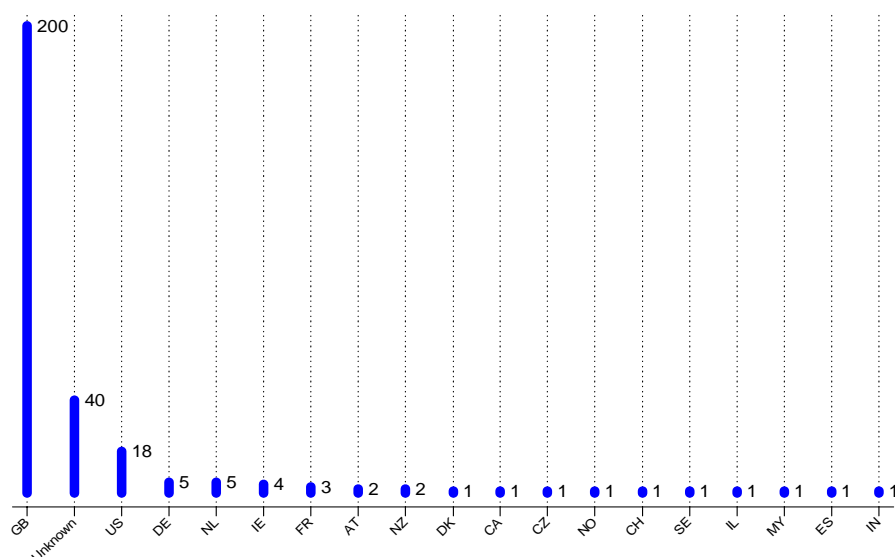
Source: Bureau van Dijk (ZEPHYR).

Figure 35: Average deal value (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 36: Acquirer country of origin in M&A deals targeting Welsh companies (1997-2008)

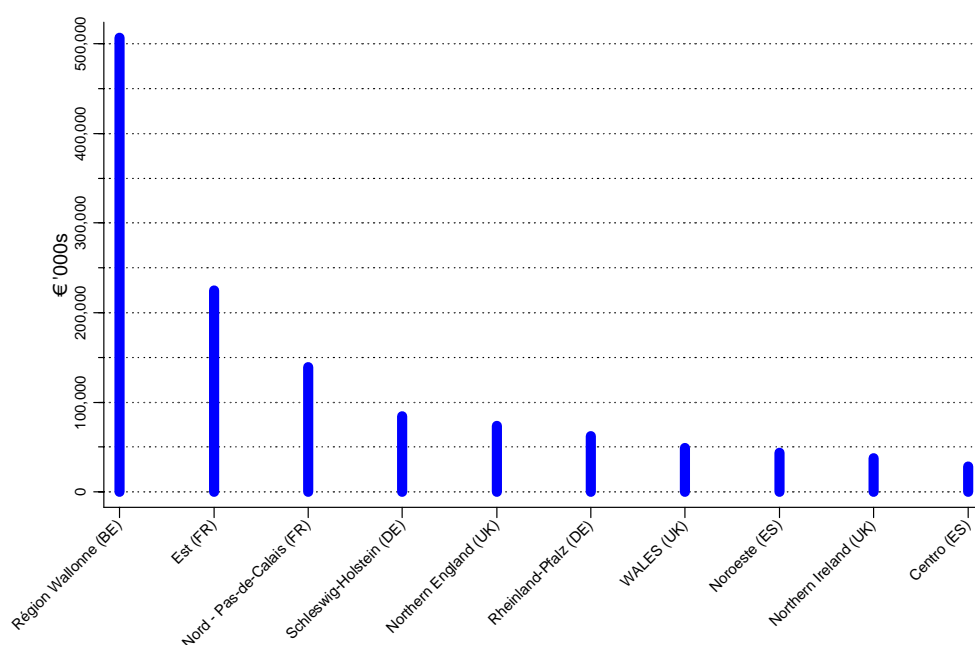


Source: Bureau van Dijk (ZEPHYR).

5.2 Profile of target firms

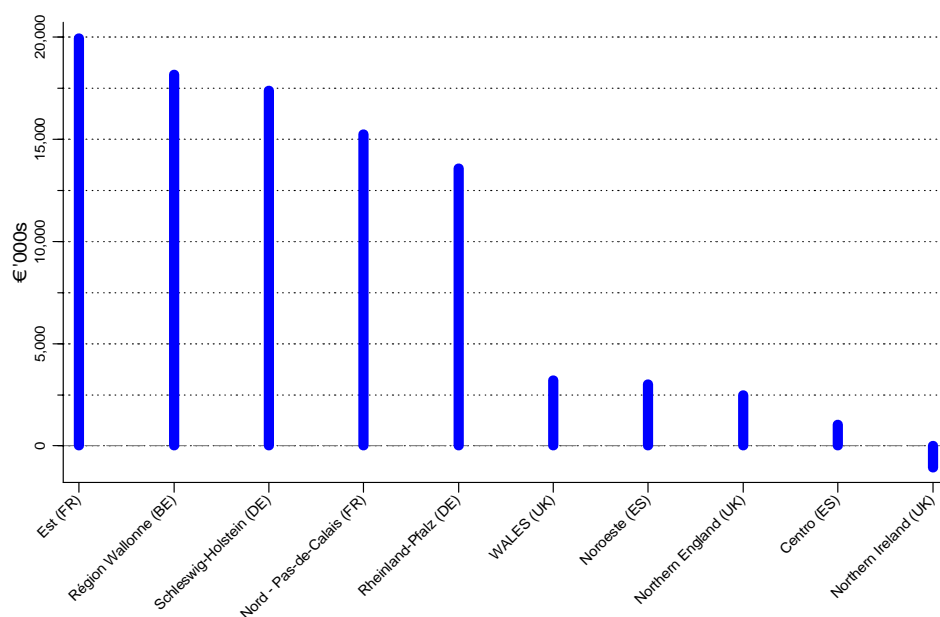
The following tables show a brief portrait of the average firm that is the target of a merger or acquisition. We use mean turnover, mean profit and mean assets to characterise target companies. Figure 37 confirms that companies that experience a takeover are relatively small in Wales. Figure 38 also shows that Welsh target firms are not particularly profitable compared with what we see in other regions. The extreme value for assets in Rheinland-Pfalz is due to a single outlier.

Figure 37: Average turnover of target firms (1997-2008)



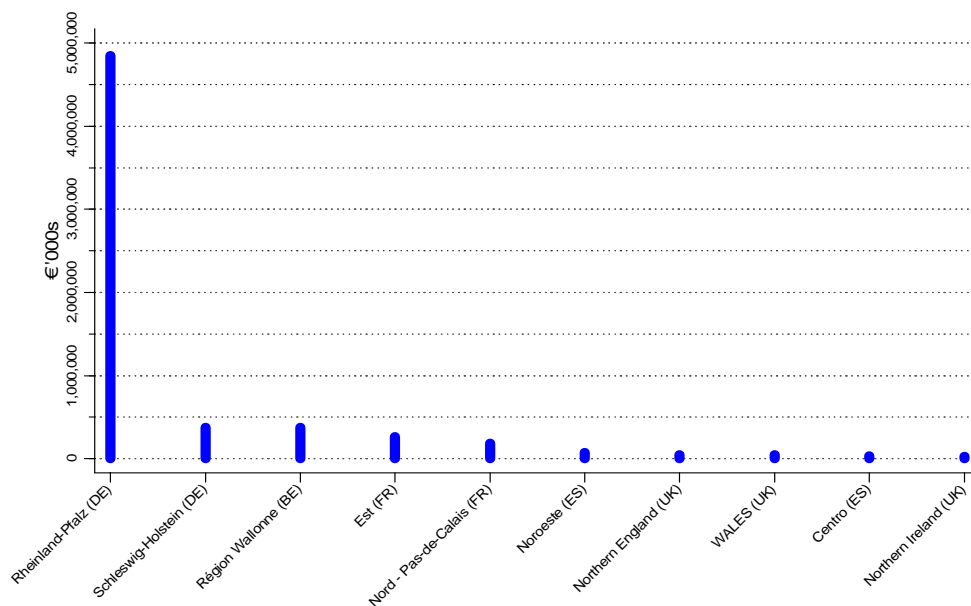
Source: Bureau van Dijk (ZEPHYR).

Figure 38: Average profit of target firms (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 39: Average assets of target firms (1997-2008)



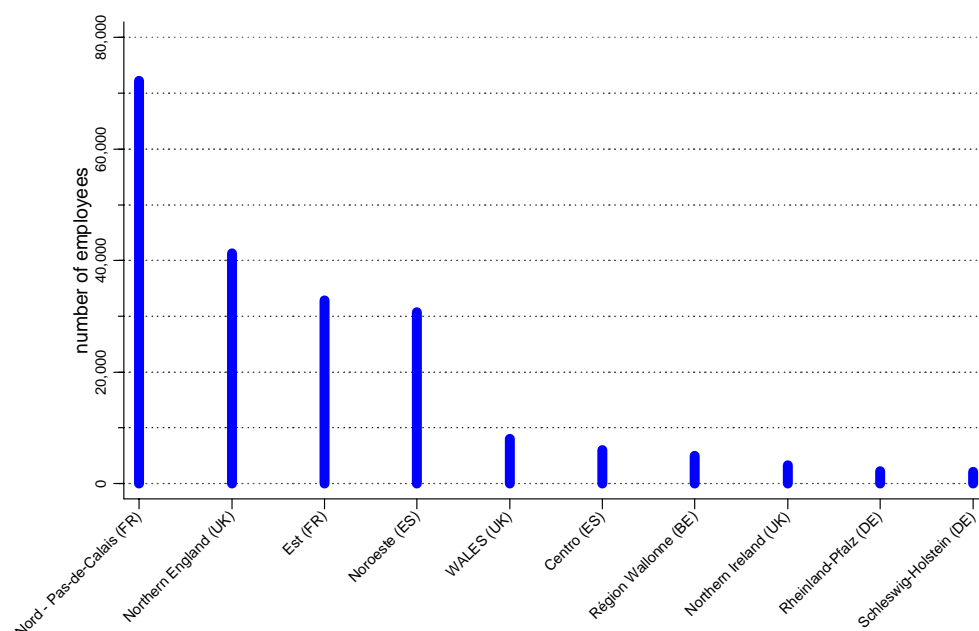
Source: Bureau van Dijk (ZEPHYR).

5.3 Employment

Figure 40 shows that firms involved in M&A as targets are mostly small and medium sized companies, typically employing fewer than a hundred people. In all but three regions (Northern England and Nord - Pas-de-Calais and Est in France), the largest employers that have experienced a change in business ownership through M&A between 1997 and 2008 have had fewer than 10,000 employees.

In Northern England and Nord - Pas-de-Calais the firms that are taken over are typically larger employers than is the case in other regions (Figure 41).

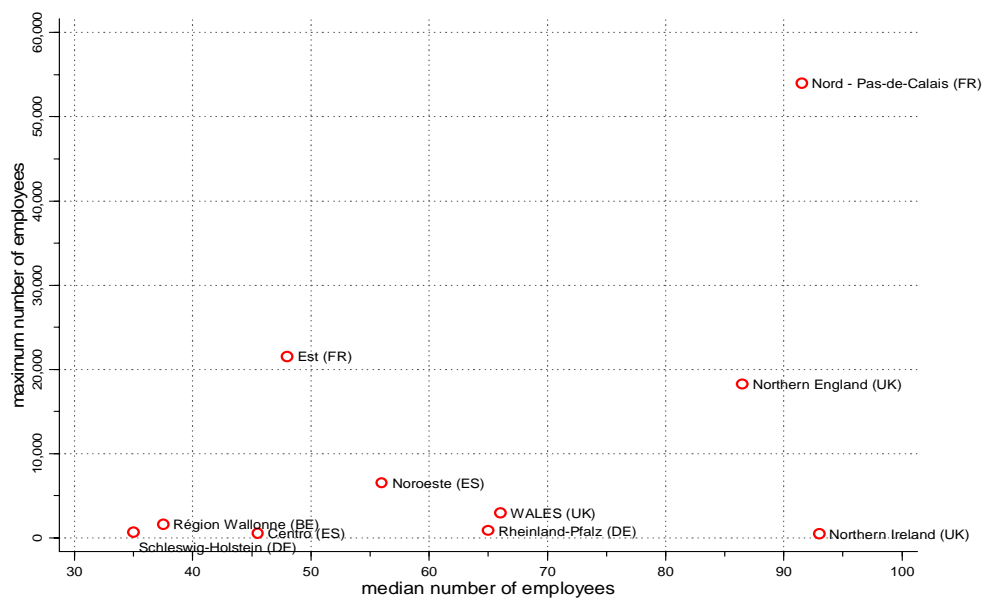
Figure 40: total number of employees in M&A target firms (1997-2008)



Note: the bars show the sum of employees in affected firms over the 12 year sample period.

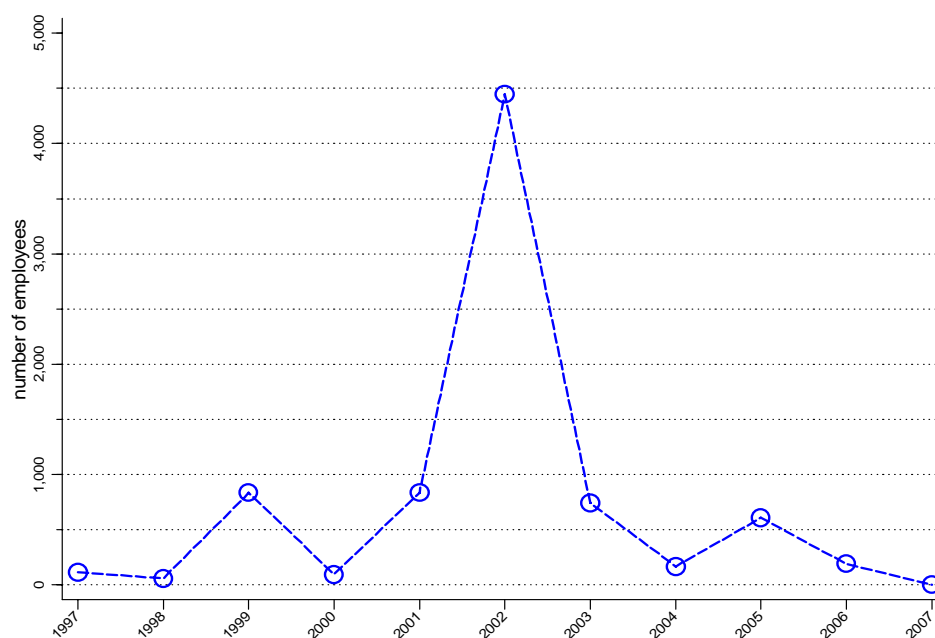
Source: Bureau van Dijk (ZEPHYR).

Figure 41: Number of employees in target firms: median and maximum per region (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

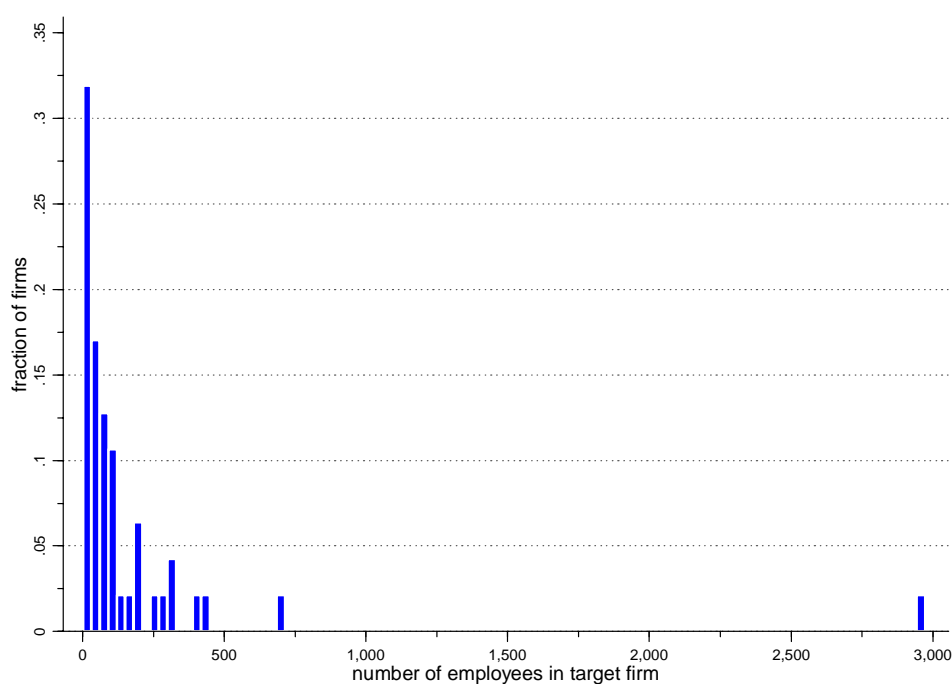
Figure 42: number of employees in M&A target firms in Wales, per year 1997-2007



Source: Bureau van Dijk (ZEPHYR).

In Wales firms that have been targets of successful mergers or acquisitions in recent years are typically relatively small, the bulk being made up of firms with fewer than 500 employees. Although our sample contains examples of larger businesses employing almost 3,000 people, these seem to be the exception rather than the rule.

Figure 43: Distribution of employee numbers in Welsh firms targeted by M&A deals (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

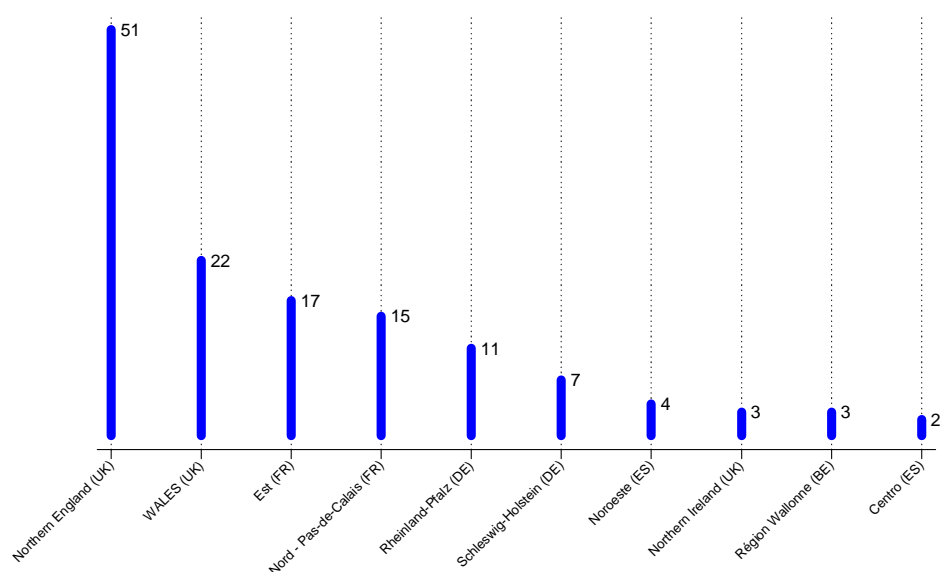
6 Initial public offers

6.1 Incidence of IPOs

Initial public offers are rare compared with other types of ownership change, but here also Wales maintains its position in second place behind Northern England in terms of transaction frequency. However, as Figure 45 shows, the occurrence of IPOs is very volatile and no clear trend is visible. Wales also scores highly in the number of IPOs per 1,000 business units (Figure 47).

IPOs are most common in the manufacturing and service sectors. Together with Rheinland-Pfalz, Wales has the lowest proportion of IPOs in the manufacturing sector (27.3%). IPOs in the retail/wholesale sector play a relatively large role in Wales and in the two of French regions, Est and Nord – Pas-de-Calais (Figure 46).

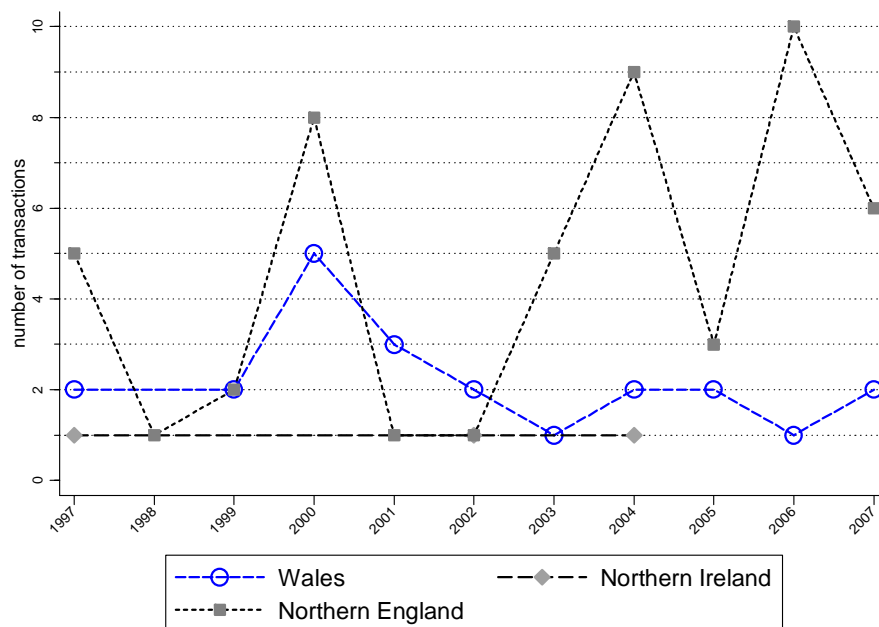
Figure 44: total number of IPOs per region (1997-2008)*



Note: * data for Noroeste goes back to 1996; data for Rheinland-Pfalz goes back to 1998. A company can be involved in several deals during the period, each of which included in the count.

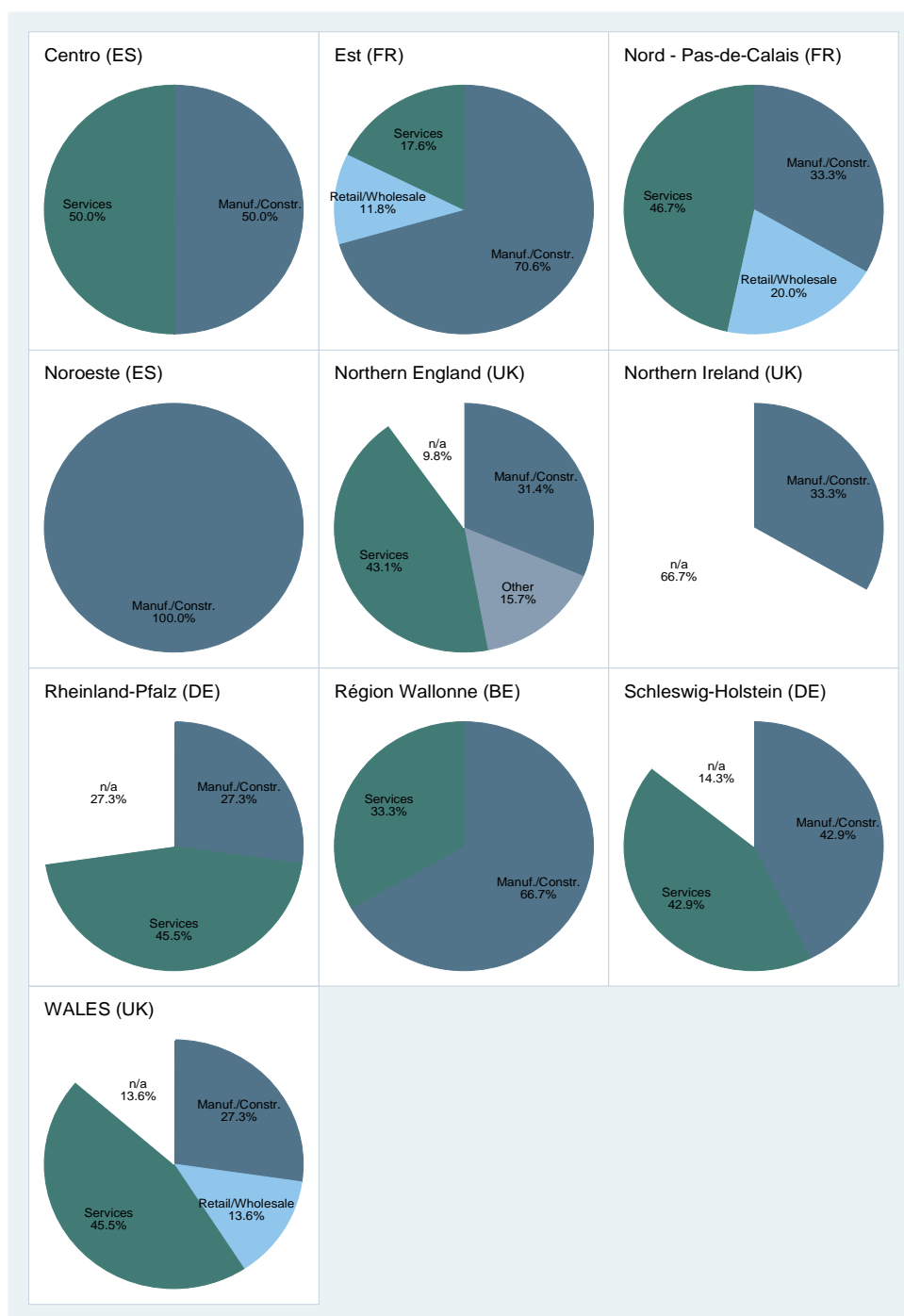
Source: Bureau van Dijk (ZEPHYR).

Figure 45: Annual number of IPOs in Wales, Northern Ireland and Northern England (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 46: Distribution of IPOs across economic sectors (1997-2008)



Note: * sectors according to NACE (revision 1.1):

"Manufacturing & Construction" = NACE sections D-E - Manufacturing, utilities, construction;

"Services" = NACE sections H-O - Services

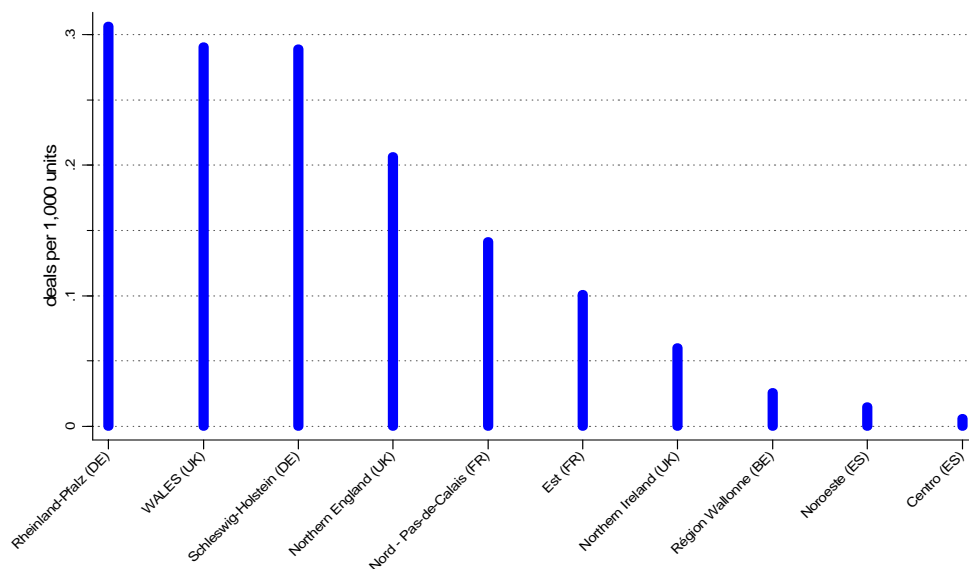
"Retail/Wholesale" = NACE section G - Wholesale, retail;

"Agriculture & Mining" = NACE sections A-C - Agriculture, mining.

"Other" = smallest of above categories (varies by pie chart)

Source: Bureau van Dijk (ZEPHYR).

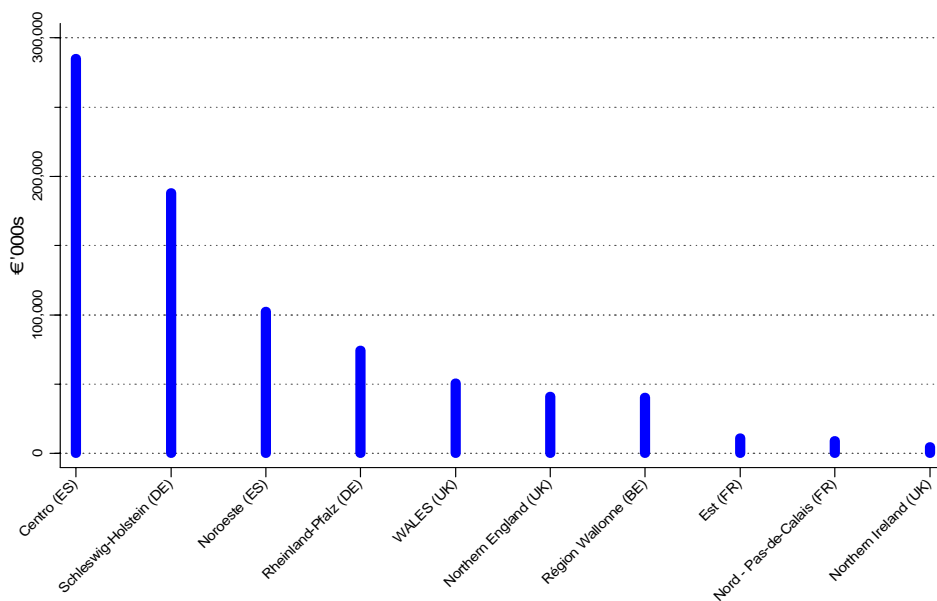
Figure 47: Number of IPOs per 1,000 local business units (average 1997-2008)



Note: local business unit: see note to Table 10 above.

Source: Bureau van Dijk (ZEPHYR).

Figure 48: Average value of IPO (1997-2008)

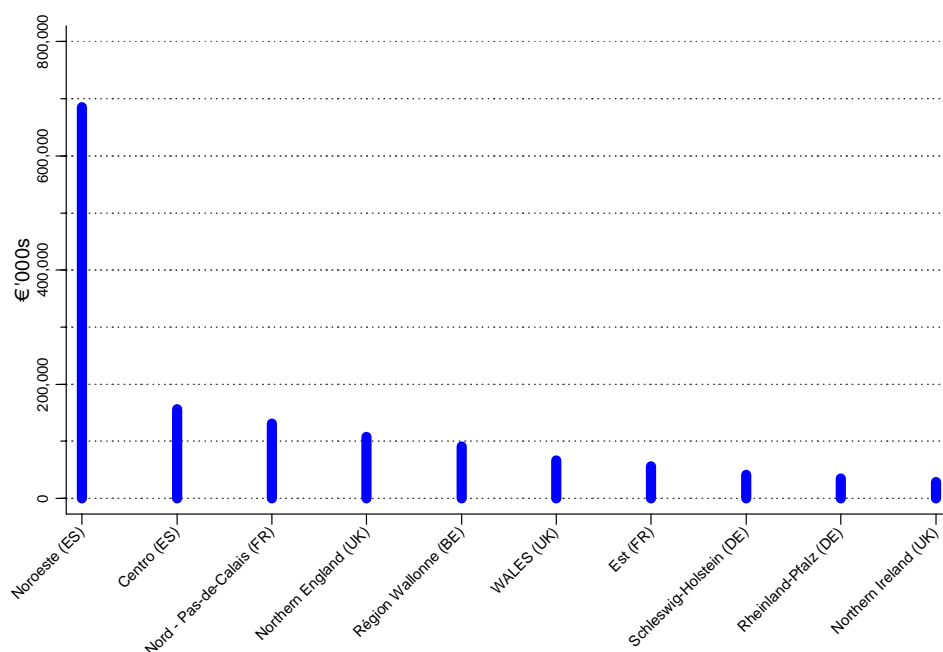


Source: Bureau van Dijk (ZEPHYR).

6.2 Profile of firms in IPOs

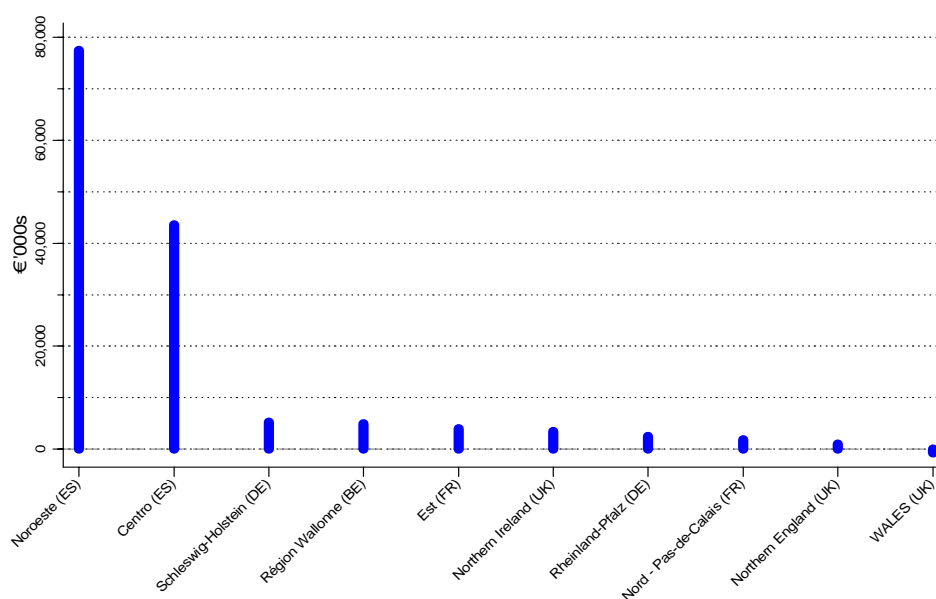
The following tables show a brief portrait of the average firm undergoing an IPO. We use mean turnover, mean profit and mean assets to characterise target companies. The large figures reported for turnover, profit and assets of target firms in Noroeste in Spain are due to a single large IPO, one of only four reported in the region between 1997 and 2008 and the only one for which data is available.

Figure 49: Average turnover of firms in IPOs (1997-2008)



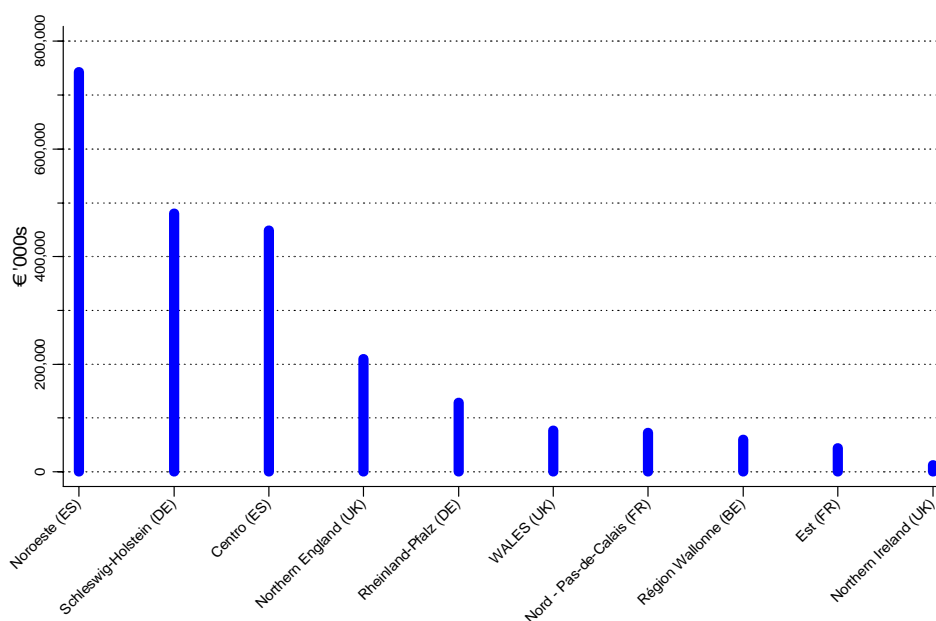
Source: Bureau van Dijk (ZEPHYR).

Figure 50: Average profit of firms in IPOs (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

Figure 51: Average assets of firms in IPOs (1997-2008)

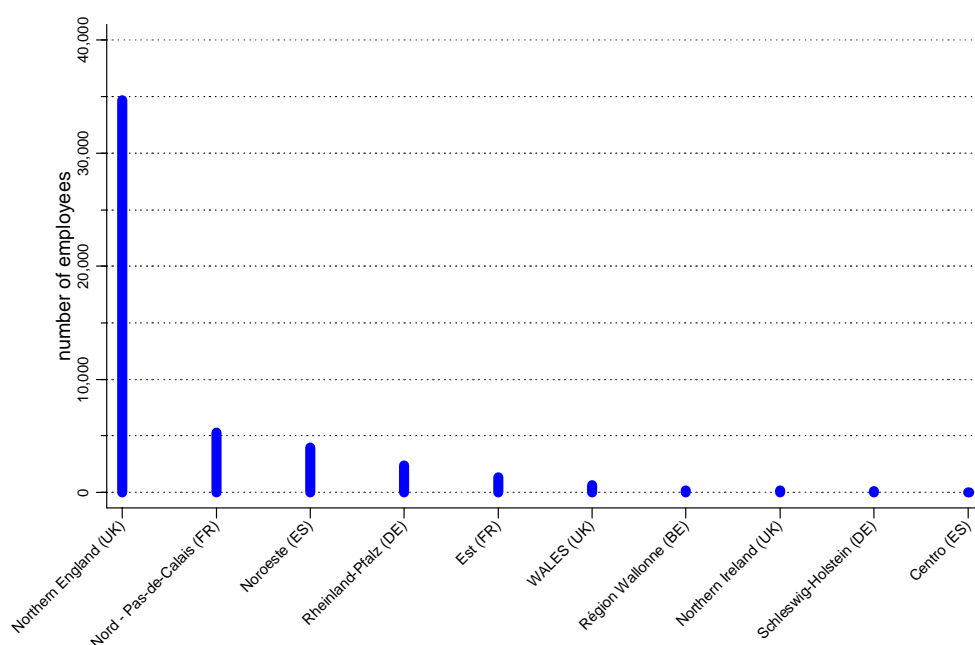


Source: Bureau van Dijk (ZEPHYR).

6.3 Employment

The number of employees in firms undertaking an IPO seems to be small in most regions. In Wales such firms rarely employ more than 250 people. Only relatively few employees were affected by IPOs in most of the selected regions between 1997 and 2008. Only Northern England shows a significant number of people employed in firms that underwent an IPO during the period. For Wales, the distribution of employee numbers in firms that went public is relatively evenly spaced. It is noticeable that it is quite small firms take the route of a public offer in Wales.

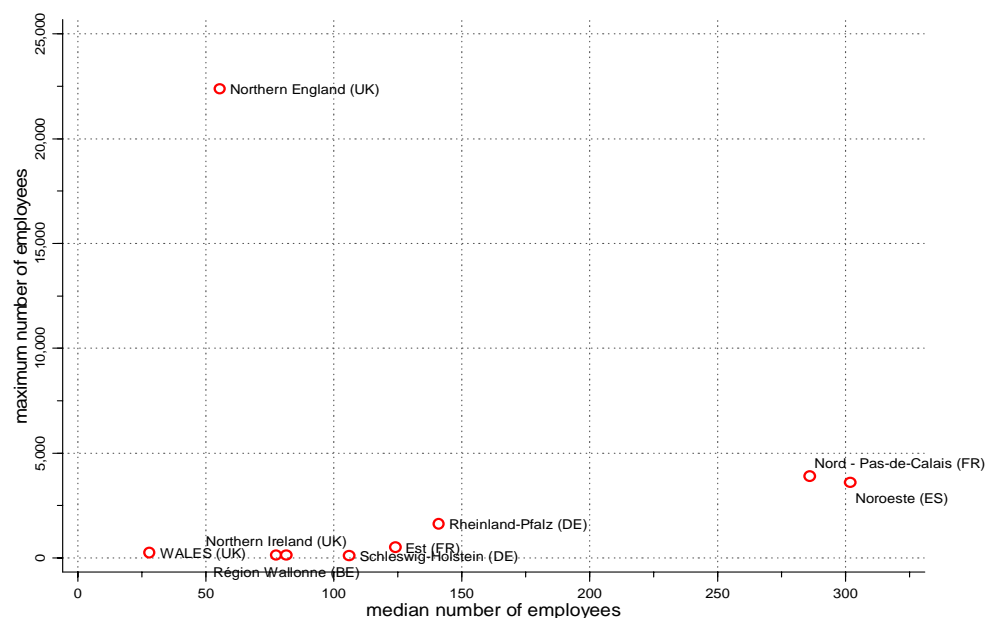
Figure 52: total number of employees in firms in IPOs (1997-2008)



Note: the bars show the sum of employees in affected firms over the 12 year sample period.

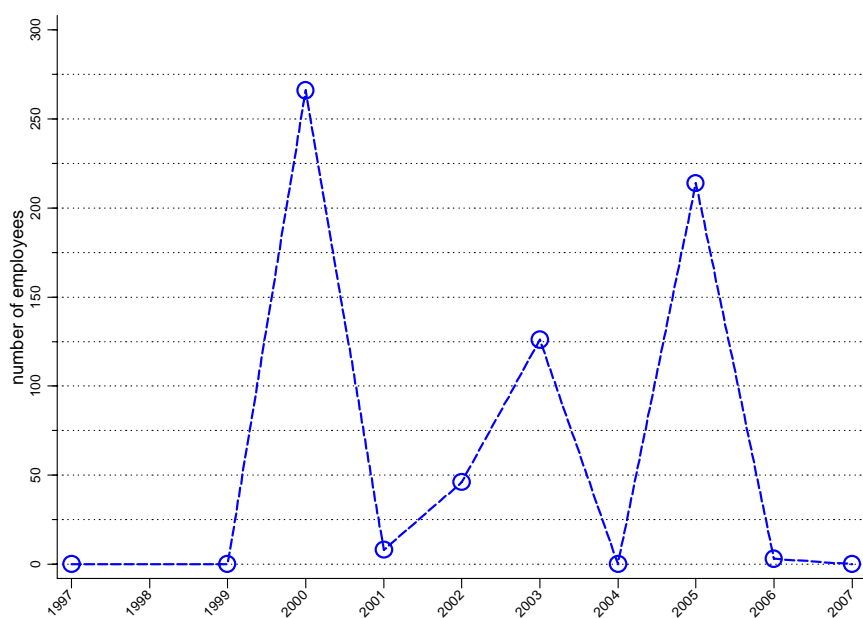
Source: Bureau van Dijk (ZEPHYR).

Figure 53: Number of employees in firms in IPOs: median and maximum per region (1997-2008)



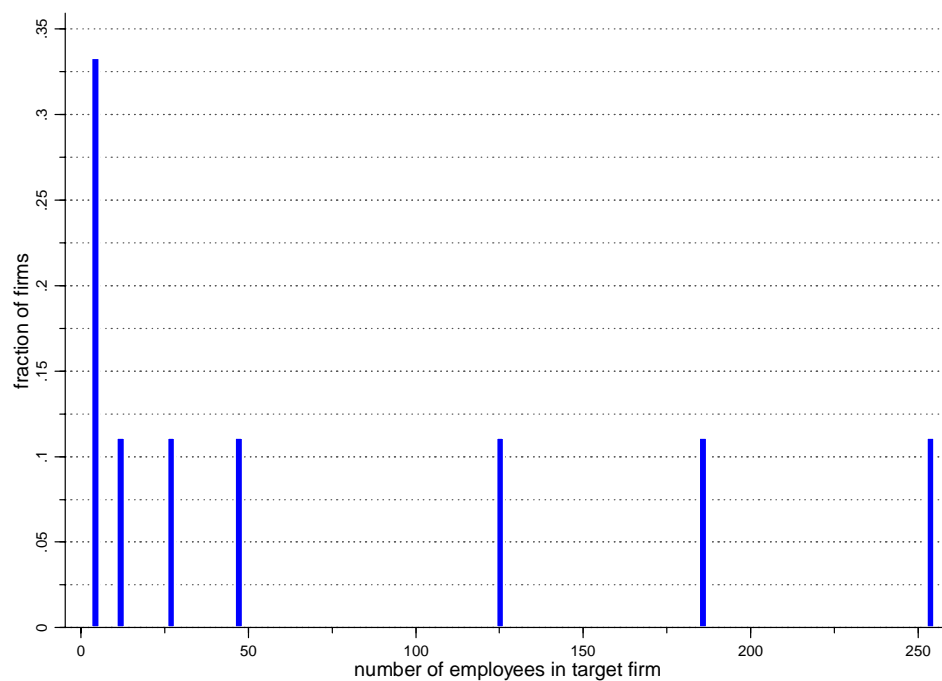
Source: Bureau van Dijk (ZEPHYR).

Figure 54: number of employees in Welsh firms in IPOs, per year 1997-2007



Source: Bureau van Dijk (ZEPHYR).

Figure 55: Distribution of employee numbers in Welsh firms in IPOs (1997-2008)



Source: Bureau van Dijk (ZEPHYR).

7 Ownership changes - the Welsh economy in context

7.1 Ownership changes and the firm population in Wales

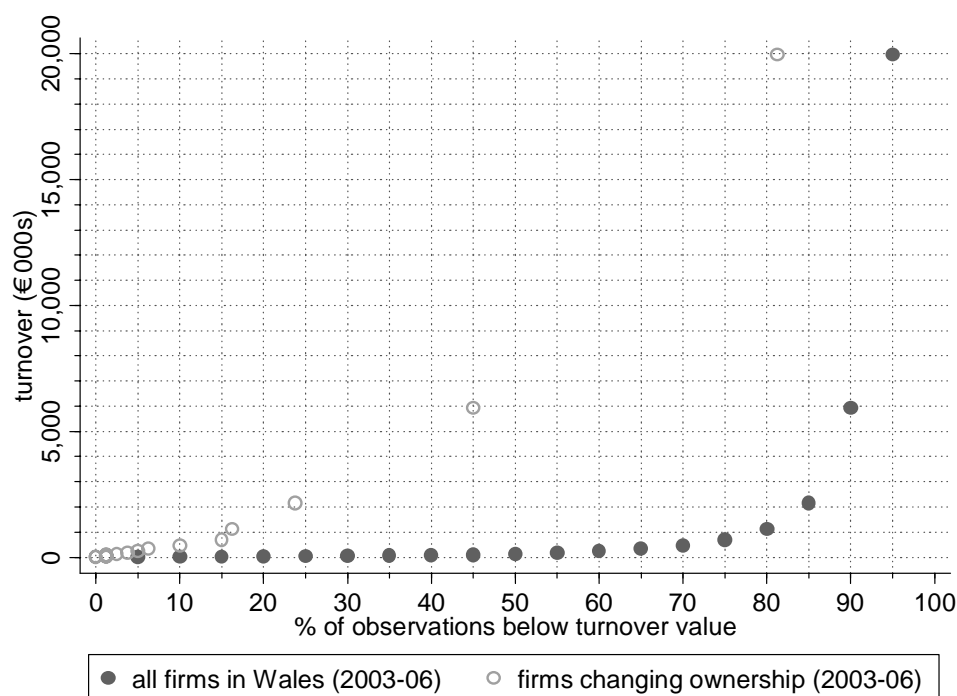
To provide further context for the Welsh experience of changes in company ownership, this section aims to provide a high-level comparison of firms that are subject to changes in ownership with the overall firm population in Wales. Specifically, we look at the size distribution – in terms of turnover and in terms of employee numbers – of the respective groups of companies. When assessing the evidence provided in this section, it should be remembered that only a small number of companies change ownership relative to the total population; the numerical results derived from the data on ownership changes are thus sensitive to relatively small changes in the number of transactions and to unusual values.

Figure 56 below shows the size distribution, divided in 20 five-percent intervals, of Welsh companies between 2003 and 2006.⁹ We first computed equally spaced percentile intervals based on the population of firms not involved in ownership changes. The cut-off values for firm turnover are then used to compute the corresponding intervals for the population of firms that are recorded as having changed ownership between 2003 and 2006 in the ZEPHYR database.¹⁰ The results are plotted in Figure 56 and Figure 57 below.

⁹ In the set of companies not undergoing a change in ownership, each year is a separate observation, so a company reporting their turnover in every single year contributes four observations. Firms involved in ownership changes appear with only one record, in the year the ownership change occurred. The total number of companies in Wales with no recorded changes in ownership is 29,758, the number of ownership changes (for which turnover data is available) is 80. This includes companies involved in completed MBOs (including MBIs), M&As and IPOs which result in the acquirer holding at least 50.01% of the company post-transaction (or an unknown stake).

¹⁰ The difference in treatment for the two sets of observations does not influence the distributions shown in Figure 56.

Figure 56: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) – annual turnover



Source: Bureau van Dijk (AMADEUS and ZEPHYR).

The distribution of turnover in the firm population is heavily skewed towards small companies, with 50% of observations representing companies with less than € 136,000 in turnover.¹¹

The figure shows that firms that are targets of takeovers in Wales are typically larger in terms of turnover than would be expected if such firms represented a random sample of the firm population. Figure 56 shows that only around 20 percent of the companies involved in ownership changes record an annual turnover of more than €20 million, while out of the total population of Welsh firms only 5% of companies are of this size. A table showing the exact cut-off points for distribution is shown below.

¹¹ This is broadly consistent with the data contained in the Inter Departmental Business Register (IDBR) which contains information on VAT traders and PAYE employers in the UK. For the year 2008, the IBRD reports that 46% of companies in Wales had a turnover of less than £ 100,000.

Table 1: Percentiles and turnover thresholds – annual turnover

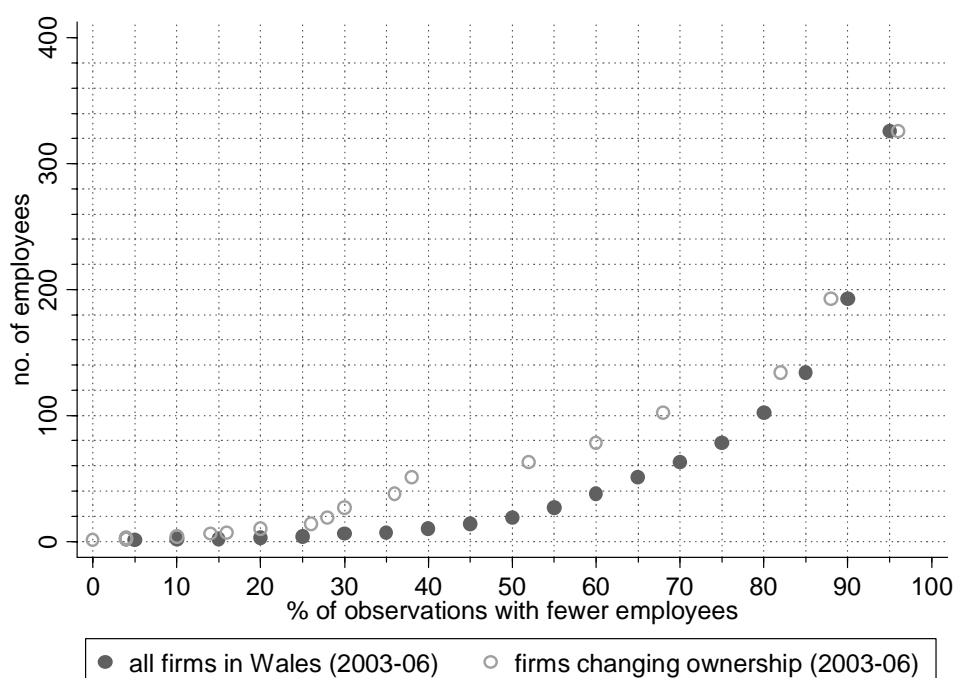
% of observations below threshold (all companies)	Turnover thresholds (€ 000s)	% of observations below threshold (companies changing ownership)
5	5	0.0
10	11	0.0
15	19	1.3
20	28	1.3
25	39	1.3
30	52	1.3
35	66	1.3
40	82	1.3
45	104	1.3
50	136	2.5
55	179	3.8
60	240	5.0
65	332	6.3
70	471	10.0
75	696	15.0
80	1,112	16.3
85	2,154	23.8
90	5,930	45.0
95	19,965	81.3

Source: Bureau van Dijk (AMADEUS and ZEPHYR).

The dataset used to compare the two sets of companies with respect to the number of people they employ was created by keeping only observations for which both employee and turnover information is available. It contains 9,460 observations in total, 50 of which are companies that experienced an ownership change.

The curve tracing the percentile distribution of employee numbers involved in ownership changes shows a kink, after which its slope start to approximate that of the full sample. This means that, while small companies, especially those with fewer than four employees, are underrepresented in the sample of companies that recorded an ownership change between 2003 and 2006, the likelihood that larger employers experience an ownership change is close to being proportionate to their occurrence in the overall population.

Figure 57: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) - number of employees



Source: Bureau van Dijk (AMADEUS and ZEPHYR).

Table 2: Comparison of companies undergoing a change in ownership with the total population of companies in Wales (2003-2006) – number of employees

% of observations below threshold (all companies)	No. of employees thresholds	% of observations below threshold (companies changing ownership)
5	1	0
10	2	4
15	2	4
20	3	4
25	4	10
30	6	14
35	7	16
40	10	20
45	14	26
50	19	28
55	27	30
60	38	36
65	51	38
70	63	52
75	78	60
80	102	68
85	134	82
90	193	88
95	326	96

Source: Bureau van Dijk (AMADEUS and ZEPHYR).

Note that a difference in productivity (turnover per employee) between companies that change ownership and those that do not cannot be inferred directly from this data, as the samples used to compute the percentiles for the two variables are not identical. For this purpose, we restricted both the full sample and the sub-sample containing the companies engaged in ownership changes to companies for which employee and turnover data are both available. This leaves us with a total of 6,032 observations, 46 of which are companies with a change in ownership during the period 2006 to 2006.

Calculating the mean turnover per employee for the two sets of companies indicates that workers in firms that are targets of takeovers are substantially more productive than workers in other firms. However, the magnitude of these estimates of mean productivity (€ 335,000 turnover per employee in the market as a whole compared with € 1.6 million for companies undergoing an ownership change) is unreliable, as employee numbers are frequently underreported, especially in large companies.¹²

While the small sample of ownership changes in Wales means that the results of this section cannot be regarded as conclusive proof, the data is consistent with the theses that Welsh companies are more likely to be taken over if they

- a) are larger, and
- b) are more productive than the average company in Wales.

7.2 Ownership changes and employment

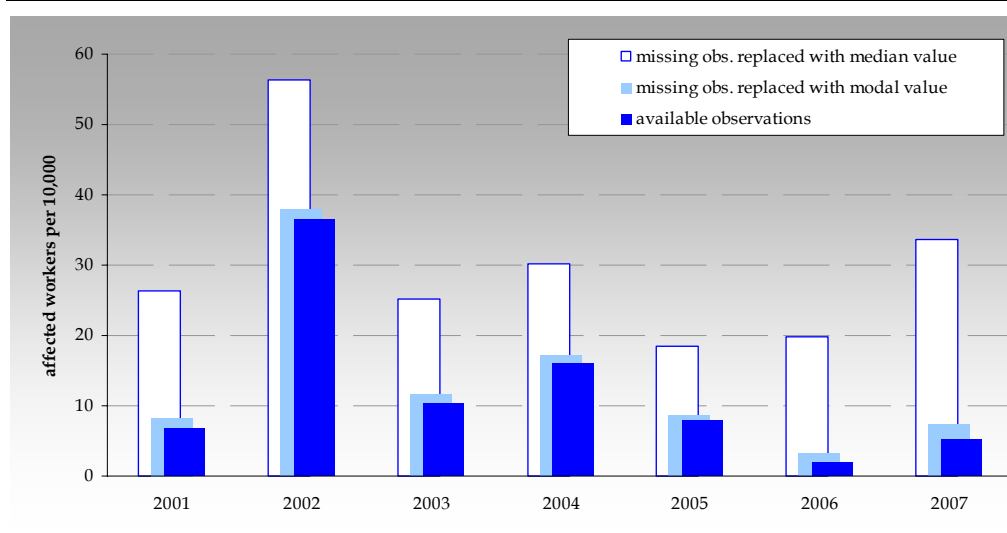
This brief section looks at the proportion of the workforce that is affected by ownership changes in Wales. Compared with the total number of working persons in Wales, the number employed in companies that are subject to a change in ownership appears to be very small.

When we take into account only those transactions for which employee figures are available, the data show that between 2001 and 2007, on average only 12 out of every 10,000 persons employed in Wales worked for a company that experienced a change in ownership (Figure 58). This figure shows considerable year-to-year variation, ranging between just 2 in 10,000 in 2006 up to 37 in 10,000 in 2002.

¹² The main reason for this is found in the sometimes complicated ownership structures of large companies. Holding companies or similar vehicles can report a large proportion of a group's turnover, while nominally employing only a small staff at that level of the organisation. However, the fact that more productive firms are more likely to be taken over is supported by several other studies, e.g. Forman-Peck and Nicholls (2008), Dahlstrand (2000).

Note that the true proportion of affected employees is larger than this, as employee data is missing for the majority of observations (78%). Given the heavily skewed distribution of employee numbers in the affected firms and a potential bias towards smaller firms among the missing observations, a precise estimate of the additional numbers involved is difficult to obtain. As an approximation, in Figure 58 we show the results where missing observations have been replaced by the median and the modal value of the non-missing observations over the period 2001-2007.

Figure 58: Employees in companies undergoing an ownership change per 10,000 employed persons (2001-2007)



Note: total workplace employment, all industries.

Source: Bureau van Dijk (AMADEUS, ZEPHYR), StatsWales.

Comparing the number of workers affected by ownership changes with employment flows, reveals that ownership changes could have more potential to affect overall employment outcomes.

For example, the 4,752 employees in companies subject to an ownership change between 2003 and 2006 (12,390 when missing observations are replaced with the sample mean) compare with 53,000 jobs created in Wales over the same period.¹³ This number is composed of new jobs due to business

¹³ Welsh Assembly Government (2007).

openings (101,600) and net job creation in existing businesses (63,500), minus job losses as a consequence of business closures (112,300).

Whilst the number of employees in companies subject to an ownership change is between 9% and 23% of net jobs created in the period 2003 to 2006, the number of employees who lose their job as a result of a change in ownership will be much smaller than this.¹⁴

7.3 Ownership changes by sector

Finally, we take a look at the distribution of ownership changes in Wales across different sectors of the economy compared with the overall sector distribution of companies. The following table shows how the two compare.

Table 3: Ownership changes in Wales by sector compared with total company population

Sector	Total company population	Companies changing ownership
Agriculture, mining (NACE A-C)	1.5%	1.2%
Manufacturing, utilities, construction (NACE sections D-E)	18.4%	36.8%
Wholesale, retail (NACE section G)	11.7%	11.1%
Services (NACE sections H-O)	52.8%	35.4%
Unknown	15.6%	15.5%
<i>Observations</i>	<i>64,697</i>	<i>413</i>

Source: Bureau van Dijk (AMADEUS, ZEPHYR).

¹⁴ 9% is the figure when only non-missing observations are counted; 23% assumes that companies that do not report employee numbers all have the average number of employees, 67.

The data clearly show that the broader manufacturing sector is overrepresented in the companies that experience an ownership change. The sector also shows the highest proportion of ownership changes overall. Services, which has the highest proportion of registered companies in Wales, is only second when it comes to ownership changes.

The disproportionate representation of the manufacturing sector compared with its share of the overall company population suggests that manufacturing firms are particularly attractive candidates for ownership changes in Wales. The frequency of ownership changes in the agriculture and retail sectors, on the other hand, is proportionate to the overall number of companies in those sectors.

8 Review of evidence on the impact of ownership changes

Throughout much of the developed world, the rate and volume of ownership changes, particularly mergers and acquisitions, have seen a boom over recent years, reaching an all-time high in 2006, following a previous peak in 2000.¹⁵

The increasing frequency of ownership changes, regularly accompanied by headline-grabbing reports of mass lay-offs in the firms involved, have generated renewed interest in questions regarding the impact of ownership changes on the economy, especially with regards to labour market outcomes, such as wages and employment.

In this chapter we review the economic literature that has accumulated and that, taken together, sheds light on the conceptual and empirical issues surrounding the impacts of ownership changes. We start by outlining the theoretical considerations that underlie the economic research in this area, before discussing in turn the empirical evidence on the effect of ownership changes on wages, employment and productivity.

8.1 Theoretical background

Changes in firm ownership can be motivated by a number of different objectives, including

- Exploiting synergies between companies;
- Realising economies of scale;
- Increasing market power;
- Disruptive change in company practices;
- Managers' self-interest.

¹⁵ Gallagher, D. And Barr, A. (2006), "Merger activity reaches record in 2006". *MarketWatch*, 18 December 2006, <http://www.marketwatch.com/news/story/ma-activity-reaches-all-time-high/story.aspx?guid=%7B5E986984-EFC8-4CE0-87B0-D7C9A9B3D559%7D>.

The value of M&A deals reached \$ 3.8 trillion in 2006, up from \$ 3.4 trillion in 2000. (Thomson Financial (2006), *Mergers & Acquisitions Review*, 4th quarter 2006). The data for the regions examined in this study also suggests further increases in activity in 2007.

The objective for any particular change of ownership will depend on the individual circumstances of the deal and the type of transaction sought.¹⁶ To the extent that an ownership change is implemented successfully in accordance with one or more of the objectives listed above, we can expect to see different outcomes in terms of wages, employment and productivity in the performance of the firms involved.

Below we briefly discuss the theoretical impacts of ownership changes; it should be noted that individual transactions typically cannot be neatly classified as belonging to any single one of the categories we describe. Instead, in reality, we would expect to see a mixture of varying complexity of these mechanisms at work in each particular case.

In essence, the presence of synergies means that firms can do things jointly that they either cannot do separately or can only do less efficiently. Such synergies can arise in a wide variety of areas, from technology and know-how to marketing and strategy. Where synergies are the objective of a takeover, the productivity of the combined firm is expected to be higher than the productivity of each separate part on its own.¹⁷ Consequently, in this situation wages can be expected to rise. Furthermore, as target and acquirer are complements, rather than substitutes, no negative effects on employment are to be expected. Indeed, where a firm's competitiveness is enhanced by synergies, employment is likely to increase in the long run, as a more productive firm should be able to increase its market share at the expense of less agile competitors.

Where companies are taken over in order to realise economies of scale, negative effects on employment are more likely.¹⁸ We talk of economies of scale in cases where unit production costs decrease with the scale of production, for instance where facilities that would otherwise have to be replicated can be shared within a merged company. In such cases, duplicate or overlapping functions or facilities will often be eliminated after takeover, which usually involves net losses in employment.

Changes in ownership that involve a net loss in the number of companies in an industry, such as mergers and acquisitions, lead from a static perspective and under certain circumstances to an overall loss of employment in the sector, not only for the firms involved, but for all other firms as well. This is because a reduction in capacity increases the market power of each individual

¹⁶ Synergies, economies of scale and market power, for example, are not immediately relevant for IPOs and MBOs.

¹⁷ See Farrell and Shapiro (1990).

¹⁸ See Markusen (2002).

firm, which can result in a reduction in output and higher prices for consumers. Since lower output for efficient firms requires fewer workers, employment losses are likely, although the compensation of the remaining workers can potentially increase, as the remaining firms are more profitable than before.¹⁹

A similar effect can arise in the case of companies taking over competitors whose products are substitutes for their own products. In this case, increasing the price of one of the products produced by the merged firm becomes more profitable, as some customers who switch in response to a price rise are not lost, but simply purchase another product by the same company. This increase in market power can then lead to higher prices, lower output and a concomitant reduction in the workforce. On top of this, if other firms respond by increasing their own prices, this again can lead to a sector-wide loss of employment via the mechanism described above.

Ownership changes can also be viewed through the lens of the disruption they bring to the established ways a company is run. There are two ways in which such disruptions can be viewed.

One school of thought, exemplified by a well-known 1988 paper by Shleifer and Summers sees mergers and acquisitions as initiating a transfer of wealth from employees to share holders, who typically reap significant benefits from ownership changes. According to the theory this happens because the new owners are not bound by the 'implicit contracts' regarding wages and other benefits that exist between employees and owners before the takeover.

A contrary approach sees ownership changes as an opportunity to increase human capital.²⁰ New skills (both technical and managerial) and new technologies introduced following an ownership change lead to an increase in productivity levels, so that wages for the workforce can be expected to rise. However, a negative effect on employment levels, at least in the short run, is possible.

The overall effect is still likely to be positive, as ownership changes in general can be expected to contribute to the diffusion of managerial know-how and new technologies throughout the economy. From a general equilibrium viewpoint, these spillovers are likely to lead to a more efficient allocation of capital in the economy, with overall positive effects on employment and wages.

¹⁹ Paradoxically, according to economic theory, mergers in these markets are never profitable for the firms involved, although all other firms in the market benefit. This situation is known as the Merger Paradox in Cournot markets.

²⁰ See Javanovic and Rousseau (2002, 2004)

This aspect of ownership changes has often been considered in the context of foreign direct investment and its effects on the economy at the receiving end. While not all foreign direct investment takes the form a change in ownership, typically through acquisition of an existing domestic firm, this is one of the most important channels for FDI in many countries, including the UK.²¹

Finally, a more pessimistic view sees ownership changes as primarily driven by managers' self-interest. Where managers engage in 'empire-building', or are driven by mis-specified incentives, inappropriate changes in ownership, i.e. those that do not enhance productivity, can reduce company performance which in the long run drives wages down and reduces employment.

In reality, we can expect to see a more or less complex interplay of several factors at work in any individual ownership change, which makes it impossible to derive clear predictions as to the effects of ownership changes based on theory alone. In the following section we review the empirical evidence that has accumulated over the years.

²¹ See in Table 7 on page 88 below.

8.2 Empirical evidence

In this chapter we discuss the empirical evidence regarding the effect of ownership changes on two broad areas: the labour market, including effects on employment, wages and other aspects such as the stratification of the workforce by skill levels, and firm performance, especially profitability and productivity. While we try in our discussion to disentangle the findings on each of these different areas, a lot of the studies we review investigate several of these - often interrelated - topics at once.

8.2.1 Effects on employment

Overview

Employment effects are often at the top of the list of popular concerns in debates about changes in business ownership. Such effects have also been a prominent part of the research agenda for a long time. In this section we discuss the main findings to emerge from this body of research. A summary of the empirical literature on the effect of ownership changes on employment is presented in Table 4.

The majority of studies focus on mergers and acquisitions. As we have seen in Chapter 5, mergers and acquisitions are the most common type of ownership change. The frequency of mergers and acquisitions, together with comparatively good data availability makes them ideal subjects for empirical study. In addition, their cumulative effect on employment is likely to be significant, although it might still be dwarfed in individual cases by the effect of rarer transactions, such as IPOs.

Table 4 shows that all of the significant research done in this area uses data from the United States and Europe. The UK and Sweden are particularly well represented among the studies we looked at, owing to the availability good datasets.

Table 4: Empirical studies on the employment effects of changes in business ownership

Study	Country	Sample and time period	Form of ownership change	Main results
Lichtenberg and Siegel (1987)	US	Plant-level data	Mergers and acquisitions	Lower labour input growth rates before the transaction, slightly higher after
Brown and Medoff (1988)	US	Large sample of firms including small, unlisted firms in Michigan; 1978-1984	Mergers	Employment 5% lower
Bhagat et al. (1990)	US	62 takeovers; 1984-1986	Hostile takeovers	In 45% cases workers laid off involving 5.7% of the workforce
Lichtenberg and Siegel (1992)	US	Auxiliary Establishment reports of the 1977 and 1982 economic censuses	All ownership changes	-15.7% in employment in auxiliary establishments, but only -4.5% in production establishments
Conyon et al. (2002)	UK	277 firms, 442 transactions; 1967-1996	Mergers and acquisitions	-9% to -18% drop in labour demand, depending on deal type
Conyon et al. (2000)	UK	195 firms, 240 transaction; 1983-1996	Mergers and acquisitions	7.5 decrease in labour demand following both hostile & friendly takeovers
McGuckin et al. (1995) and McGuckin and Nguyen (2000)	US	Longitudinal Research Database (LRD); 1977-1987	All ownership changes	Positive, but insignificant effect on employment at firm level; +16.1% at plant level
Gugler and Yurtoglu (2004)	US and Europe	646 listed and private firms; 1987-1998	Mergers and acquisitions	Insignificant drop in employment in the United States; -10.0% drop in employment in Europe
Harris et al. (2005)	UK	Plant-level data on 35,752 manufacturing establishments	MBOs	MBOs result in a substantial decline in employment
Devereux and Johnston (2006)	UK	Firm-level data on 314 transactions, 1970-1991	Acquisitions	-5% employment at firm level (-58% long-term)
Bandick and Karpaty (2007)	SE	All Swedish manufacturing firms; 1993-2002	Mergers and acquisitions	Employment 4% higher

Table 4: Empirical studies on the employment effects of changes in business ownership

Study	Country	Sample and time period	Form of ownership change	Main results
Siegel and Simons (2008)	SE	All Swedish workers; 1985-1998 (~2.6m)	Mergers and acquisitions	% of workers staying with firm after 1 year: 62.7 after M&A, 72.9 all other firms

Source: LE Wales, Siegel, D. S. and Simons, K. L. (2008), p. 22., Gugler and Yurtoglu (2004), p. 28.

As we can see from this summary, no clear-cut conclusions emerge from empirical literature. Although most studies find overall negative effects on employment, some report positive effects. However, not all of these studies are of equal quality; our assessment of the evidence is presented in the conclusions section (Section 8.3).

US mergers and acquisitions

Some studies on cases involving the break-up of large, publicly traded corporations and full-firm mergers report significant negative impacts of ownership changes on employment. However, these transactions make up only a small part of all ownership changes.²² Moreover, sample sizes are typically small, so that it is difficult to generalise the empirical results.

More empirical evidence is found in a number of studies on the effect of mergers and acquisitions in the United States, which go back to the 1980s. Negative employment effects are often found in the earlier work, examples of which include papers by Brown and Medoff (1988), Bhagat et al. (1990), Lichtenberg and Siegel (1990).

Brown and Medoff (1988), who studied a large sample of firms in Michigan over the period 1978 to 1984, suggest that the impact of ownership change on employment depends on the type of acquisition. While asset-only sales lead to a 5% decrease in employment, simple sales (where a firm changes ownership without being integrated into the acquiring firm) and true mergers (where the acquired and the acquiring firm combine to form a new entity) lead to increases in employment. However, the nature of their sample, with its focus on a single US state might skew the results, especially as large-scale takeovers are often cross-border.

²² See for example Brockner et al. (1987) and Brockner (1988).

However McGuckin and Nguyen in their study of ownership changes in the US between 1977 and 1987 find positive, but insignificant effects on employment at the firm level, while at plant level they report an unambiguously positive effect on employment, and increase of over 16%.

European mergers and acquisitions

An early study on the situation in Europe by Conyon et al. (2002) find evidence of 'significant rationalisations' in the use of labour following mergers and takeovers in the UK. Their study uses data on over 400 mergers and acquisitions in the UK between 1967 and 1996, a timeframe that includes the UK's 'merger wave' of the 1980s and early 1990s.

The authors estimate labour demand functions for their sample of firms and find that, post-merger, labour is used more efficiently, especially where the merging parties belong to the same sector: for related mergers, their estimate of the drop in labour demand is 18%, for unrelated mergers 9%, which suggests ample scope for production economies in related mergers. Firms that have been targeted by hostile acquisitions reduce their derived labour demand by twice the amount of firms involved in friendly acquisitions.

Further, the drop in labour demand is particularly pronounced in the case of small acquirers.²³ The authors also find a significant reduction in post-merger output, which they assume is caused by voluntary divestments. Reductions in labour demand appear to persist for several years after the transaction.

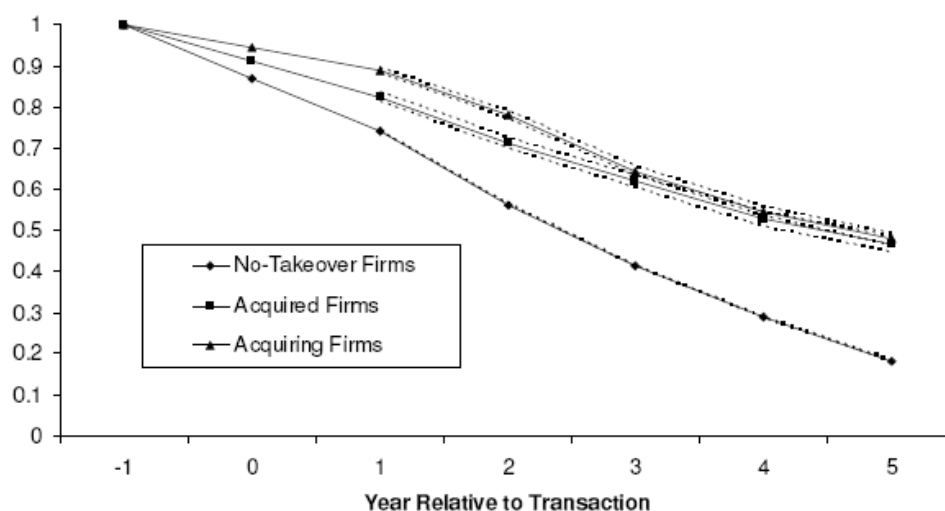
Margolis (2006) undertakes a complex analysis of the employment effect of takeovers in France, based on a matched employer-employee dataset. In his paper he suggests that there are firm level characteristics that allow an ex-ante assessment of the likelihood of firms being involved in takeovers, either on the acquirer or the target side. Given the predictable employment effects identified in the paper, the author suggests that the occurrence of job losses can be anticipated based on the financial accounts of the firm population.

²³ The impact of hostile transactions is concentrated in the upper half of the size distribution of firms, the impact of friendly acquisitions in the lower half. Given the comparatively small size of companies in Wales, we might expect to see more of the latter here.

Using data on mergers and acquisitions in France in the 1990s combined with detailed employee-level data, Margolis finds that target firms reduce employment in the wake of a transaction and by a significantly larger extent than their acquirers. However, just three years after the transaction the probability that a worker will continue to be employed at the target firm is the same as for a comparable worker working for the acquirer. Furthermore, this probability of continued employment in such firms is much higher than for workers in firms that have not undergone a change in ownership. In addition, a look at worker characteristics reveals that those workers losing their jobs after a takeover tend to have a profile that is associated with shorter unemployment duration than the average worker losing his job.

The theory behind Margolis' approach goes back to Jensen and Meckling (1976) who see acquisitions as the market's way of dealing with underperforming managers. Acquirers choose targets based on observable characteristics, in the belief that they can improve efficiency and profitability. From this theory the Margolis derives the hypothesis that target firms should differ from firms that are not targeted in terms of such characteristics as are contained in mandatory company reports.

Figure 59: Probability of Continued Employment post-takeover



Source: Margolis, D. N. (2006), p. 39.

Following a takeover, the acquirer acquires the target's private information, which includes details on the firm's payroll (typically these are not public). Restructuring of the workforce of the target firm thus proceeds on the basis of information that is only revealed ex-post, whereas the original takeover decision was made using information that was available ex-ante. The fact that that Margolis' data shows little evidence for differential treatment of target and acquirer employees tells against the Shleifer-Summers thesis that employees after a takeover are treated more harshly because longstanding implicit contracts are no longer recognised. Instead, Margolis finds support for the returns-to-scale explanation of mergers.

Interestingly, Margolis' data suggests that the likelihood of continued employment in a firm is actually lower in the case of firms that have not experienced a change in ownership. This fact is illustrated in Figure 59. The reason for this perhaps counterintuitive observation might be found in the endogeneity of the takeover decision, in the sense that firms with untapped potential for good long-term prospects are more likely to be selected for takeover than firm lacking such potential. If there are firm characteristics that drive the likelihood of takeover as well as long-term success, it is not surprising that firms with such characteristics offer better long-term job security for their employees.

A rare study of worker-level impacts of M&A has been undertaken by Siegel and Simons in 2008, based on Swedish data. Using data on the whole population of approximately 2.6 million workers in Sweden between 1985 and 1998, the authors track wages and employment in companies that are involved in M&A and companies that are not. The authors observe a significant gap between the likelihood of continued employment after one year for workers in the two types of firms. While in firms that are taken over only 62.7% of workers are still employed after one year, the figure for firms that are not taken over is 72.9%. The gap is more pronounced for men and less experienced workers. Interestingly, the authors find the highest post-merger mobility in workers with the highest level of education. Although the researchers do not draw this conclusion, this might reflect a replacement of managers following the change in ownership.

An interesting result is reported by Picitello and Rabbiosi (2005). Their study of Italian industry finds that employment in companies that have been the target of takeovers increases after a few years, in line with productivity. This result offers a rare glimpse into the longer-term consequences of M&A, which theory suggests might be more benign than the immediate effects, as synergies/economies of scale are realised and knowledge diffusion begins to manifest itself.

Devereux and Johnston (2006), in a firm-level study of UK companies covering the years 1970 to 1991, find a short-term decline in employment following an acquisition of 5%. Their estimate for the long-term effect is much

larger at 58%, as is the effect for hostile takeovers. The authors find further that employment is reduced conditional on output, i.e. that firms with high sales reduce employment by less.

Effect of labour market rigidities

In a later study, Gugler and Yurtoglu (2004), following in the footsteps of Conyon et al. (2002) find negative employment effects and suggest that Europe's relatively rigid labour markets can explain the difference to the United States, where the authors find no significant impact on employment.

Starting from the abundant evidence that US labour markets are more flexible than European ones, and thus adjust quicker to shocks, the authors form the hypothesis that the employment effect of mergers and acquisitions should differ between Europe and the United States. The crucial assumption is that a transition of ownership through mergers and acquisitions represents a window of opportunity for firms to shed excess labour more easily than under normal conditions. Behind this assumption is the Shleifer-Summers idea that takeovers allow the new management to renege on 'implicit contracts' with the workforce. If the views on relative labour market rigidity in Europe and the theory of Shleifer and Summers regarding the effect of takeovers are correct, the need for companies to make use of this opportunity would be greater in Europe, where structural rigidities in the labour market prevent smoother transitions. A European firm undergoing a merger thus can be expected to reduce its labour force by more than an American firm in the same situation.

The Gugler and Yurtoglu (2004) empirical analysis is based on 646 mergers in Europe and the US between 1987 and 1998. The results on overall employment effects are presented in Table 4. While mergers over the whole sample lead to a slight reduction in employment of 2.9% in the year, the differences between Europe and the US are stark: while the drop in the US is statistically insignificant, in Europe it is as high as 10%.

The authors cast doubt on the common perception that the UK has a significantly more 'American' labour market than other continental economies. When comparing the UK alone with continental Europe and the US, the largest reductions in employment are found in the UK. Although hostile takeovers - which are more frequent in the UK compared with continental Europe - have a larger effect, it is not statistically significant; the observed additional drop in employment might be random, rather than caused by the hostile nature of the takeover.

The paper further finds interesting differences between the United Kingdom and continental Europe. In the UK, related mergers, i.e. mergers in which target and acquirer are in the same industry, reduce employment by more than unrelated ones. This might be seen as evidence that mergers and acquisitions allow firms to economise on duplicate assets, leading to greater efficiency in the overall economy. In continental Europe, the reverse is true: here unrelated mergers lead to bigger reductions in employment by the firms involved. In the US, the authors observe no impact at all that would depend on the similarity of firm's activities. The authors assume these differences reflect cross-country differences in institutions.

Labour market rigidity is also recognised as an important determinant of labour market outcomes in a recent study of mergers in the South African gold mining industry (Behar and Hodge 2007), where the authors remark upon the parallelism with results from continental Europe. Behar and Hodge also accept the Shleifer and Summers' (1988) theory that mergers give managers the opportunity to renege on implicit contracts, and argue that this explanation is particularly relevant in declining industries.

Transaction types

A considerable body of evidence suggests that different types of transactions can lead to very different outcomes. The work by Siegel and Simons (2008) suggests that the intentions of firms play a crucial role: firms that engage in partial takeovers (i.e. firms who buy only specific plants or parts of a business), and those that use acquisitions as a means to enter a new industry, are more likely to value the existing human capital than other types of owners, thus leading to more benign labour market outcomes.

Work by Lehto and Böckerman (2006) offers further insights into how employment effects are differentiated by transaction type. Using firm-level data from Finland covering the years 1989-2003, the authors analyse cross-border and domestic M&A deals across the whole range of industrial and service sectors. They find that changes in ownership where the acquirer is a foreign company lead to job-losses, although this effect is only significant for firms in the manufacturing sector. Transactions in which both target and acquirer are based in Finland have an unambiguously negative effect on employment across all sectors, particularly if the acquirer is foreign-owned.

The authors hypothesize that this pattern is explained by foreign companies first entering the market through the takeover of domestic firms, but postponing major restructuring in order to gain knowledge of the new market. Significant losses in employment only occur in the 'second wave', where the foreign-owned subsidiaries engage in M&A of their own.

Girma and Görg (2004) provide some evidence of reduced employment growth in domestic plants taken over by foreigners in the electronics sector but not in the food sector. On the other hand, Gugler and Yurtoglu (2004) find no significant differences between domestic and cross-border deals in terms of employment effects. Girma (2005) cannot detect any effect of foreign acquisitions on employment in domestic firms on average.²⁴

At the other end of the spectrum a paper by Bandick and Karpaty (2007) find broadly positive effects on employment associated with foreign acquisitions. In their paper they look at the consequences of takeovers of Swedish manufacturing businesses during the 1990s, a period that saw a large number of such transactions and has led to a situation where the proportion of foreign-owned companies in Sweden today is among the highest in the OECD.

Their study is methodologically among the most sophisticated we found. It uses a combination of propensity-score matching and difference-in-difference estimation to take account of endogeneity, i.e. the fact that firms that are taken over are not randomly chosen from the total firm population. This is important if the factors that distinguish the group of target firms also influence the post-takeover employment effects. This is likely to be the case for factors such as productivity and wage levels, where the authors find evidence of 'cherry-picking', i.e. a preference for high-productivity firms as takeover targets. The authors find a positive effect of foreign takeovers on employment. On average they observe a 4% increase in employment. The effects are strongest for domestic non-multinational firms, where employment increased by 6.5%.

There is significant evidence that hostile takeovers have more negative effects on employment. Research by Conyon et al. (2002) for the UK indicates that employment losses are particularly likely in the case of hostile takeovers. This is confirmed by Devereux and Johnston (2006), who also look at UK industry.

The evidence for other types of ownership changes is very rare. In one of the very few studies dealing with MBOs, Bruining et al. (2004) report evidence of increases in employment in the UK and the Netherlands. The study is qualitative in nature and is based on a survey of company directors and owners. The majority of respondents in both the UK and the Netherlands report an increase in total employment following the buy-out. The respondents also mention improvements in the provision of training, wages, and subjective issues like trust between managers and workers (see Table 6). The authors believe that the more 'employee-friendly' policies adopted after

²⁴ The picture that emerges from the study is mixed, with losses in employment in larger firms and gains in smaller ones.

an MBO serve to align the incentives of the workforce with a more entrepreneurial approach to management, which aims to maximise long-term success. The authors speculate that the pay-off from long-term investments are higher in a firm after buy-out, as it is retained within the company, rather than siphoned off by the head office. Further, the authors think that material expressions of commitment might be necessary to reassure the workforce in the uncertain climate created by the change in ownership.

However, this is contradicted by a large-scale study by Harris et al. (2005) on MBOs in the UK manufacturing sector; according to their evidence, MBO targets are below average in terms of productivity before the buy-out and experience significant productivity increases after. The authors report that this is due to a reduction in the labour-intensity of production in the affected plants, for example through outsourcing of labour-intensive processes. On average, employment in the affected plants drops to 39% of the pre-MBO level.

The different findings on the employment effects of MBOs might be explained by the fact that Harris et al. look at the plant-level, whereas Bruining et al. look at firms. It is plausible that increases in productivity achieved by shedding labour in unproductive plants, which leads to greater overall efficiency, allow expansion and employment increases elsewhere in the company.

On IPOs, there is some evidence that profitability decreases for firms that have gone public.²⁵

8.2.2 Effects on wages

While losses in employment, at least in the short term, are likely to be a common feature of ownership changes, their effect on wages is less predictable. To the extent that ownership changes help to increase worker productivity, we would expect wages to increase. At the same time, if the theory holds that ownership changes lead to a disruption in employer-employee relations along the lines suggested by Shleifer and Summers, ownership changes could be accompanied by a drop in wages.

As in the previous section we have summarised the findings from a number of significant empirical studies in a table.

²⁵ See Wood and Coakley (2007), Pástor et al. (2007) and Serve (2004).

Table 5: Empirical studies on the wages and other labour market effects of changes in business ownership

Study	Country	Sample and time period	Form of ownership change	Main results
Brown and Medoff (1988)	US and Europe	Large sample of firms including also very small, unlisted firms in Michigan; 1978-1984	Mergers	Wages 5% higher
Mitchell and Mulherin (1989)	US	Firm-level data	Corporate takeovers	Only a few takeovers result in the termination of a pension fund
Pontiff et al. (1990)	US	Firm-level data	Tender offers (corporate takeovers)	15% of hostile bids and 8% of friendly bids led a pension fund termination
Rosett (1990)	US	Firm-level data	Corporate takeovers	Gains to shareholders are not the result of losses to employees
Gokhale et al. (1992)	US	Employee-level data on 121 firms; 1980-1991	Hostile takeovers	Hostile takeovers induce a reduction in senior positions in target firms
Davis and Wilson (2003)	US	Railway companies, 1970-1994	Mergers	5-15% of wage increases in the sector are explained by mergers
Conyon et al. (2004)	UK	Firm-level data (1979-1991)	Related and unrelated mergers	Increases in wages for all mergers, higher for related mergers
Currie et al. (2004)	US	Hospitals in California; 1989-1999	Mergers and acquisitions	No impact on wages, but effort levels of nurses are increased
Almeida (2004)	PT	3,707 firms; 1991-1998	Foreign acquisitions	Increase in wages post-acquisition: 5-13% (manufacturing), 0-5% (services); no significant impact on skills profile
Devereux and Johnston (2006)	UK	Firm-level data on 314 transactions, 1970-1991	Acquisitions	No significant effects on wages
Marsh et al. (2006)	SE	All workers in 16,000 Swedish manufacturing plants; 1985-1998	All ownership changes	1.5% drop in earnings growth after ownership change; no negative impact on wages/ employment status of women and minorities

Siegel et al. (2007)	SE	Plant-level data	Partial and full acquisitions and divestitures, related and unrelated acquisitions	Plants involved in full acquisitions and divestitures and unrelated acquisitions experience an increase in average employee age, experience and employees with a college education
Siegel and Simons (2008)	SE	Worker- and plant-level data; 1985-1998	Mergers and acquisitions	1.5% drop in earnings post-merger; gap in earnings growth of 2.2 pct. Points between targets and other firms; unemployment less likely for women and skilled workers

Source: LE Wales, Siegel, D. S. and Simons, K. L. (2008), p. 22.

In general, the empirical evidence supports the view that wages increase after an ownership change, and typically this is explained by higher productivity.

Overall, empirical support for hypotheses suggesting that ownership changes have a negative effect on wages is weak. Devereux and Johnston (2006), looking at a large sample of UK companies between 1970-1991, find no statistically significant effect. They estimate wage equations for the firms involved in acquisitions to test the Shleifer-Summers hypothesis that a change in ownerships gives managers' an opportunity to break implicit contracts with workers. Their hypothesis is that wages should decline relative to the overall scale of activities. However, they find the effects of acquisitions on wages to be insignificant.

Marsh et al. (2006) and Siegel and Simons (2008) find evidence of a reduction in earnings and earnings growth for firms that underwent a merger. Siegel and Simons (2008) report that wages grew more slowly if a plant was taken over by another company, with only 10.6% growth compared with 12.3% in the rest of the market. This gap is also found for workers that move to a different employer after a takeover: their wage growth is lower compared with workers in firms where ownership does not change hands.

Many studies reveal that average increases in worker compensation often hide a more complex picture. An example is an early study on the wage effects of hostile takeovers that was conducted by Gokhale et al. in 1992. Using a relatively small sample of 14 hostile takeovers in the US, they first find that the composition of a company's workforce in terms of the proportion of senior positions affects the likelihood of hostile takeovers. Looking at post-takeover outcomes, the authors find that the number of

senior positions is reduced, which leads to an overall reduction in extra-marginal wage payments in the firm. Gokhale et al. mention that this is consistent with the hypothesis that ownership changes permit new owners the one-sided renegotiation of contracts. They highlight the danger that this might be at the expense of the long-term success of the target firm, as extra-marginal wages for older workers can be justified if they compensate for the reduced incentives for efforts as workers approach retirement.²⁶

There is also evidence that the distribution of benefits might become more unequal following a change in ownership. Rosett (1990), for example, finds that although shareholders profit from ownership changes, no commensurate improvements can be observed on the workers' side.

Davis and Wilson look at how mergers affect wages in a heavily unionised industry using the American railway industry as an example. They find that productivity increased dramatically over the period 1970 to 1994, rising by a factor of 3.5, so that overall employment fell, but real wages increased between 7.5% and 14.9%. The authors explain this by rent-sharing between firms and unionised labour and the changing profile of railway workers towards higher skill levels.

Oulton (1998) finds that firm size is a significant determinant of relative wages, but that this cannot explain the differences observed in foreign-owned firms.

Almeida (2004) notes the disproportional level of skilled employment in foreign-owned firms and the higher average wages²⁷ paid by those firms and investigates whether these characteristics are caused by foreign ownership, or whether they depend of pre-existing firm characteristics. Using Portuguese firm-level data for the period 1991 to 1998, a time that saw a tripling of foreign investment in the country. Almeida's sample includes 3,410 domestic firms, 194 foreign firms and 103 foreign acquisitions.

Almeida finds evidence of 'cherry-picking' on the part of foreign acquirers. In particular, his comparison of the employee profile of firms before and after a foreign acquisition shows that target firms are typically very similar to existing foreign-owned firms already (and significantly different from domestic non-target firms). Additional changes in the skills profile after the acquisition are insignificant. While wages rise after a foreign takeover for all

²⁶ On implicit contracts of this sort see for example Lazear, E. P. and Moore, R. L. (1984), "Incentives, Productivity, and Labor Contracts." *Quarterly Journal of Economics*, 99.

²⁷ Almeida cites previous research that estimates the wage premium of foreign ownership typically at between 5 and 10%, with even higher differentials (up to 21%) achieved by white-collar worker.

types of employees, the increase is smaller than a simple comparison between domestic and foreign-owned firms would suggest.

After controlling for firm and worker characteristics Almeida finds that foreign takeovers lead to an increase in wages of between 3% and 13% for manufacturing firms and up to 5% for non-manufacturing firms. The wage premium associated with foreign ownership increased with education level.

8.2.3 Other labour market effects

Conditions in the workplace that are affected by changes in ownership are not limited to employment and wages, but include other aspects as well. Comparatively well-researched are effects on skill-levels and education in the workforce of companies involved in takeovers. Here the overall picture suggests an increase in skill levels in firms after an ownership change. There is evidence that this is due to both increased investment in human capital after an ownership change, and to changes in the composition of the workforce.

Bandick and Karpaty (2007) in their study of foreign takeovers in Sweden – cited above in relation to employment effects – also looked at the skill levels in companies after acquisition. According to their evidence the increase in skilled employment is as high as 8%, almost double the baseline estimate. This means that foreign takeovers increase the overall skill level in a company.²⁸ The study finds that this effect is only observable where the acquired firms are not themselves multinationals.

Lichtenberg and Siegel (1992), who investigate the mix of administrative and production staff, find that whilst ownership change reduces employment in central offices there is little impact on production workers. This might suggest that efficiency gains in administrative functions are either greater or easier to realise than in production.

Other areas such as, labour relations and effects on women and minority employees are also considered in the literature. However, given the problems inherent in the analysis of these ‘soft’ factors, the empirical picture here is more fragmentary.

²⁸ In Bandick and Karpaty (2007), the increase in skill levels is due to changes in the composition of the workforce. Evidence for increased skill levels due to on-the-job training in foreign-owned firms is provided by Görg et al. (2007).

Bruining et al. (2004), in a comparative study of MBOs in the UK and the Netherlands, find positive effects on labour relations over a range of issues. The study is based on surveys of directors of 190 firms (145 in the UK and 45 in the Netherlands) between 1999 and 2001.

The authors hypothesize that MBOs create the “opportunity to reappraise policies”, as suggested by Shleifer and Summers (1988). However, rather than the unilateral abrogation of the implicit contracts governing labour relations that Shleifer and Summers expect to see following a takeover, MBOs seem to open a path to more harmonious relations, including a range of benefits for workers.

In particular, the authors find increased investment in human capital, higher real wages and better institutional arrangements in human resources management. The authors observe stronger positive effects in the UK, in what they see as a ‘less institutionalised environment’, although the end results are still below the Dutch level in terms of overall human resource management.

Table 6 summarises their findings: respondents reported increased employment and a higher status accorded to human resources issues, more resources being devoted to managing employees, more training, more flexible working arrangements, and improved trust between workers and managers.²⁹ There were no significant changes in other areas, such as avoiding compulsory redundancies, the use of internal promotion, the use of agency and temporary workers, the gap between working arrangements for managerial and other staff, and the diffusion of share-ownership throughout the company.

The authors see these results as confirmation that MBOs release ‘upside potential’ in the target firms. They speculate that higher investment in human capital is more attractive for managers after a buy-out, as the new management stands to benefit more from long-term growth of their new business, rather than short-term cash obtained at the expense of employees.

²⁹ In Table 6, higher levels of statistical significance indicate a higher degree of confidence that each variable is different pre and post MBO.

Table 6: Post-MBO changes in employee relations in the UK and the Netherlands (Bruining et al., 2004)

Which issues have changed as a direct result of the buy-out:	Mean UK (s.d.)	Mean NL (s.d.)	T test for Equality of Means (NL=1, UK=0)	Levene's F Test For Equality of Variances
Employment (3-point scale)				
Total number of employees	2.39 (0.82)	2.47 (0.79)	0.54	0.75
HR management issues (5-point scale)				
Importance of HRM issues	3.81 (0.96)	3.47 (0.67)	-2.20*	16.87***
Resources devoted to managing employees	3.63 (1.02)	3.42 (0.54)	-1.33	33.01***
The amount of training employees receive	3.83 (0.98)	3.20 (0.55)	-4.12***	35.23***
The flexibility shown by employees	3.92 (0.94)	3.50 (0.63)	-2.80**	19.92***
Workers responsibility for their jobs	4.05 (0.90)	3.73 (0.72)	-2.15*	8.39**
The total number of employees working in teams	3.78 (0.95)	3.40 (0.58)	-2.56*	44.61***
Avoiding lay-offs	3.12 (0.78)	3.11 (0.71)	-0.03	0.02
The use of internal promotion	3.48 (0.88)	3.27 (0.62)	-1.51	11.31**
Use of temporary workers only to cover shortages	3.25 (0.83)	2.86 (0.93)	-2.61**	1.21
The level of trust between managers and workers	3.94 (0.98)	3.62 (0.78)	-1.97	6.71*
The similarity of terms and conditions between managers and non-managers	3.39 (0.87)	3.22 (0.47)	-1.23	16.55***
Payment & rewards (1) (5-point scale)				
The number of staff whose performance is appraised on an annual or bi-annual basis	3.65 (0.87)	3.47 (0.69)	-1.26	9.31**
The number of staff receiving	3.69	3.27	-2.81**	18.41***

merit pay	(0.91)	(0.73)		
The percentage of non-manual employees owning shares in the company	3.27 (0.81)	3.33 (0.92)	0.36	0.80
Degree of employee involvement	4.07 (0.91)	3.80 (0.69)	-1.82	12.36***
Payment & rewards (2) (3-point scale)				
Earnings of directors	2.48 (0.69)	2.29 (0.66)	-1.66+	0.75
Earnings of middle managers	2.70 (0.47)	2.68 (0.47)	-0.24	0.10
Earnings of line managers	2.57 (0.51)	2.41 (0.55)	-1.69+	0.62
Earnings of non-managerial employees	2.54 (0.54)	2.51 (0.55)	-0.30	0.04

Sig. levels: + $p < 0.10$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Notes: Scales were as follows:

Employment (3-point scale): 1 = gone down, 2 = about the same, 3 = gone up.

HR management issues (5-point scale): 1 = decreased a lot; 2 = decreased; 3 = stayed the same; 4 = increased; 5 = increased a lot.

Payment & rewards (1) (5-point scale): 1 = decreased a lot, 2 = decreased, 3 = stayed the same, 4 = increased, 5 = increased a lot.

Payment & rewards (2) (3-point scale): 1 = gone down, 2 = about the same, 3 = gone up.

Source: Bruining et al. (2004), pp. 39-40.

In a rare attempt to explore the 'equity dimension' of ownership changes, Marsh et al. (2006) use a detailed dataset comprising the whole Swedish working population from 1985-1998 to analyse specifically the effects of ownership changes on women and minority employees. The authors do not find evidence for a reduction in the relative earnings and employment status of minority groups following a change in business ownership. While the overall effect of ownership changes on earnings growth is negative (see Table 5), such changes do not exacerbate the disadvantaged position of women and minority employees.

In Margolis' (2006) study, the employees most likely to lose their jobs tend to be younger, female and white-collar workers with low job tenure, low qualifications and other (unobserved) characteristics that are associated with lower wages.

The sparse empirical work on non-wage compensation also does not support the hypothesis that ownership changes reduce worker benefits. Studies by Mitchell and Mulherin (1989) and Pontiff et al. (1990), show that company pension funds are largely unaffected by ownership changes.

In another paper investigating non-wage labour market effects, Currie et al. (2004) examine working conditions for nurses following hospital mergers in California. Existing literature often views hospitals as local monopsonists in the labour market, especially for nurses, so that theory predicts wages below the competitive equilibrium (e.g. Yett, 1975). Empirical work on consolidation in the hospital sector, however, tends to find at most small effects on employment and wages (e.g. Sullivan, 1989; Hirsh and Schumacher, 1995, Boal and Ransom, 1997). The authors test the hypothesis, based on qualitative surveys of nursing staff, that takeovers manifest themselves indirectly in the form of increased workloads rather than through contractual wage reductions. They posit an extension of the simple monopsony labour market model where the employer sets not only wages, but also minimum effort levels. In the new model, an increase in an employer's market power does indeed drive up the average workload, while the effect on wages and employment is ambiguous. The authors assert that this is consistent with the empirical picture and note that there is no empirical difference between not-for-profit providers and commercial hospitals in this regard.

The finding that ownership changes can induce higher effort levels, rather than lower nominal wages is potentially important. Effort levels are typically unobserved in the studies that find higher wages after an ownership change, so accounting for increased effort might reduce somewhat the positive effect of higher wages on employees.

8.2.4 Company performance

After looking in detail at labour market effects in the previous section, we now turn our attention to the evidence regarding the performance of companies involved in takeovers more broadly. The empirical work in this area differs in the level of detail. While some studies look at specific aspects of company performance, such as investment and worker productivity, other look at broader measures of performance, such as profitability.

Foreign investment and labour productivity

Productivity is the efficiency with which a productive process can transform inputs into outputs. In economics inputs are typically split into a labour component and a capital component. Over a certain range, the proportion of capital and labour inputs is flexible, i.e. the same amount of output can be produced using different combinations of labour and capital. Firms can increase productivity in a number of ways, either by increasing labour productivity through education and training, by using more advanced technologies to boost capital productivity, or by improvements in total factor productivity, a broad concept that includes advances in management practices and business models, which help to improve the overall production process.

The literature in this area is often focused on the effects of foreign ownership on productivity. Foreign ownership is seen as a way in which superior business practices, including production techniques (the capital-labour mix), human resource management (improvements in human capital), technology spillovers (increasing capital productivity) and other beneficial aspects of foreign business practice can be introduced to the host country. Foreign ownership can come about through greenfield investments, i.e. without a change in ownership from a domestic to a foreign firm. However, according to Griffith et al. (2004), takeovers are the most frequent mode of entry for foreign firms into the UK market.

Table 7: Mode of entry of foreign firms into the UK

Sector	1999-2001, Percentage entry by foreign-owned multinational			
	Greenfield	Foreign firm takes over:		
		British domestic plant	British multinational plant	Foreign-multinational plant
Production	22.3%	53.8%	10.0%	13.9%
Service sectors	30.7%	46.0%	9.7%	13.5%

Note: The total number of production (service) sector entrants is 13,656 (65,409) plants.

Source: Griffith et al. (2004), p. 6.

There is good evidence that suggests that foreign ownership enhances productivity. Oulton (1998) for example analyses the productivity effect of foreign ownership using a sample of 1,752 UK manufacturing firms. He finds 50% higher capital intensity in foreign-owned companies and 38% higher value-added per worker. Even after allowing for their higher capital intensity, US-owned (but not other foreign-owned) establishments have an additional productivity advantage of between 9 and 20%. Harris and Robinson (2003) find similar positive effects and highlight that this represents an important rationale for governments to encourage foreign investment.³⁰

However, as was highlighted by Almeida (2004), it would be wrong to attribute these remarkable productivity advantages to the simple fact that the firms are foreign-owned. Rather, we can expect that a large part of the differences from domestically owned establishments are due to pre-existing firm characteristics, which made the firms in question such attractive targets for foreign investment in the first place. Nonetheless, as Almeida discovered, there is a residual effect that can be attributed to foreign ownership per se, which might be associated with transfer of productivity enhancing knowledge and business practices imported through the foreign owners.³¹

Oulton considers if factors such as industrial sector and firm size can account for the differences in productivity, but finds that a large and significant effect of foreign ownership remains after correcting for these factors.

He then estimates the effect of a number of measurable inputs, including capital intensity and proxies for labour quality and finds that they explain 49% of the productivity premium of US-owned firms. For foreign owners of other nationalities, this figure rises to 97%.

Griffith and Simpson (2003) focus their attention on labour productivity and find that foreign-owned firms invest considerably more per employee than do domestically owned firms. According to their data, this difference fully explains the productivity advantage of foreign-owned firms. Differences in labour productivity are also reflected in higher wages in foreign-owned establishments. A result that has potential implications for Wales is provided by Driffield and Girma (2003), who look at regional wage-spillovers arising from the presence of higher-paying foreign firms. They find that such wage-

³⁰ For more recent evidence see Keller and Yeaple (2008).

³¹ Similarly, Karpaty (2007), also finds no evidence that pre-selection alone can explain the productivity advantage enjoyed by foreign-owned firms, based on his study of Swedish firms between 1986 and 2002.

spillovers are largely confined to the region where the investment takes place.³²

Oulton offers no firm conclusions as to the causes of the observed productivity advantages enjoyed by foreign-owned firms. While higher capital intensity might be explained by better access to capital markets, higher risks faced by UK companies (Oulton mentions the lingering memory of past phases of macroeconomic instability in the UK), or superior foreign technologies and business practices, the author finds none of these explanations to be convincing on its own.

Griffith et al. (2004) find further evidence for ‘cherry-picking’ by acquirers in the UK service sector. An important contribution of their paper is to highlight the importance of foreign owners’ investment in domestic research and development for spillovers to occur.

Since this study is about the impacts of changes in ownership,³³ we do not focus any further here on the literature that relates to the productivity levels of foreign owned firms in comparison with domestically owned firms.

On the specific question of whether changes in ownership affect productivity, the evidence is more mixed.

An early study by McGuckin and Nguyen (1995) finds that more productive plants are more likely to be taken over. In their data on US plants over the period 1977 to 1987, they further see evidence that unproductive plants only get taken over when they are unusually large. They also find that productivity increases after such takeovers.

Harris and Robinson (2002) provide additional evidence from the UK that foreign-owned companies that acquire existing domestically owned manufacturing plants target the most productive ones. This suggests that simple comparisons between the acquired plants and the market average cannot be used to infer a causal effect between foreign takeovers and higher productivity. In fact, the authors find that productivity in the plants they looked at decreased post-takeover, in contradiction to McGuckin and Nguyen’s (1995) results. They speculate that this is due to difficulties in integrating new plants into an existing corporate structure.

³² In another 2003 paper Girma et al. find no aggregate evidence of wage spillovers from the presence of foreign firms in the UK economy

³³ We also understand the Economic Research Unit is currently funding separate research into the evidence on the economic impacts of FDI.

Additional plant-level evidence for problematic aspects of ownership changes is provided by Harris and Hassaszadeh (2001). They look at the UK manufacturing section and find that ownership changes increase the likelihood of a plant being closed down.

Griffith and Simpson (2003), while adding to the substantial body of evidence for the higher productivity of foreign-owned firms question whether ownership changes can help to promote the diffusion of productivity-enhancing practices in the UK. Indeed, they find that a change in ownership nationality does not induce large changes in labour productivity levels.³⁴ This suggests that higher investment per employee over a long time is key to increased productivity, and not, for instance, the one-off introduction of superior management practices after a foreign takeover.

An insight into the process by which foreign ownership enhances productivity is provided by Görg et al. (2007). The authors focus on employee-training, which they find to be more productive in foreign-owned firms. They find that training then translates over time into higher productivity and higher wages, but only for those workers that actually took part in the training. Girma and Görg (2006) also highlight the heterogeneity of outcomes for different types of workers in companies that are subject to a change in ownership. Interestingly, benefits in terms of wage increases for both skilled and unskilled workers seem to be highest when the acquirer of a UK firms is a US company.

Do changes in ownership make companies more profitable? Although there is some evidence to support this hypothesis, it is unclear as to the causal relationship. Research in this area has found that profitability after an ownership change often depends on the type of transaction. While hostile takeovers have often found to be more profitable than other types, the evidence is far from unambiguous. Two examples from the UK illustrate the contradictory nature of the evidence:

Looking at data on hostile and friendly takeovers in the UK, Cosh and Guest (2001) find that hostile takeovers lead to significant increases in profit, mainly due to disposal of assets. Friendly takeovers, on the other hand, have a negative impact on post-takeover profitability and long-term share returns. Overall, the authors see little impact of takeovers on the performance of target companies.

³⁴ See also Conyon et al. (2003) , who estimate a productivity increase of 13% following foreign acquisition of UK companies. Slightly lower results, in the range 3-9% are obtained by Karpaty (2007) for Swedish firms. Both studies use sophisticated propensity-score matching techniques to isolate the effect of ownership changes. Note that the results are not necessarily contradictory; Karpaty (2007) finds that productivity improvements are only realised 3 years after takeover.

In apparent contradiction, Devereux and Johnston (2006) find significant and large benefits for their sample of UK companies in terms of post-acquisition rate of profit, but only in the case of friendly takeovers. The authors note that their results contradict much of the previous research in this area. They also report that hostile takeovers do not have statistically significant effects on company performance.

In an evaluation of 93 empirical studies on the topic, King et al. (2004) conclude that there is no evidence that profitability increases after mergers and acquisitions.

Finally, there is some evidence that ownership changes increase the probability of market exit, especially for SMEs. Foreman-Peck and Nicholls (2008), in a study on SME takeovers in the UK, find that SMEs are between 6 and 10 percentage points more likely to exit within a year after a takeover.

The specific problems faced by family-owned enterprises are likely to contribute to this outcome. Santarelli and Lotti (2005) make a connection between SME exit and difficulties in handing over management responsibilities to either a new generation of family members or outside management. The issues surrounding family-owned businesses are explored in the next section.

8.2.5 Family business transfers

Family business transfers raise a number of additional issues in relation to ownership changes, in particular the inter-generational transfer of ownership. This section highlights some recent findings of the literature that has developed around this area.

Transfers of ownership present particular challenges for family-run businesses. In fact, once such concerns have reached their 30th year in the market, they face a very high risk of sudden exit, owing to difficulties in arranging a successful succession after the founding generation reaches the end of its working life.³⁵

Social norms mean that succession within the family is often the default option. In the UK, family succession is further strongly encouraged by the tax system.³⁶ In a thorough study, Bloom and Van Reenen (2007), find strong evidence that family businesses lose competitiveness when management responsibilities are passed on to a new generation of family members.

³⁵ See Santarelli and Lotti (2005).

³⁶ UK law provides for a 100% tax exemption for family-run businesses that are handed down within the family. See

Their study of companies in France, Germany, the UK and the US compares 415 firms that practice family succession with 307 firms that do not. The authors find that bad management is considerably more widespread in the former category and that management quality is strongly correlated with firm performance (such as profitability, productivity and survival). The authors speculate that hereditary family management can explain the lagging industrial performance of the UK and France compared with Germany and the US.

An interesting paper using evidence from Denmark deals with the potential problem of endogeneity in the decision of a business owner to pass his business on to one of his or her children.³⁷ Based on the empirically higher likelihood that companies are passed on to sons, the authors use the sex of the owner's first-born child as an instrumental variable to control for potential selection effects, on the assumption that it is unrelated to firm performance.

With this methodology, the authors find a significantly larger negative effect of family succession than the literature at large. According to their estimates, the succession of a family member to the role of CEO reduces a firm's profitability on assets by at least 6 percentage points.

Cuculelli and Micucci (2008) provide evidence on Italian firms where the founder is succeeded by a family member. In their sample of 3,548 small companies (typically fewer than 50 employees), inherited management within a family negatively affects the firms' performance, and this decrease is concentrated among companies that were doing well before.

The authors also rebut the argument that the negative impact of family succession represents a simple mean reversion after an extraordinary performance of the founding generation.³⁸

Mixed evidence on the effect of buy-outs on family businesses is provided by Buttignon et al. (2005). Using data on 21 buy-outs of Italian family firms by private equity investors in the 1990, the researchers find no significant overall changes in performance. However, the authors' case studies reveal that ownership change disrupts performance trends in family businesses. In their sample, 65% of target firms saw a reversion of trends, with good performers (in terms of turnover and profitability) becoming bad and vice versa.

³⁷ Bennedsen et al. (2005).

³⁸ This follows Miller et al. (2007) who suggest that the empirically superior performance of family-owned firms might be primarily driven by the sub-sample of founder-run companies.

Also, a 2007 study of Italian SMEs by Cerrato and Piva finds that family-owned companies are less likely to be active in export markets, thus lacking a significant source for development. A change in ownership is a way to escape this sort of parochialism by family-run firms.

The consensus emerging from the recent literature on family-business transfers is that:

- Succession is a perilous event for family-owned business and carries a high likelihood of market exit.
- A passing on of ownership within the family is detrimental to company performance.

There is evidence that these problems are particularly acute in the UK, where family ownership and succession are more widespread than in many other countries (15% compared with 3% in Germany and the US).³⁹

8.3 Conclusions

8.3.1 Assessing the relevance of empirical results in the Welsh context

We restricted our review of the empirical literature to high-quality research by some of the leading experts in the field. We also focused on research that is recent, and reviewed US material only where it represents an important contribution to the literature.

In these conclusions, we attempt to highlight those results that have particular relevance for the purpose of this study, i.e. for providing context for, and aid understanding of, the situation relating to ownership changes in Wales. Our assessment is based on the technical quality of the studies we reviewed and the relevance of the data they use. While not attempting to establish a ranking of the research literature in terms of quality, we use judgement on three issues in order to filter out results that may be less informative for the Welsh situation. These are:

- **Geography:** we attach greater weight to studies that are concerned with the situation in the United Kingdom relative to studies that deal with other European countries or the United States, which share fewer

³⁹ Bloom and Van Reenen (2007).

characteristics with the Wales.

- **Data quality:** we do not attempt to judge the quality of the databases used in the various pieces of empirical analysis that we discussed in the preceding chapter, but we use simple criteria, such as sample size, level of aggregation, and timeliness to form an impression of the robustness of the results.
- **Methodology:** as we have explained, measuring the impact of ownership changes requires overcoming a potential sample selection bias. While we are not arguing the merits of particular ways to do this, we are inclined to place more confidence in studies that address the issue explicitly.

8.3.2 Results emerging from the empirical literature on ownership changes

Overall, the range of evidence in the literature on the effects of changes in business ownership on employment, wages and company performance is rather limited. The range of studies is not wide, particularly when consideration is given to the conclusions that the impacts vary significantly depending on the circumstances of the change in business ownership. This leaves plenty of evidence gaps, with very little evidence in relation to many of those circumstances.

Nearly all of the evidence that does exist concerns the impacts of mergers and acquisitions and is based on firm or plant level data. We found only a handful of papers focussed on the impacts of MBOs and IPOs and family-business transfers.

As it is, the literature gives rather mixed signals. Nevertheless it is possible to draw out some broad themes, as follows.

The empirical literature on the labour market effects of ownership changes seems to contradict - on balance - the bleak view promulgated by Shleifer and Summers (1988), among others.

On employment, the evidence is mixed, although most studies find that employment decreases after an ownership change. Not all of the empirical studies address the problem that companies that change ownership might not be a randomly selected sample of the total company population. If there are factors that make a company an attractive candidate for takeover and at the same time affect labour market outcomes, it could be misleading to compare such a company with the rest of the market without correcting for these factors. In these cases the estimated differences, between companies that are taken over and those that are not, do not measure the impact of the change in

ownership as such, but the impact of unobserved characteristics that drive both the ownership change and the labour market effect.

Studies that go to some length to address this problem, like the ones by Bandick and Karpaty, and Margolis, are less likely to find significant negative effects on employment. In the absence of more studies of this nature, the extent to which this issue casts doubt on the earlier results, which typically find substantial employment losses, is at present unclear.

However, to date, the UK evidence of job losses remains strong. Studies by Devereux and Johnston (2006), Harris et al. (2005) and Conyon et al. (2000, 2002) have all found substantial net losses in employment for different types of ownership change, including mergers, acquisitions and management buy-outs. Some authors, including Yurtoglu and Gugler (2004), blame this on the labour market rigidity, which they claim continues to distinguish Europe from the United States.

There is less strong evidence that hostile mergers result in particularly large employment reductions. Although Conyon et al.'s 2002 paper, which finds that negative employment effects of hostile takeovers are twice as large as those of friendly transactions, is more convincing than their 2000 paper that finds no difference between the two, the lack of plant-level evidence means that the mechanism by which employment losses are more severe after hostile transaction is not well understood. However, the assumption that hostile takeovers are more likely to lead to job losses as they are often associated with large-scale divestitures (compare Cosh and Guest, 2001) remains plausible.

However, the datasets used in the UK studies cannot match the Swedish data used by Bandick and Karpaty (2007) and others in terms of detail and comprehensiveness. This dearth of micro-level evidence on the UK situation suggests that hostility towards ownership changes based on presumed job losses could be misplaced.

In addition, there is evidence that firm and plant-level outcomes are different.⁴⁰ While takeovers might increase productivity and thus improve the overall economic performance of the company in question, and thus increased employment over time, individual plants might experience significant employment losses. This suggests that the Welsh situation should be analysed at a more detailed level than this study permits, taking into account the location of different company functions, which might see very different impacts following an ownership change.

⁴⁰ Compare for example Bruining et al. (2004) with Harris et al. (2005).

On wages, a number of studies report substantial increases after an ownership change for all types of employees. Conyon et al. (2004) quantify the wage effect of mergers and find an average wage increase of 11% after two years following a merger, a figure that rises to 14% in related mergers.⁴¹ In the UK, however, the work of Devereux and Johnston (2006) finds no evidence of significant positive wage effects of acquisitions. Evidence from Sweden (Marsh et al., 2006 and Siegel and Simons, 2008) suggests that earnings growth for employees in firms that experience ownership changes might be lower than in comparable firms that do not.

Overall, we consider the evidence of wage effects that can be attributed directly to ownership changes, rather than wage increases arising over time from productivity effects as weak, not least because there is no convincing theory behind it.

There is evidence that ownership changes increase skill levels in the company and that other worker benefits, such as pension funds, are unaffected. On the other hand, in a largely un-researched area of non-wage compensation, Currie et al. (2004) report an example where ownership changes induce higher effort levels, which are not subject of contracts, and warn that this can reduce service quality.

One of the few robust results emerging from the literature is that foreign ownership causes higher productivity. Although ‘cherry-picking’, that is, the selection of more productive firms as targets for takeovers is likely to contribute to the observed differences, there is good evidence that there remains a positive residual effect.⁴² However, it is not the ownership change as such, but the greater investment in labour productivity by foreign-owned firms that seems to be driving the effect.

Outcomes for individual workers are heterogeneous, as part of the productivity increase is due to changes in the composition of the workforce. But there is also evidence of increases in the skill-level of the workforce after foreign takeovers that are due to ongoing investment in human capital,

⁴¹ For qualitative evidence see also Bruining et al. (2004).

⁴² See for example the high-quality econometric work by Conyon et al. (2003), Karpaty (2007) and Girma and Görg (2003).

including training. These effects do not materialise immediately, but might take several years to show in the data.⁴³

The overall effect on firm profitability is less certain. Although various authors report increases in profitability post-takeover, no consensus has yet emerged in the literature.⁴⁴ The UK evidence of company profitability following takeovers is limited and provides mixed results. The international evidence suggests positive effects of hostile, but not friendly takeovers.

On the specific issue of family businesses, the evidence on economic performance in terms of turnover and profitability is mixed, with some studies suggesting that non-family businesses perform better and others suggesting that family businesses perform better. Some authors believe that the latter observation is misleading, as it pools observations on businesses run by founder-entrepreneurs, on whose superior performance there is more evidence, and other family businesses that tend to perform worse than the average.⁴⁵ Some studies suggest that family businesses tend to employ more staff, though others were unable to find any differences with non-family businesses in relation to employment levels. There is evidence to suggest that family businesses provide less training for employees than non-family businesses. The literature on changes in the ownership of family businesses focuses on the transition of ownership between generations within the same family. There is a strong consensus that family succession is detrimental for company performance.

⁴³ Good evidence, owing to the particular detailed data available, comes from Sweden, e.g. Karpaty (2007). The Swedish data allows not only the matching of employees and firms, but also permits the tracking of individual employees over time, and contains information on skill and education levels, as well as wages. While the results cannot be applied to Wales in a wholesale fashion, the Swedish results have a very strong empirical basis. Productivity increases related to better use of human capital as a result of an ownership change can be expected with some confidence. See also Griffith and Simpson (2003). A note of caution is provided by Driffield and Girma (2003): any wage spillovers that might arise from foreign presence might be confined to the regions in which the foreign presence is established, which means Wales cannot expect to reap benefits from foreign investment in other parts of the UK.

⁴⁴ For a survey of the evidence see King et al. (2004)

⁴⁵ See Cuculelli and Micucci (2008).

9 Interpretation

In this Chapter we discuss the outputs from this exploratory study - the review of data on changes in business ownership and the review of evidence in the literature - and we outline where further policy relevant research may be desirable. The nature of the evidence suggests that it is not possible to draw policy conclusions without further investigation.

The data that we present suggest that both the number and the rate of transactions (per business unit) are high in Wales compared to the nine other regions chosen for comparison.

In respect of other measures such as the value of deals and the profile of target companies (sales, profits, employee numbers), data for transactions in Wales do not appear very different from data for many of the other regions chosen for comparison.

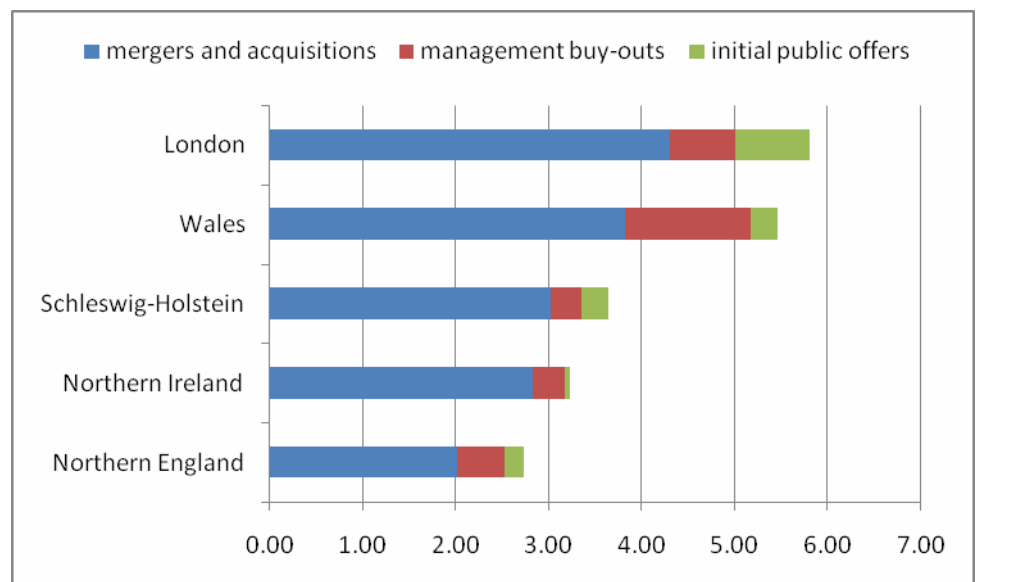
This raises two key questions:

- Why is the rate of transactions higher in Wales?
- Does this high level of transactions matter? What impact is it likely to have on the Welsh economy?

A key first step towards understanding the significance of these issues is likely to be a wider analysis of the data to understand whether the rate of transactions in Wales would stand out from a much bigger sample of EU regions.

As an example, we picked one additional region, London, for comparison in terms of the number of transactions per 1,000 business units over the period 1997-2008. Figure 60 below shows a comparison of the figures for London with the four of our regions that had the highest numbers of transactions, including Wales. Whilst London had a higher rate of total transactions and higher rates of mergers and acquisitions and IPOs, Wales had a considerably higher rate of MBOs over the period.

We also examined data for the South East of England (not shown in Figure 60) – transaction rates there were much lower, 0.58 per 1,000 in total, the same as Région Wallonne.

Figure 60: Number of deals per 1,000 business units (total: 1997 – 2008)

Source: Bureau van Dijk (ZEPHYR).

Comparing the proportion of local business units in manufacturing (where ownership changes are frequent) does not suggest that a particularly large manufacturing sector can explain the number of transactions in Wales.⁴⁶ Further investigation of the robustness and consistency of the data on both the number of transactions and the number of local business units would also be desirable. One of the clear findings is that, on average, larger and more productive businesses are more likely to be taken over.

With a bigger sample of regions it may be possible to undertake a statistical analysis of which factors drive differences in rates of transactions across the regions. In addition to wider economic factors such as income per head and industrial structure, institutional factors that influence the costs of ownership change, such as ownership structures, access to capital markets and restrictions on mergers may also be important drivers. One possible explanation for the tendency for UK regions to have higher rates of ownership change than regions in some other countries is not so much that rates of ownership change in the UK are “high” but more that rates are suppressed elsewhere because institutional factors may place more constraints on ownership changes in those countries.

⁴⁶ See Table 11 (Annex 2). Note that the number of financial service businesses is missing from the table. The true proportion of local business units for the remaining sectors is thus inflated.

The literature does not provide a clear answer to the question about whether the high rate of transactions matters. Theoretical work tends to assume that improvement in company performance is the main driver of changes in ownership, though the empirical work suggests that improvements in company performance don't necessarily always follow from ownership changes. Improvements in company performance would in general be viewed as positive for the wider economy, though this will not be the case where the purpose and effect of mergers is to raise market power.

The literature on the employment and wage impacts of changes in business ownership suggests that the impacts depend very much on the specific circumstances of the transaction. Important factors include motivation of the acquirer, extent to which the target company is in favour of the transaction, industry sector, type of ownership change, extent of labour market rigidity. It is also important to understand that the evidence we review focuses on firm level and plant level data and so employment impacts, for example, relate to impacts at the level of the firm/plant. We did not find any evidence that would directly inform consideration of whether high transaction rates at the macroeconomic level are likely to impact on aggregate employment.

These characteristics of the evidence make it difficult to draw generic conclusions for Wales without a much more detailed analysis of the transactions that are taking place in Wales. In any case, the data on ownership changes in Wales over recent years show that only a very small proportion of the workforce is affected by such changes.

In order to better understand the implications of the rates of business ownership change experienced in Wales, a more detailed deal by deal analysis of the nature of these transactions in Wales could be useful. An understanding of the motivation behind the transactions and the nature and location of ownership could further understanding of the Welsh position in the context of the effects noted in the literature.

A direct quantitative analysis of the impacts of changes in business ownership in Wales would be likely to provide more robust insights into whether and how transactions in Wales have impacted on employment levels and conditions and on company performance. The Bureau van Dijk data may well provide a useful basis for this type of analysis (in relation to employment levels), though the relatively small dataset for Wales means that problems of missing data could mean that this dataset needs to be supplemented in some cases by direct reference to company financial reports. The lack of published data on local business units means that such an analysis would need to focus on target (and/or acquirer) companies that had their registered office in Wales. An investigation into impacts on wage levels and/or non-wage compensation would be likely to require much more primary data collection and hence be much more resource intensive.

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Annex 1 Selection of regions for comparison

This Annex explains our choice of comparator regions and provides a short profile of the selected regions.

In order to identify comparator regions we have relied on a ready-made system of regional classification, the European Union's Nomenclature of Units for Territorial Statistics (NUTS).⁴⁷ However, while European institutions provide a wealth of data for regions at the various NUTS levels, independent information providers do not yet use the system consistently. Cases where this matters for our study are discussed further below.

In this section we attempt to identify regions similar to Wales in terms of characteristics that

- are comparable across regions,
- comprehensively available at the regional level and,
- can be expected to be major factors in determining the dynamics of ownership changes in the selected regions.

The most useful statistic that meets the criteria listed above is GDP per head. The dynamics of income levels can be taken as a proxy for economic development (i.e. companies in a regions with similar income levels and growth performance can be expected to be similarly attractive as targets for takeovers). Moreover, given the convergence in prices across the EU and the relative homogeneity in many other areas, GDP per head might even be informative of the industrial mix in a broad sense (i.e. a similar GDP per head in two regions could indicate a similar share of the service sector in the two economies).

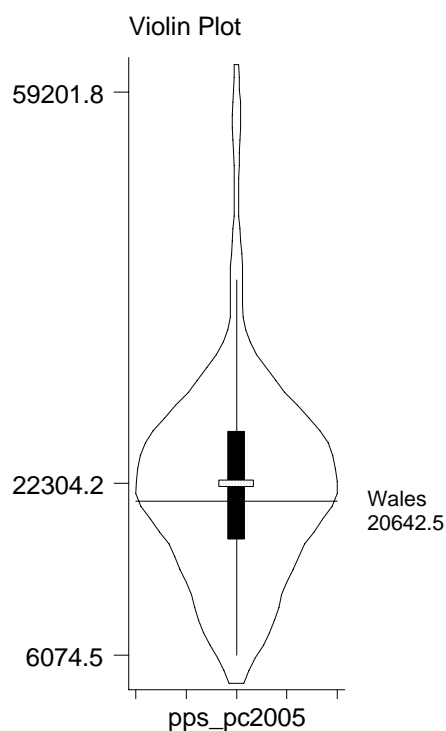
To identify suitable comparators we first look at the distribution of GDP per head across the EU's 97 NUTS 1 regions.⁴⁸ As Figure 61 shows, Wales, with a GDP per head of just under PPS⁴⁹ 21,000 falls in the 5th decile of the distribution, close to the median value (Table 8).

⁴⁷ For details see Council regulation 2223/1996 on ESA 1995 (European System of Accounts) points 2.05, 13.07, published in Official Journal L 310, 30.11.1996.

⁴⁸ As Wales is classified as a NUTS 1 region, we limited our search to regions at the same level.

⁴⁹ PPS is an artificial common currency that eliminates the differences in price levels between countries, thus allowing meaningful volume comparisons of GDP between countries.

Figure 61: Distribution of GDP per head in 2005 (Purchasing Power Parities*) across NUTS 1 regions**



The plot on the left shows a summary of the distribution of per-capita GDP across the 97 NUTS 1 regions. It displays the minimum, median and maximum of the distribution; the inter-quartile range (the black rectangle in the centre); the adjacent value range (the protruding lines, 1.5xIQR), all enclosed by the estimated density of the distribution.

The value for Wales is indicated by a separate horizontal line.

Note: * Figures are expressed in PPS. 2005 is the latest year for which a complete set of data is available ** Nomenclature of Units for Territorial Statistics. NUTS 1 is the broadest sub-national classification. In the UK the NUTS 1 regions are the regions of England (East Midlands, East of England, London, North East, North West, South East, South West, West Midlands, Yorkshire and the Humber), as well as Wales, Scotland, and Northern Ireland.

Source: LE Wales, based on Eurostat.

Table 8: GDP per head in 2005 (Purchasing Power Parities) - Deciles over NUTS 1 regions

Decile	Upper limit (PPS)
1 st	11,067
2 nd	15,324
3 rd	17,884
4 th	20,006
5 th	22,304
6 th	24,293
7 th	25,427
8 th	28,464
9 th	31,376
10 th	59,202

Note: *Income per head in Wales: 20,642.5 PPS.

Source: LE Wales, based on Eurostat.

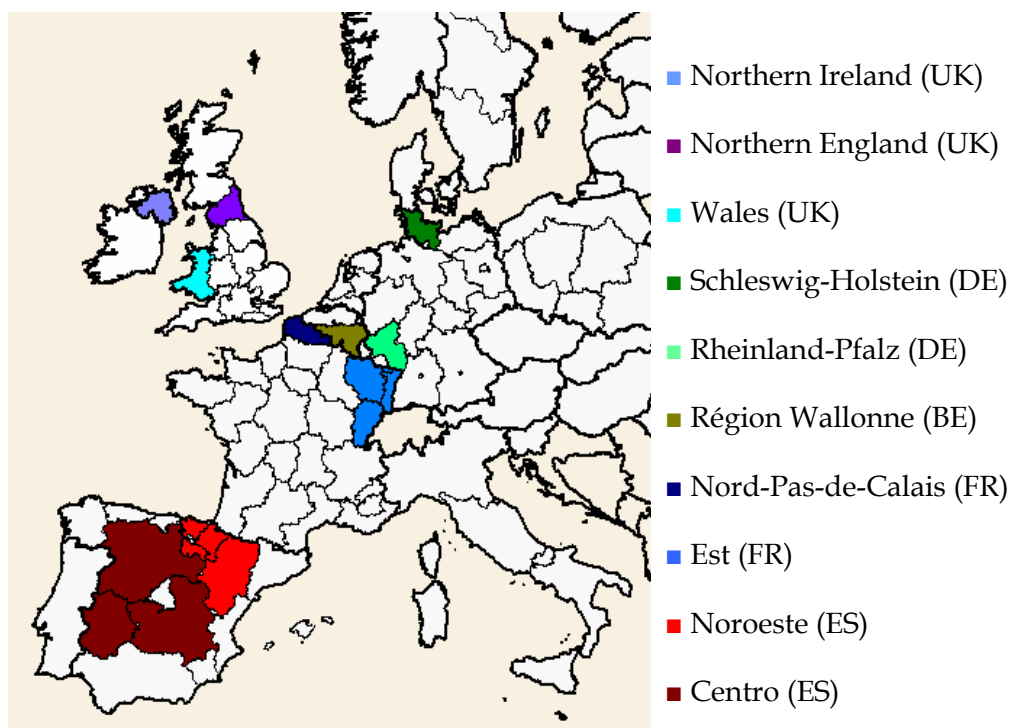
Comparator regions are selected in the first instance based on their closeness to Wales in terms of GDP per head. We consider the three central deciles of the GDP-per-head distribution as adequately close. In order to narrow down the list of candidate regions, we then use a more qualitative assessment:

After excluding island economies (such as Cyprus, Madeira, and the Canary Islands), Eastern European Member States with a history of transition from communism, and disproportionately large economies (like the Bassin Parisien), we are left with the following list of 10 regions, which we consider to be appropriate comparators:

- Région Wallonne (Belgium)
- Rheinland-Pfalz (Germany)
- Schleswig-Holstein (Germany)
- Est (France)

- Nord – Pas-de-Calais
- Noroeste (Spain)
- Centro (Spain)
- Northern Ireland (United Kingdom)
- Northern England (United Kingdom)⁵⁰
- Wales (United Kingdom)

Table 9: Selected comparator regions (NUTS 1)

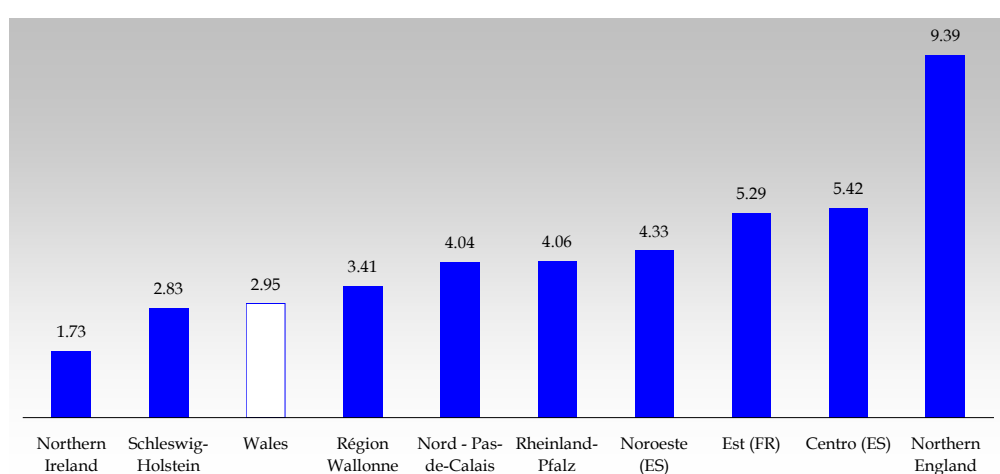


Source: LE Wales.

⁵⁰ For Northern England, instead of the two separate NUTS 1 regions, we use the “Northern” region as defined in AMADEUS and ZEPHYR. See the discussion in section 2.2.1 below.

It is important to remember that the regions we look at remain a highly disparate group. In terms of population, for example, Wales, at 2.95 million, is among the smallest of the selected regions. More significantly for our purpose, the number of companies operating in each region appears highly variable.

Figure 62: Potential comparator regions (NUTS 1) – population* in 2005 (millions)



Note: * annual average.

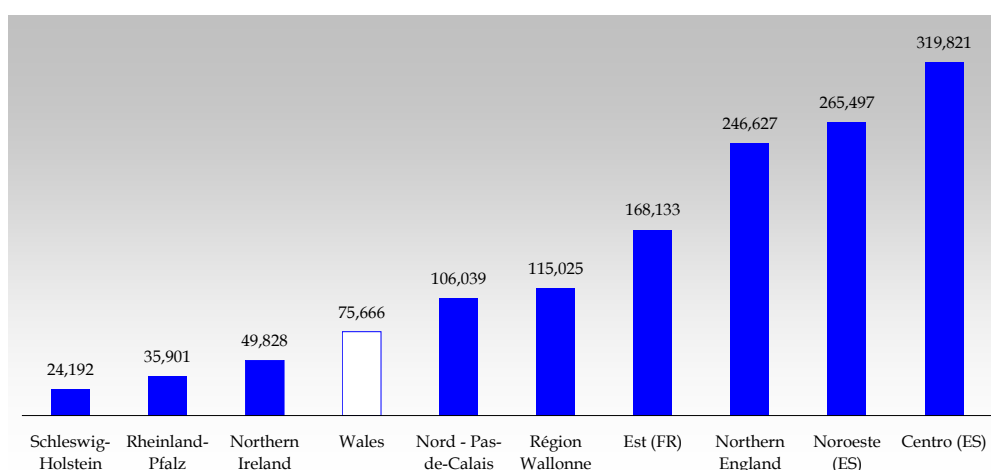
Source: Eurostat.

A crucial issue in terms of the comparability of selected regions is the number of data records available. All other things remaining equal, a greater number of companies can be expected to give rise to a greater number of ownership changes.

The number of businesses operating in a region is difficult to determine. Statistics tend to be based either on the location where a company is registered, or on the location of individual business units. While the first method will tend to understate the number of businesses, especially in peripheral regions, the second is likely to overstate it, and is highly dependent on the industrial structure (retail businesses, for example, can have a very large number of outlets, which can skew the picture considerably).

In the case of Wales, which has relatively few registered companies, owing to its proximity to, and longstanding integration into, the economic and financial centres of England, we believe that the number of business units might convey a more accurate picture.

Figure 63: Comparator regions (NUTS 1) - number of local units*



Note: * "a local unit is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place. At or from this place economic activity is carried out for which - save for certain exceptions - one or more persons work (even if only part-time) for one and the same enterprise" (European Union, Council Regulation (EEC) No 696/93 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community (Official Journal of the European Communities No L 076, 30/03/1993, p. 1), Section III F of 15.03.1993 on the statistical units for the observation and analysis of the production system in the Community). A detailed breakdown by industrial sectors is provided in an annex.

Source: Eurostat

A1.1 Number of local business units by region and sector

See table overleaf.

Table 10: Comparator regions (NUTS 1) - number of businesses (local units) by sector (2005)

<i>Sector (NACE Rev. 1 Sections)</i>	<i>Centro (ES)</i>	<i>Est (FR)</i>	<i>Nord - Pas-de-Calais</i>	<i>Noroeste (ES)</i>	<i>Northern England</i>	<i>Northern Ireland</i>	<i>Rheinland-Pfalz</i>	<i>Région Wallonne</i>	<i>Schleswig-Holstein</i>	<i>Wales</i>
Construction	65,183	20,888	10,768	40,357	28,146	9,982	690	18,632*	449	10,235
Electricity, gas and water supply	746	1,251	572	384	362	125	257	129*	227	165
Financial intermediation	-	-	-	-	-	-	-	-	-	-
Hotels and restaurants	38,955	16,307	11,967	36,686	24,276	4,534	8,533*	11,853*	8,074*	9,073
Manufacturing	28,357	22,476	12,518	19,917	23,575	4,778	2,009	10,891*	1,274	6,958
Mining and quarrying	724	415	78	540	265	163	97	143*	46	144
Real estate, renting and business activities	48,801	36,964	22,863	49,172	81,552	10,559	28,509	25,050*	18,841	21,453
Transport, storage and communication	24,845	10,190	6,898	22,797	14,393	3,226	4,339	4,430*	3,355	4,603
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	112,210	59,642	40,375	95,644	74,058	16,461	11,464**	43,897*	9,503**	23,035
Total	319,821	168,133	106,039	265,497	246,627	49,828	35,901	115,025**	24,192	75,666

Notes * NACE (Rev. 1) sections. * latest available data for Schleswig-Holstein and Rheinland-Pfalz: 1999; Région Wallonne: 2001. ** Eurostat data missing for Rheinland-Pfalz and Schleswig-Holstein. The figures given are the number of enterprises with registered head office in the region (Source: AMADEUS).

Source: Eurostat, Bureau van Dijk.

Table 11: Comparator regions (NUTS 1) – local business units, % of total by sector (2005)

<i>Sector (NACE Rev. 1 Sections)</i>	<i>Centro (ES)</i>	<i>Est (FR)</i>	<i>Nord - Pas-de-Calais</i>	<i>Noroeste (ES)</i>	<i>Northern England</i>	<i>Northern Ireland</i>	<i>Rheinland-Pfalz</i>	<i>Région Wallonne</i>	<i>Schleswig-Holstein</i>	<i>Wales</i>
Construction	20.4%	12.4%	10.2%	15.2%	11.4%	20.0%	1.9%	16.2%*	1.9%	13.5%
Electricity, gas and water supply	0.2%	0.7%	0.5%	0.1%	0.1%	0.3%	0.7%	0.1%*	0.9%	0.2%
Financial intermediation	-	-	-	-	-	-	-	-	-	-
Hotels and restaurants	12.2%	9.7%	11.3%	13.8%	9.8%	9.1%	23.8%*	10.3%*	33.4%*	12.0%
Manufacturing	8.9%	13.4%	11.8%	7.5%	9.6%	9.6%	5.6%	9.5%*	5.3%	9.2%
Mining and quarrying	0.2%	0.2%	0.1%	0.2%	0.1%	0.3%	0.3%	0.1%*	0.2%	0.2%
Real estate, renting and business activities	15.3%	22.0%	21.6%	18.5%	33.1%	21.2%	79.4%	21.8%*	77.9%	28.4%
Transport, storage and communication	7.8%	6.1%	6.5%	8.6%	5.8%	6.5%	12.1%	3.9%*	13.9%	6.1%
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	35.1%	35.5%	38.1%	36.0%	30.0%	33.0%	31.9%**	38.2%*	39.3%**	30.4%

Notes * NACE (Rev. 1) sections. * latest available data for Schleswig-Holstein and Rheinland-Pfalz: 1999; Région Wallonne: 2001. ** Eurostat data missing for Rheinland-Pfalz and Schleswig-Holstein. The figures given are the number of enterprises with registered head office in the region (Source: AMADEUS).

Source: Eurostat, Bureau van Dijk.

Annex 2 Data availability

The following table lists the observations that were available to compute each of the firm-profile indicators. Typically, financial information is missing for at least a few transactions. In the case of employee numbers and deal values, information is available for less than a third of the total number of deals.

Table 12: Available observations per indicator and deal type

type	Region	Total	Deal value	Sales	Profit	Assets	Em- ployees
IPO	Centro (ES)	2	1	2	2	2	0
	Est (FR)	17	12	6	6	6	6
	Nord - Pas-de-Calais (FR)	15	10	6	7	7	7
	Noroeste (ES)	4	3	1	1	1	3
	Northern England (UK)	51	37	20	24	26	26
	Northern Ireland (UK)	3	2	3	3	3	2
	Rheinland-Pfalz (DE)	11	8	7	7	7	7
	Région Wallonne (BE)	3	3	3	3	3	2
	Schleswig-Holstein (DE)	7	5	5	5	5	1
	WALES (UK)	22	18	8	10	10	9
M&A	Centro (ES)	142	36	128	128	129	60
	Est (FR)	207	34	170	171	171	66
	Nord - Pas-de-Calais (FR)	142	24	106	108	110	48
	Noroeste (ES)	290	83	270	271	271	107
	Northern England (UK)	495	221	204	247	394	88
	Northern Ireland (UK)	141	58	43	57	100	24

Table 12: Available observations per indicator and deal type

type	Region	Total	Deal value	Sales	Profit	Assets	Em- ployees
	Rheinland-Pfalz (DE)	68	5	35	12	14	17
	Région Wallonne (BE)	58	4	40	54	54	28
	Schleswig-Holstein (DE)	73	18	38	18	18	17
	WALES (UK)	289	104	107	128	207	47
MBO	Centro (ES)	13	1	10	10	10	6
	Est (FR)	56	5	44	45	45	24
	Nord - Pas-de-Calais (FR)	28	4	23	24	24	6
	Noroeste (ES)	28	10	24	24	24	8
	Northern England (UK)	128	45	61	70	100	34
	Northern Ireland (UK)	17	4	6	9	15	3
	Rheinland-Pfalz (DE)	12	1	5	1	2	3
	Région Wallonne (BE)	6	1	3	4	4	4
	Schleswig-Holstein (DE)	8	1	5	2	2	2
	WALES (UK)	102	33	45	49	74	26
Private business transfers	Centro (ES)	155	37	138	138	139	66
	Est (FR)	262	41	208	210	210	93
	Nord - Pas-de-Calais (FR)	169	29	124	128	130	53
	Noroeste (ES)	311	88	288	289	289	111
	Northern England (UK)	640	279	265	319	498	123
	Northern Ireland (UK)	159	62	50	67	116	27
	Rheinland-Pfalz (DE)	81	6	40	13	16	20
	Région Wallonne (BE)	65	8	44	59	59	33

Table 12: Available observations per indicator and deal type

type	Region	Total	Deal value	Sales	Profit	Assets	Em- ployees
	Schleswig-Holstein (DE)	84	21	44	21	21	19
	WALES (UK)	401	144	156	183	287	77

Source: Bureau van Dijk.

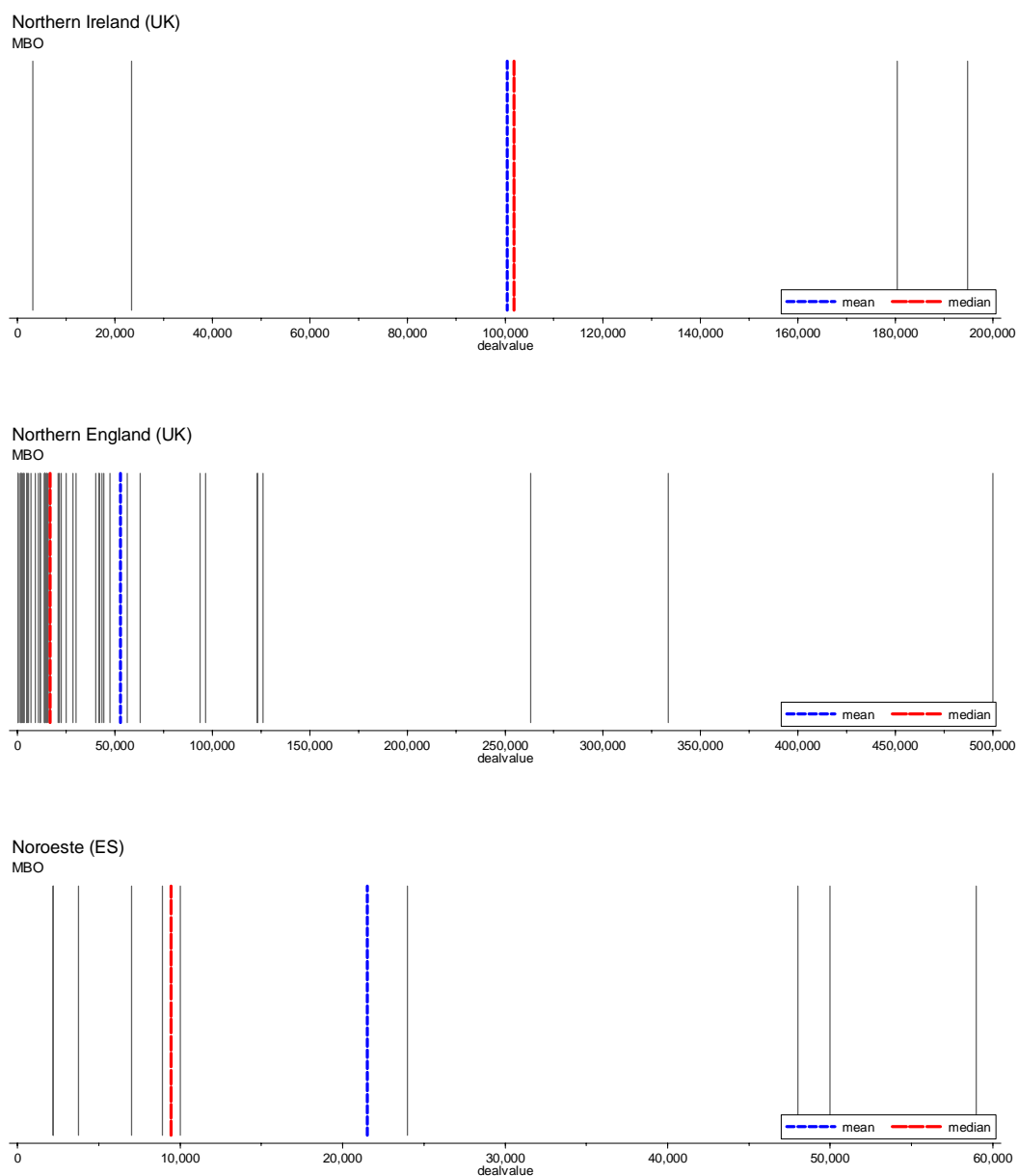
Annex 3 Distribution of firm-level indicators

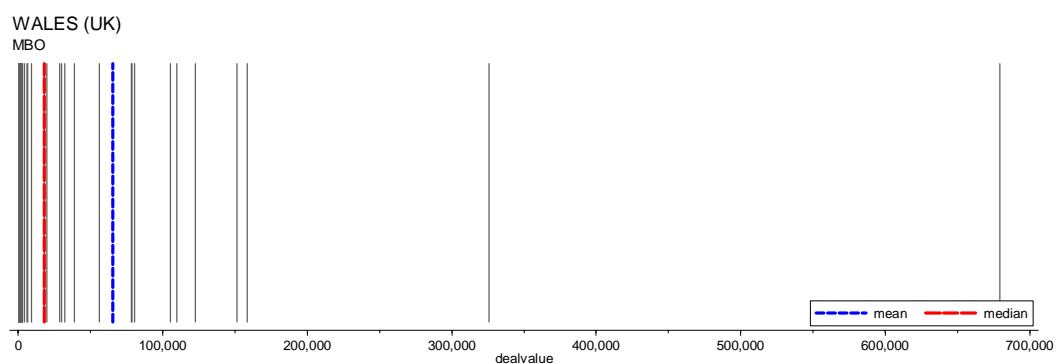
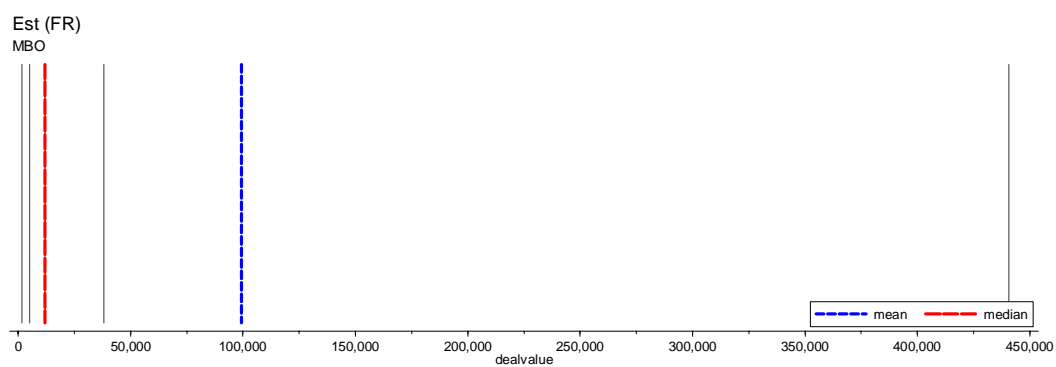
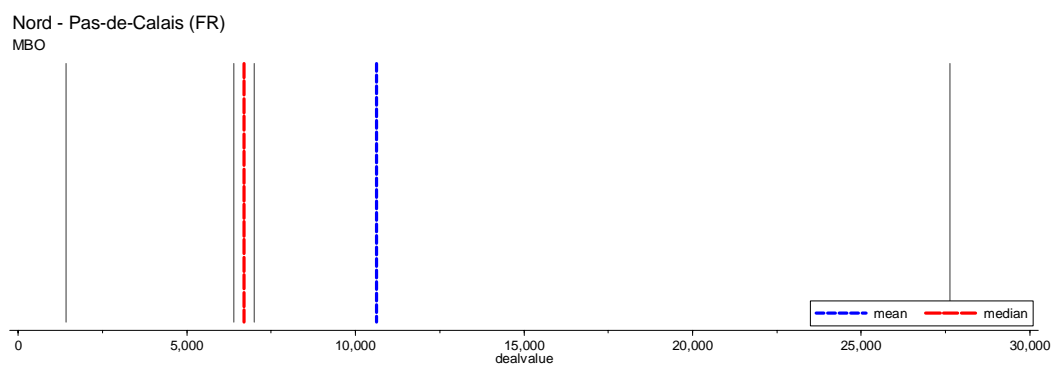
This Annex contains graphs showing the distribution of the variables that were represented by their means in the body of the report. In many cases, the data is characterised by the presence of outliers, which makes it difficult to capture the distribution in a summary statistic, such as the mean or the median. The following graphs illustrate the problem. By showing the distributions explicitly (every single transaction is represented by a vertical ‘spike’⁵¹) the graphs also provide precise information on what type of companies is affected by ownership changes.

⁵¹ Where observations are duplicate, i.e. when several firms report the same turnover etc., the spikes are stacked.

A1.2 MBOs

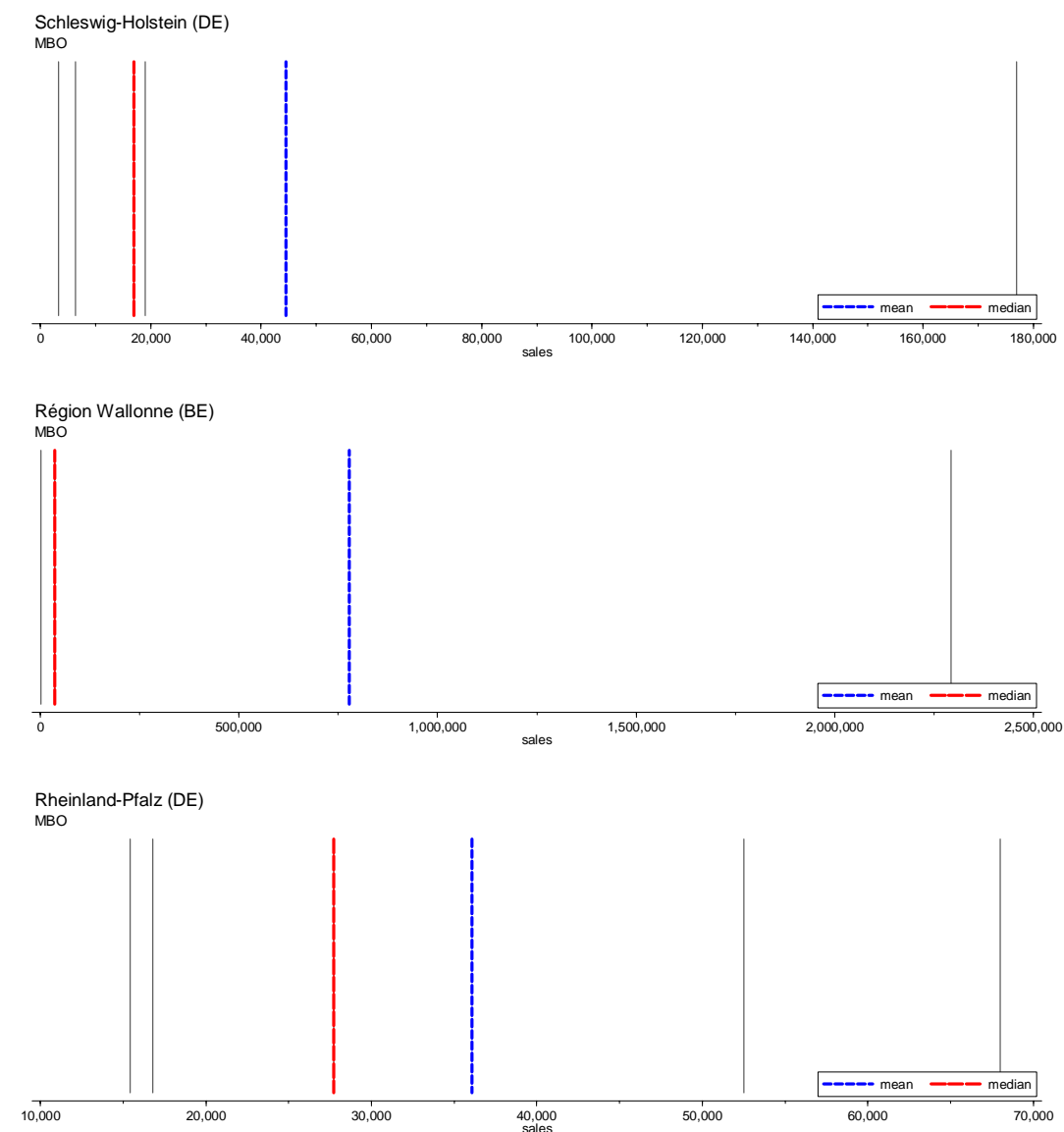
Figure 64: Distribution of MBO deal values (1997-2008)

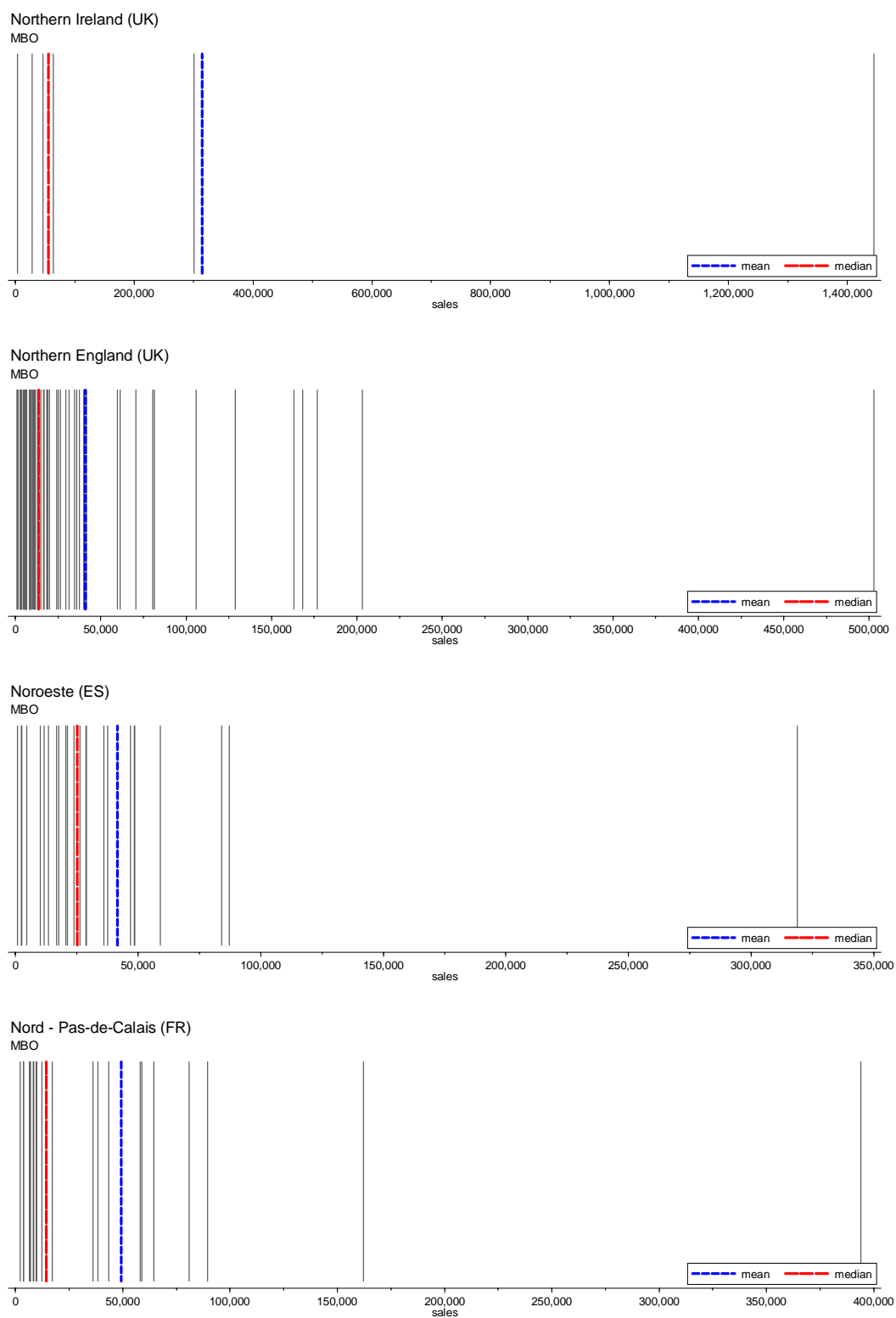


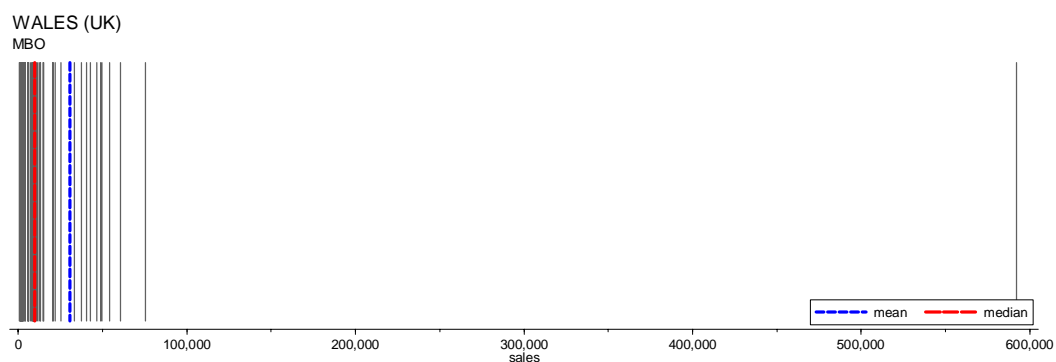
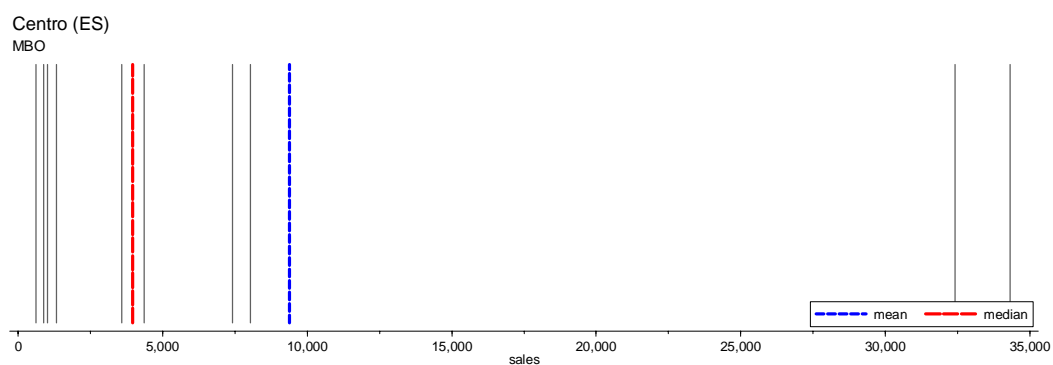
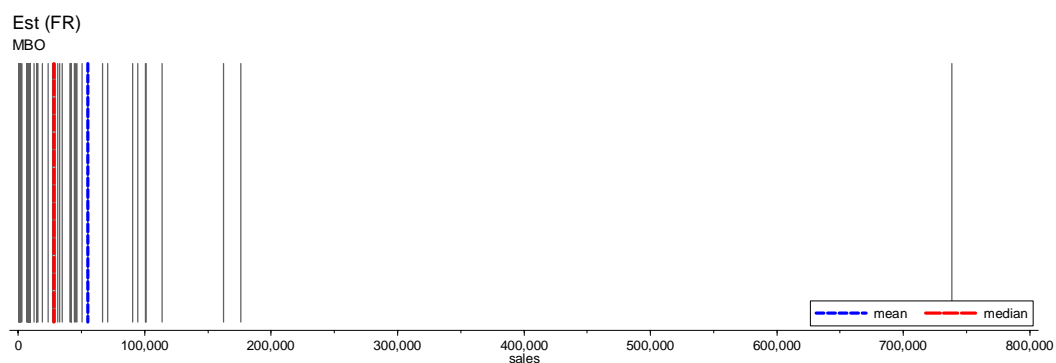


Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

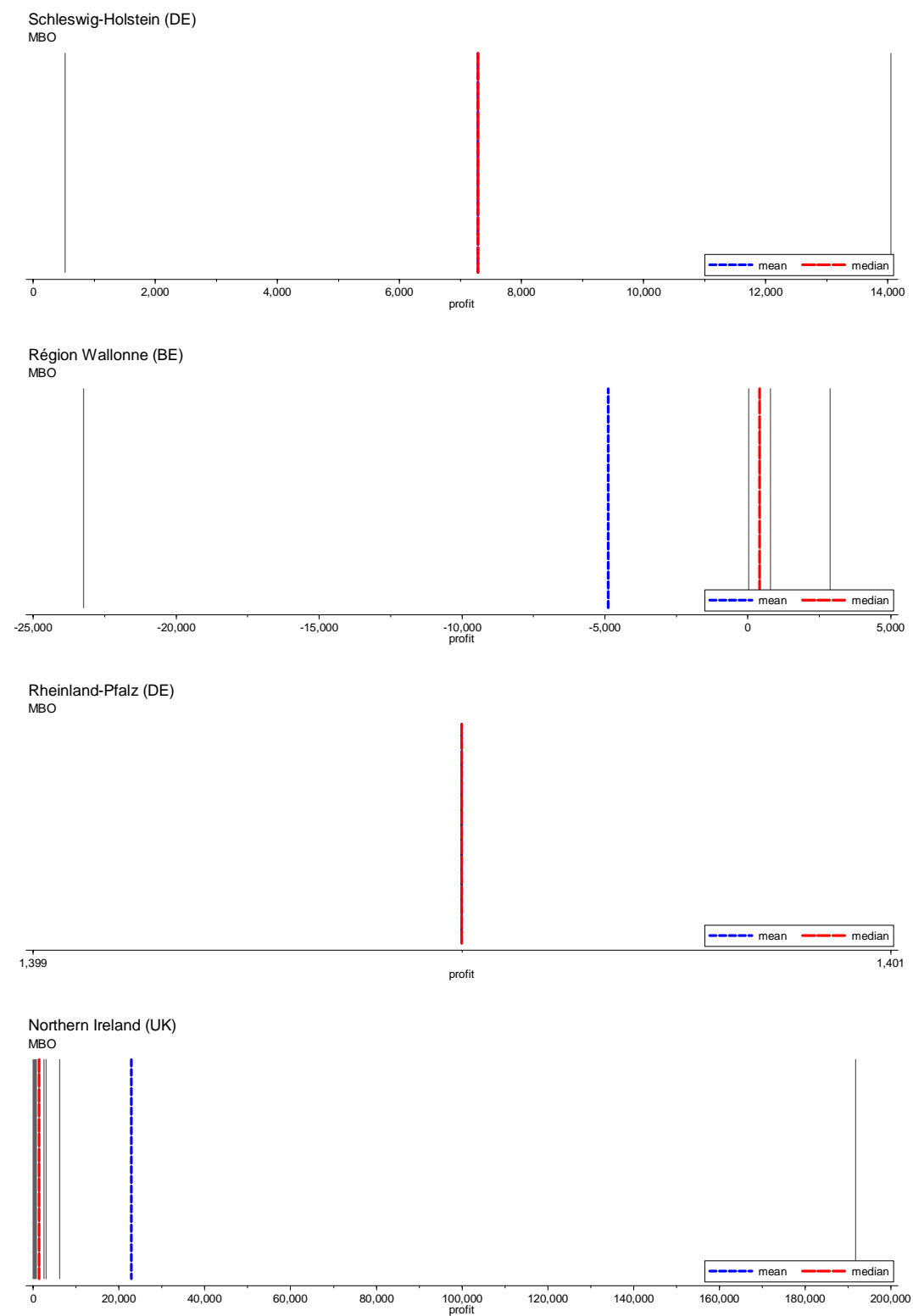
Figure 65: Distribution of annual sales, MBO targets (1997-2008)



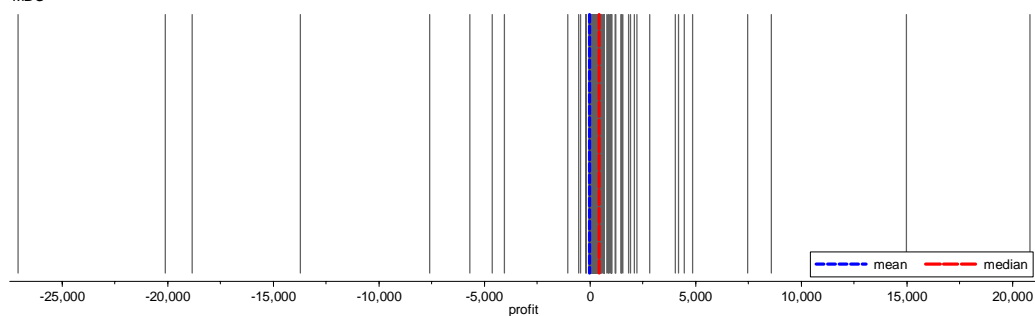


Note: in € 000s. Regions with one or no recorded values omitted.

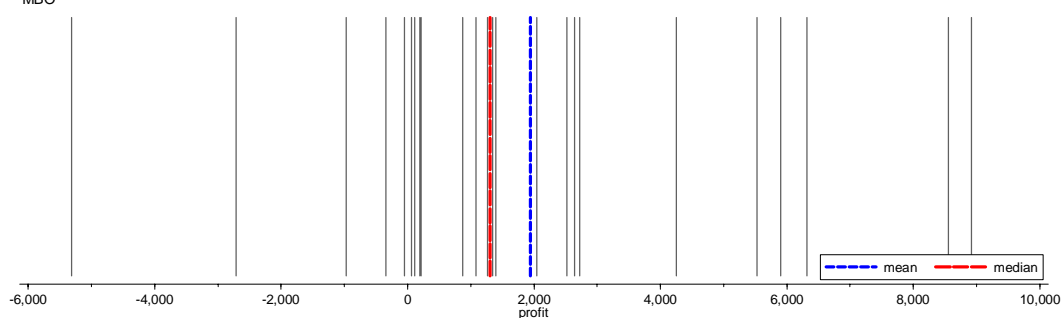
Source: Bureau van Dijk (ZEPHYR).

Figure 66: Distribution of annual profits, MBO targets (1997-2008)

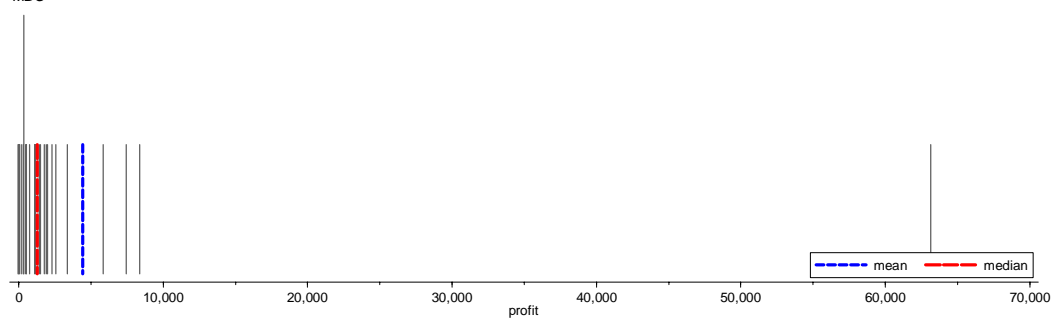
Northern England (UK)
MBO



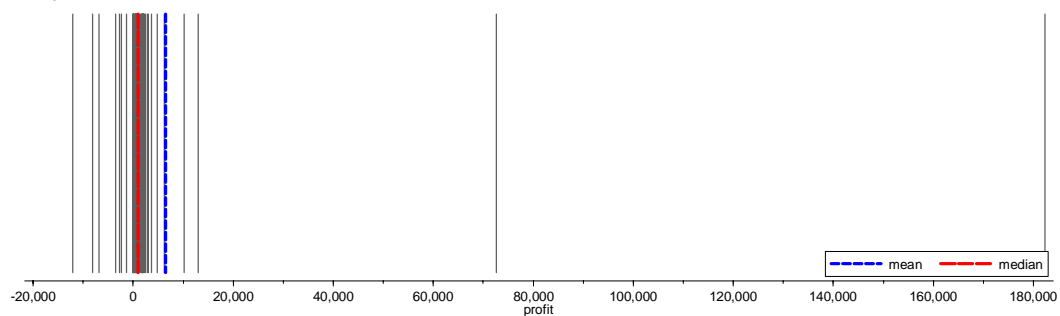
Noroeste (ES)
MBO

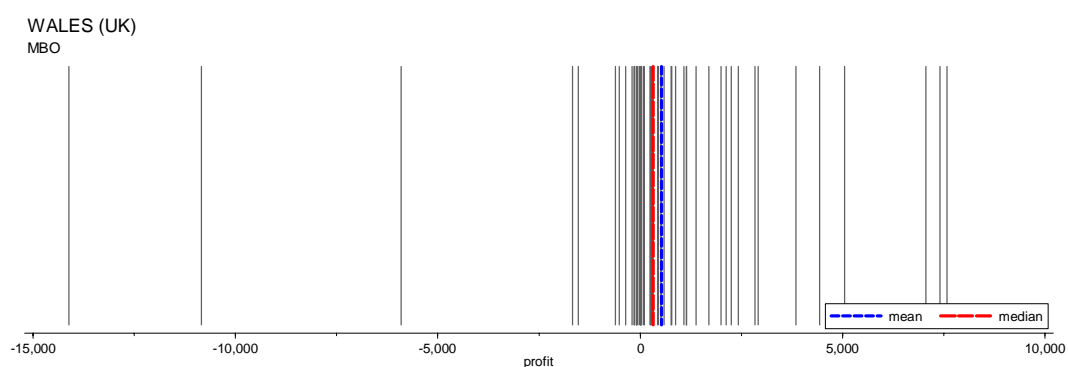
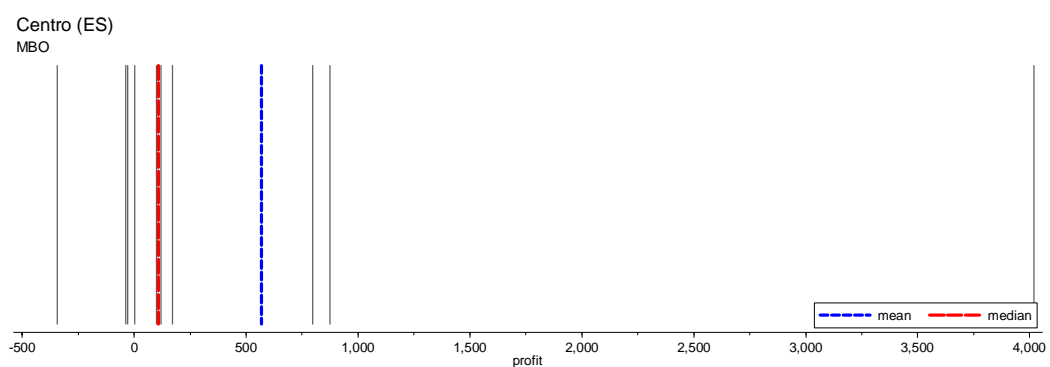


Nord - Pas-de-Calais (FR)
MBO



Est (FR)
MBO

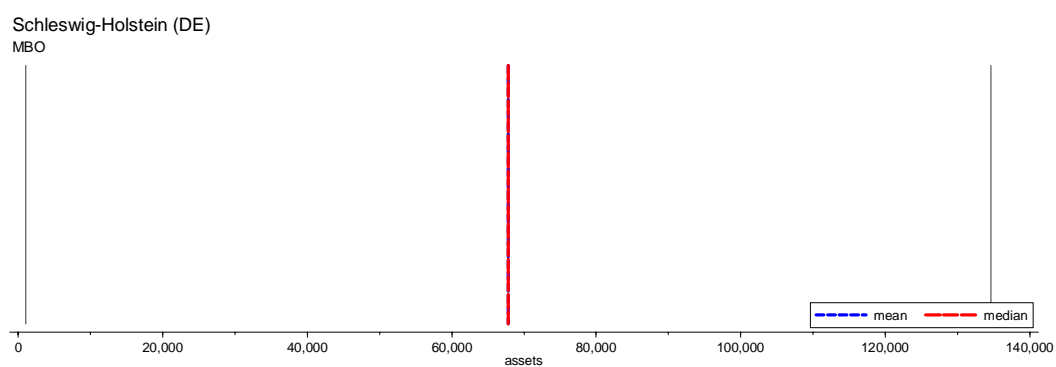




Note: in € 000s. Regions with one or no recorded values omitted.

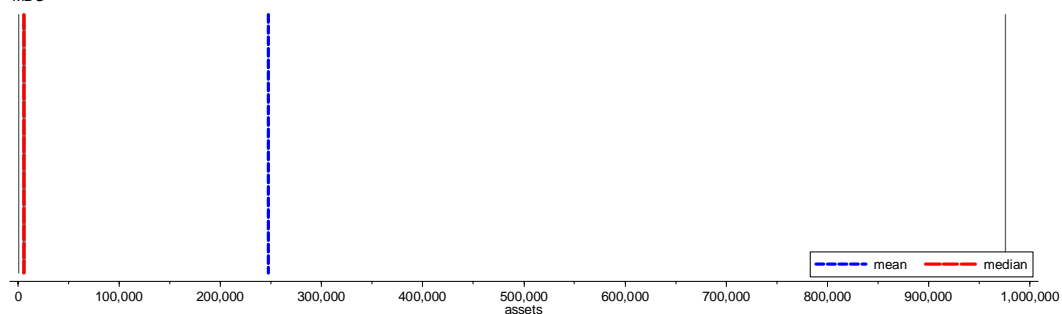
Source: Bureau van Dijk (ZEPHYR).

Figure 67: Distribution of assets, MBO targets (1997-2008)



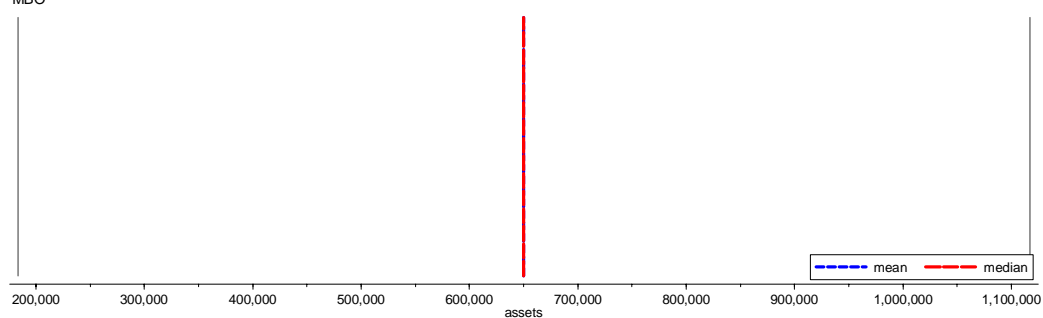
Région Wallonne (BE)

MBO



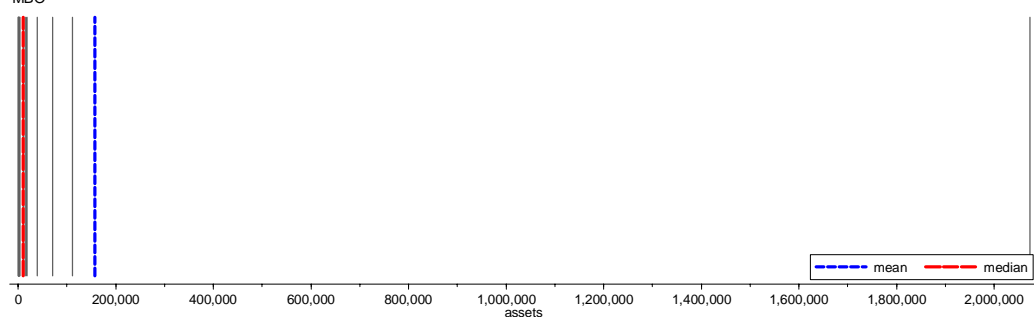
Rheinland-Pfalz (DE)

MBO



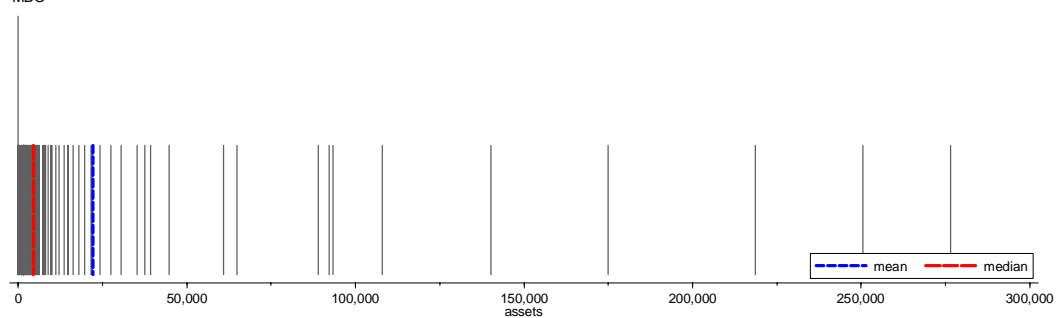
Northern Ireland (UK)

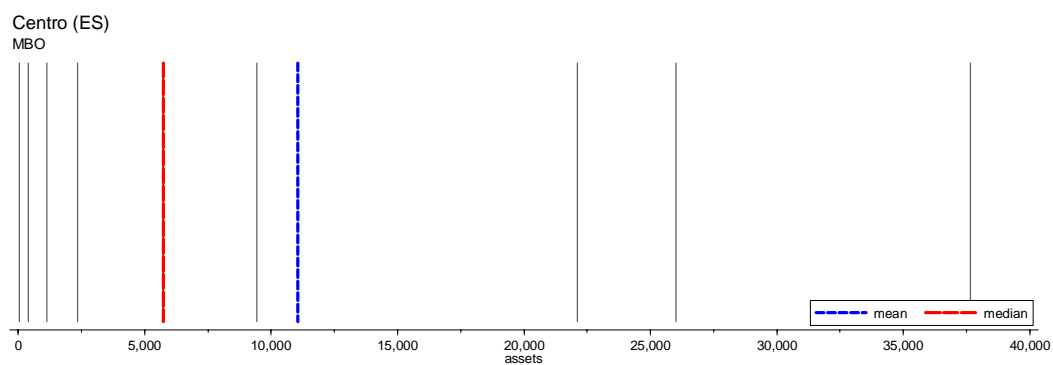
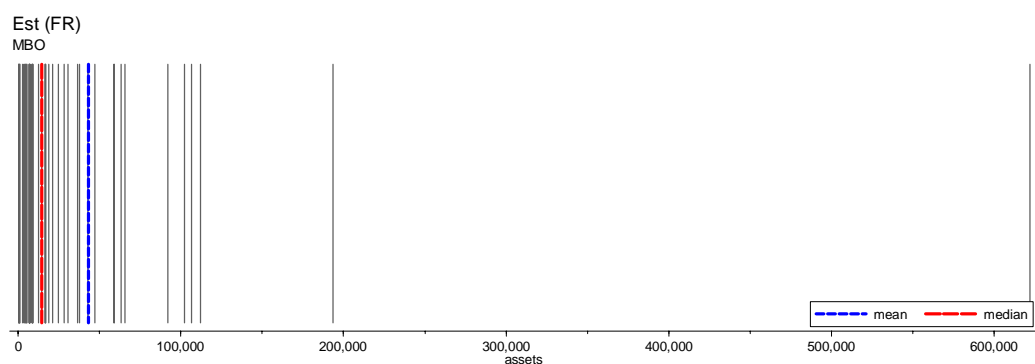
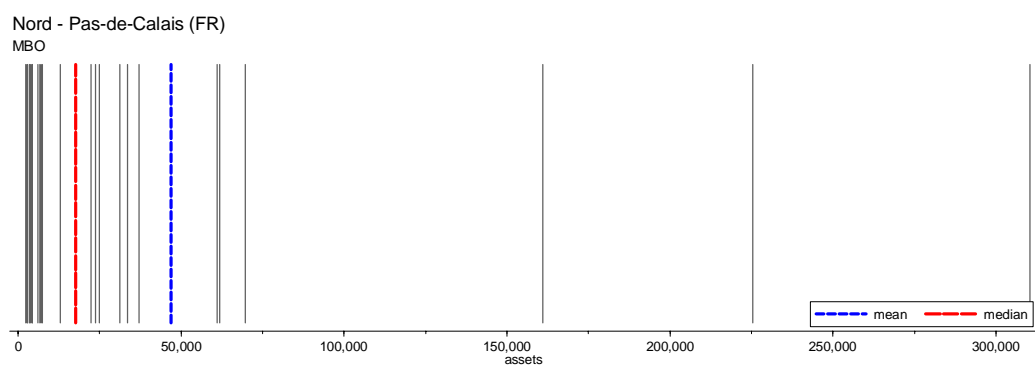
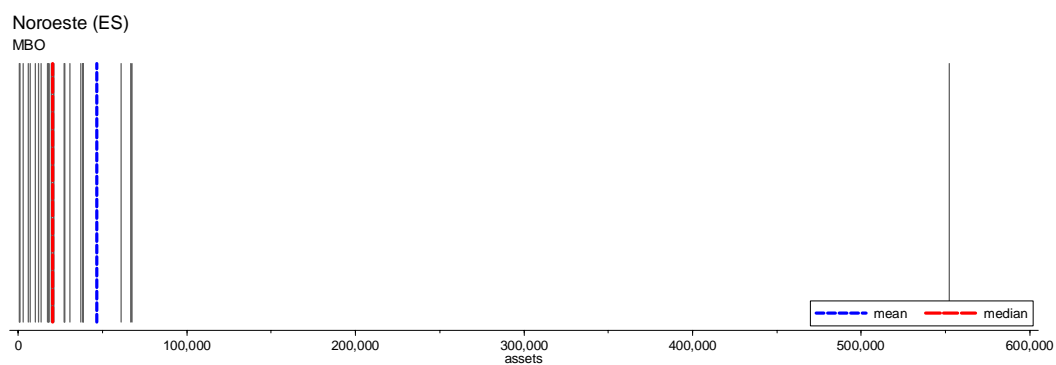
MBO

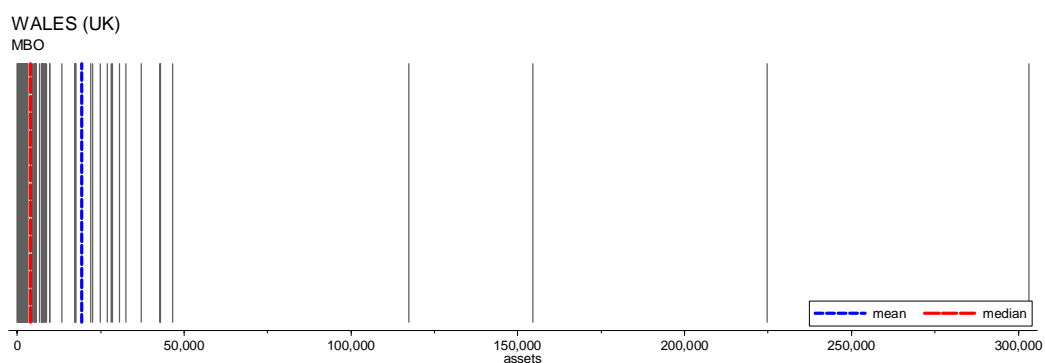


Northern England (UK)

MBO



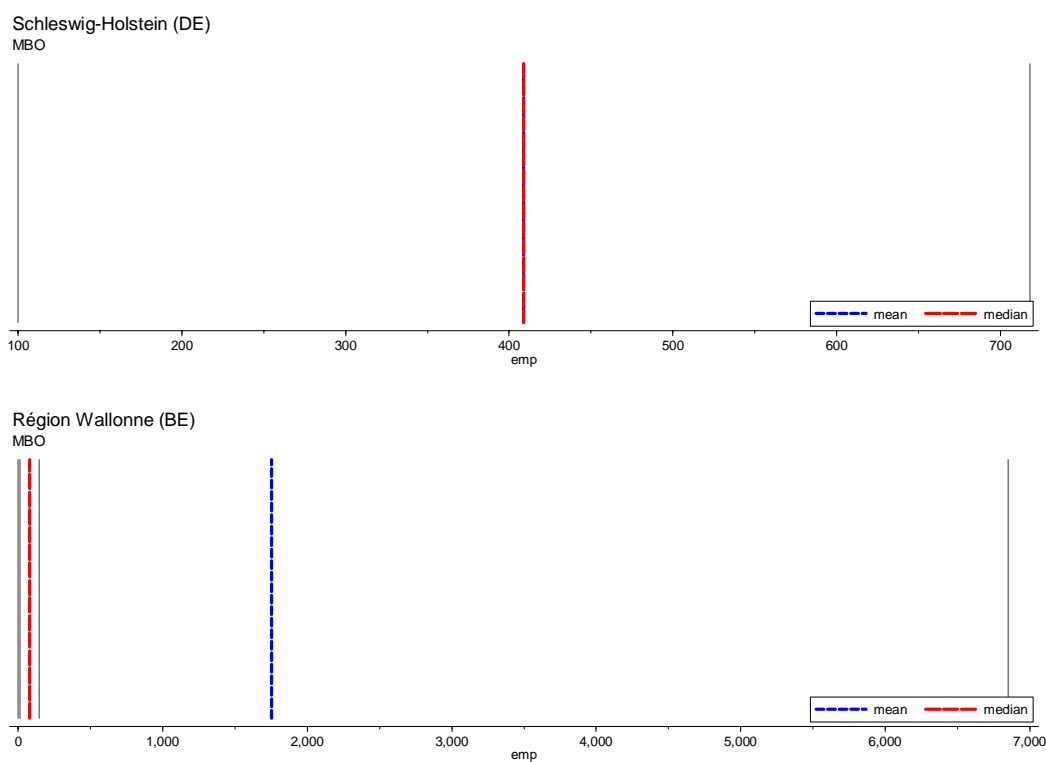


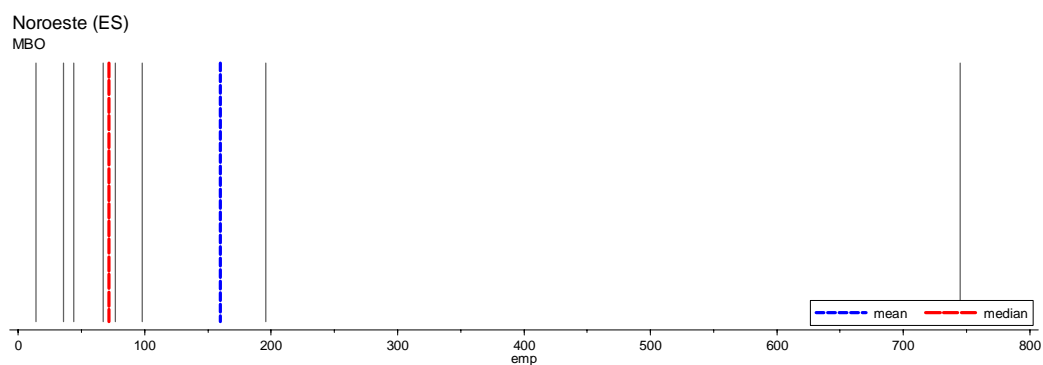
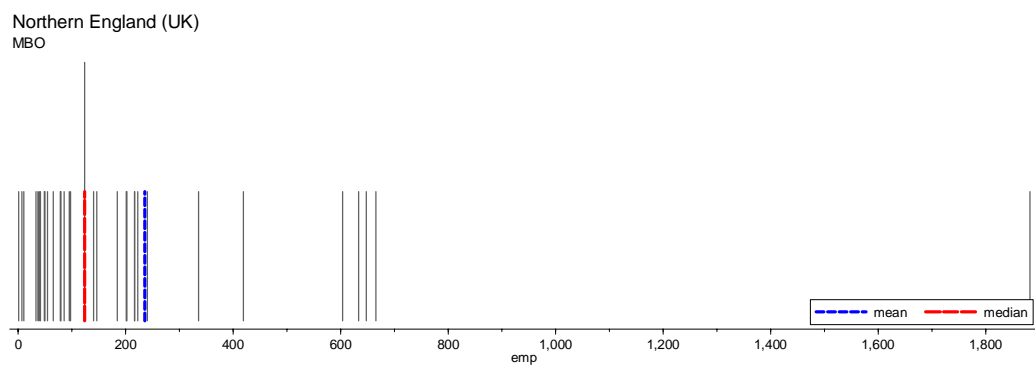
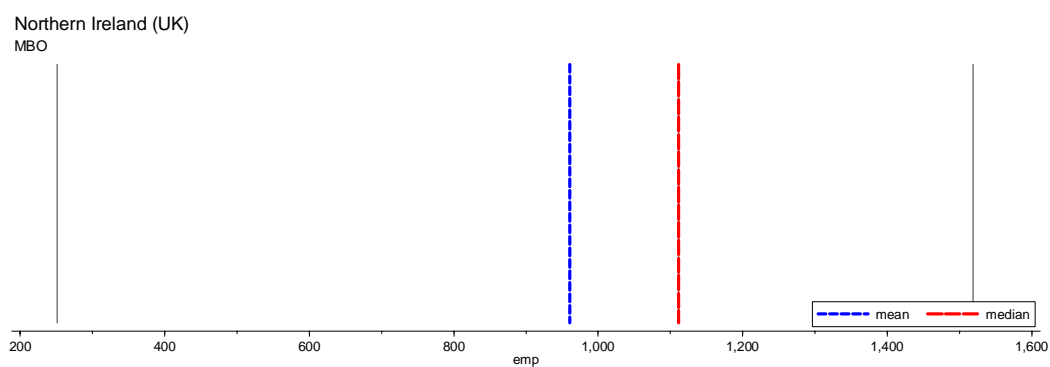
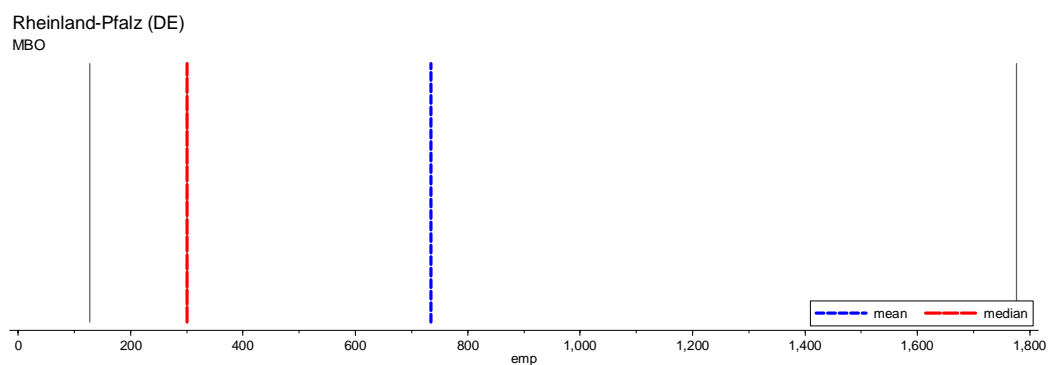


Note: in € 000s.

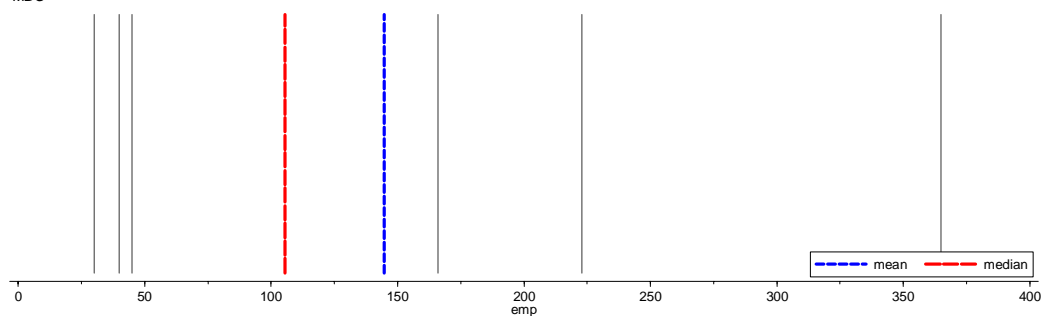
Source: Bureau van Dijk (ZEPHYR).

Figure 68: Distribution of employee numbers, MBO targets (1997-2008)

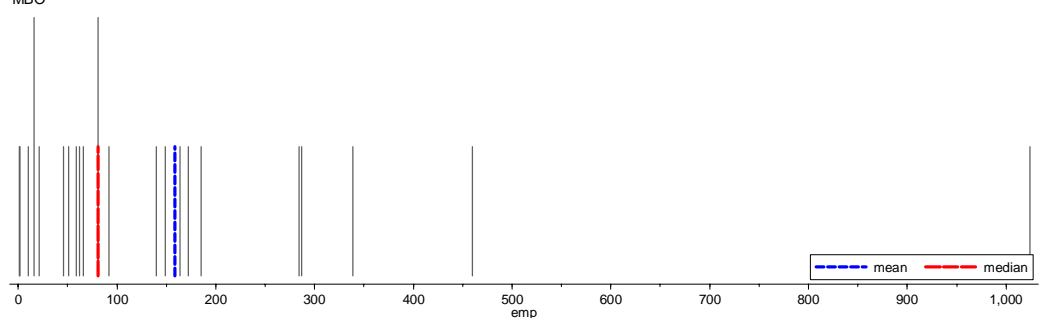




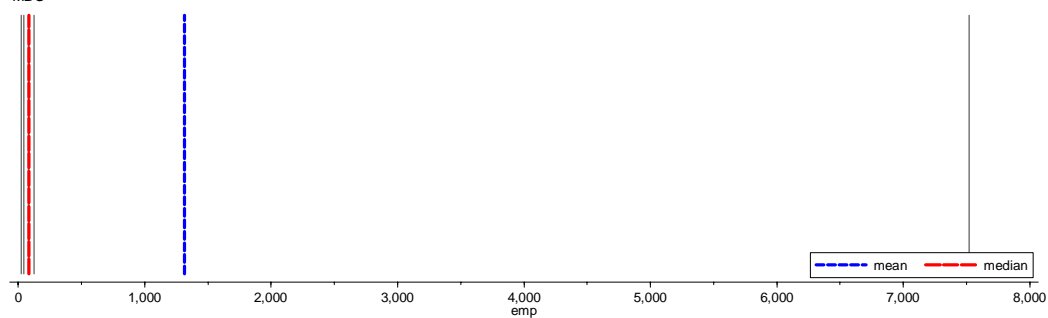
Nord - Pas-de-Calais (FR)
MBO



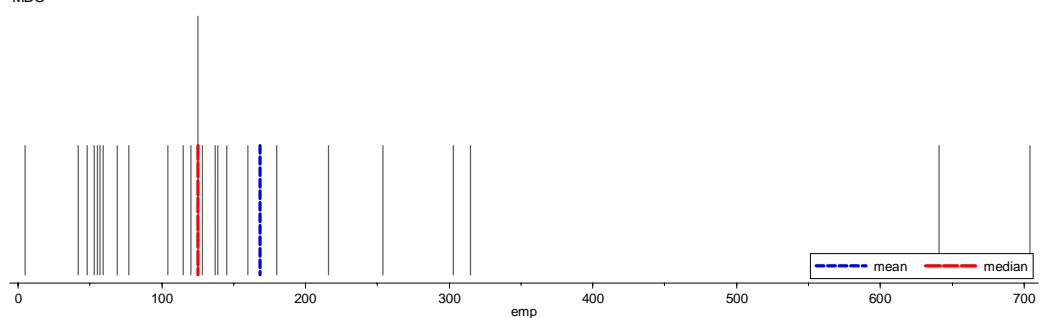
Est (FR)
MBO



Centro (ES)
MBO



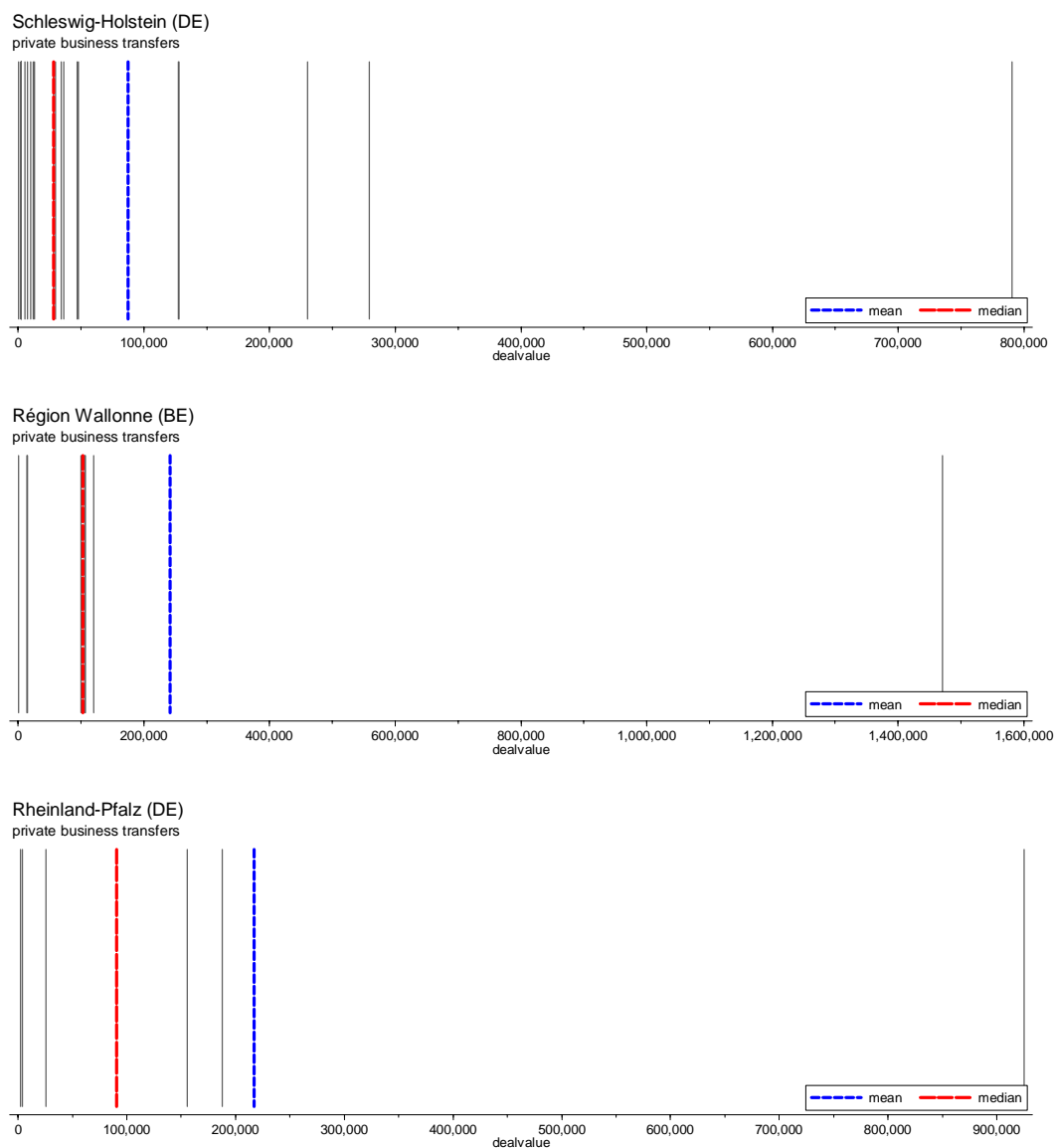
WALES (UK)
MBO



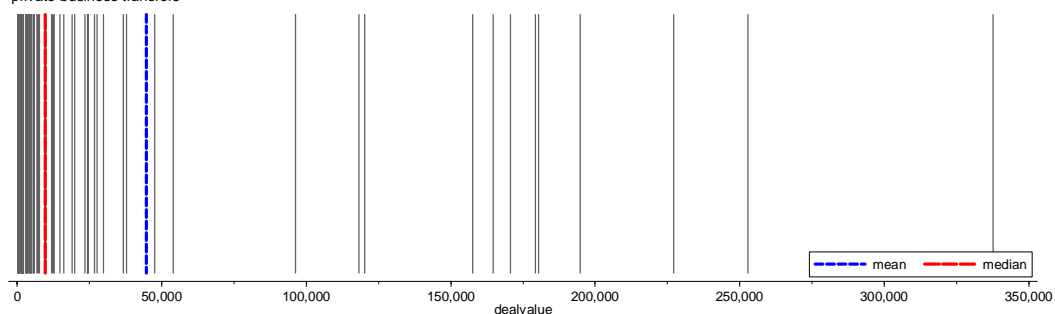
Source: Bureau van Dijk (ZEPHYR).

A1.3 Private business transfers

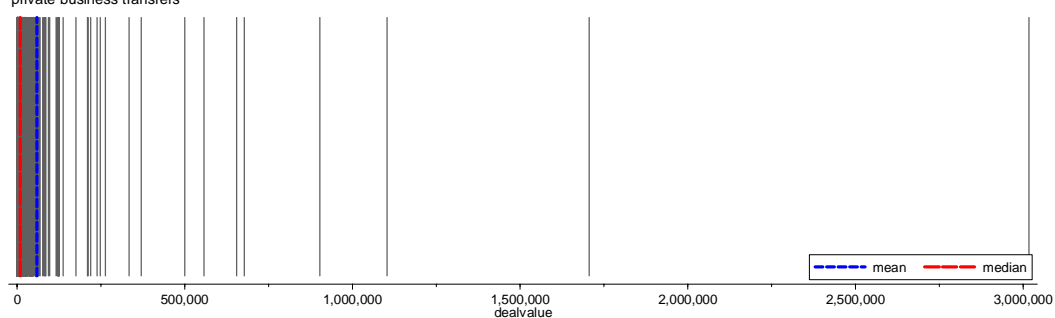
Figure 69: Distribution of deal values of private business transfers (1997-2008)



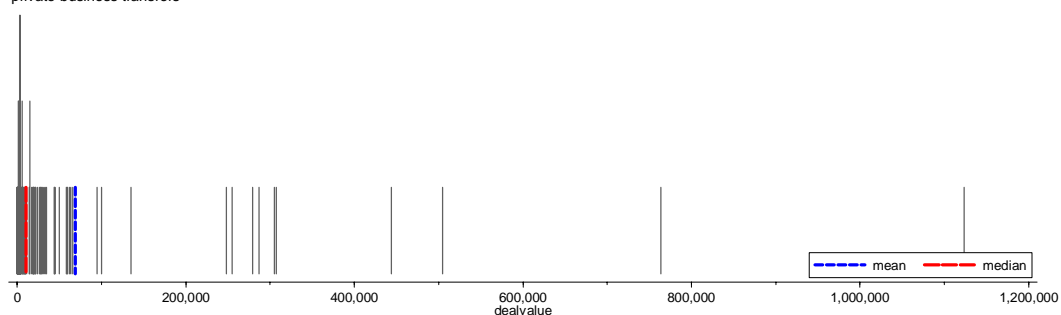
Northern Ireland (UK)
private business transfers



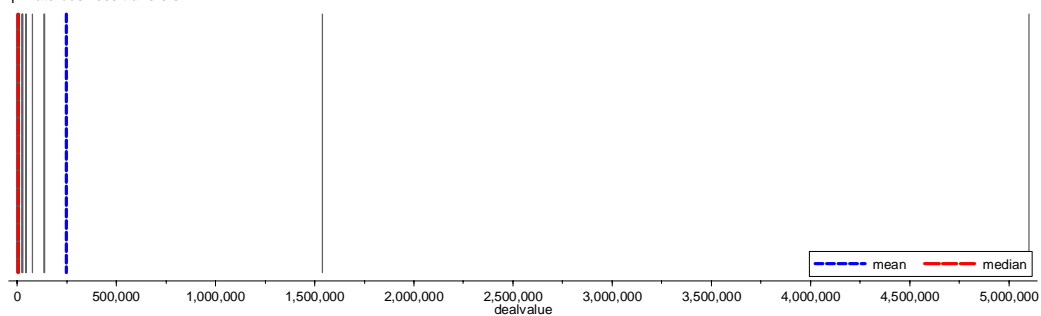
Northern England (UK)
private business transfers

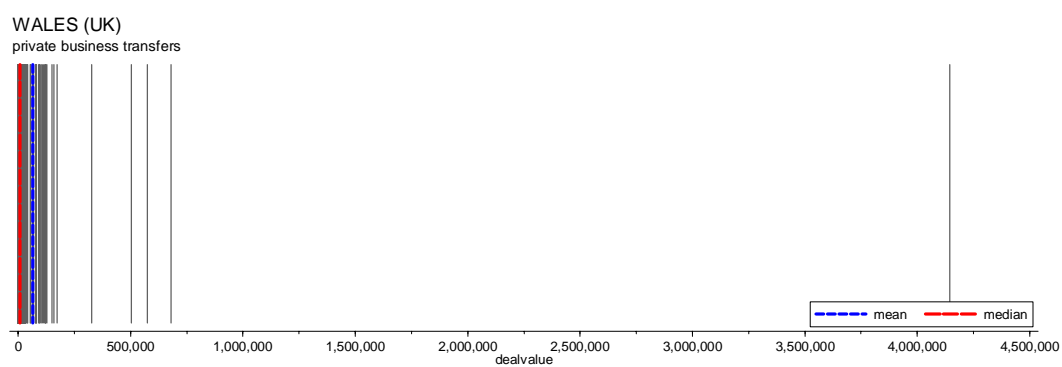
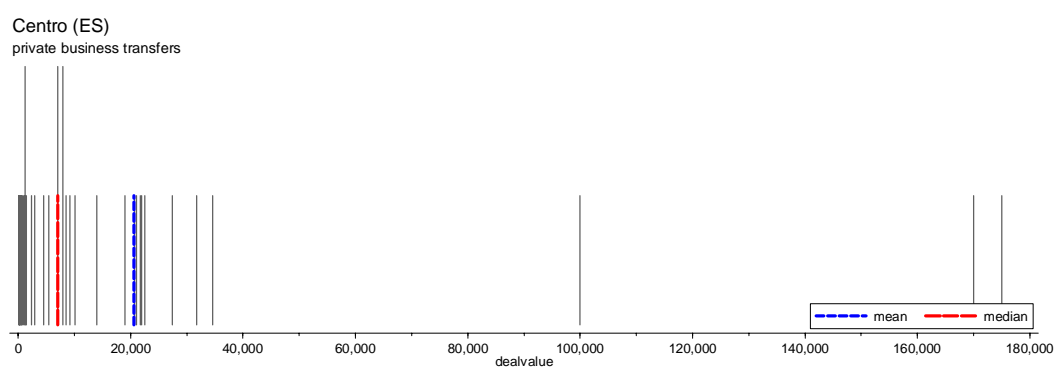
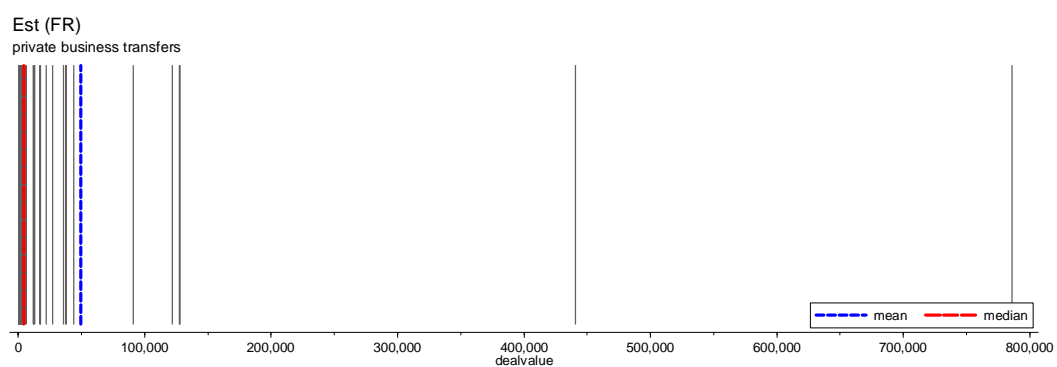


Noroeste (ES)
private business transfers



Nord - Pas-de-Calais (FR)
private business transfers



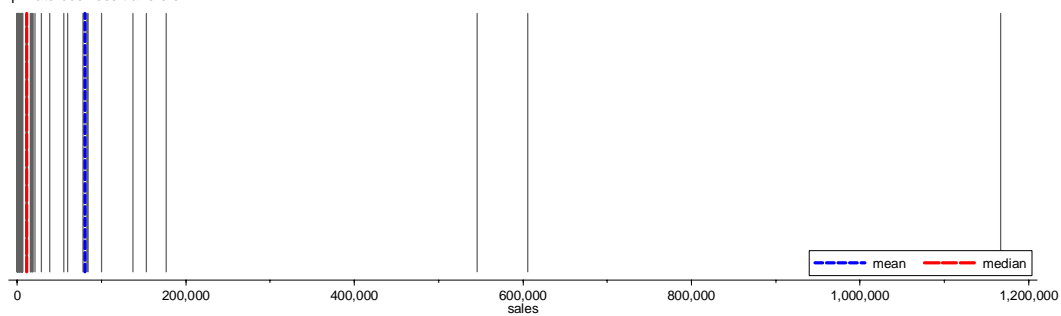


Note: in € 000s. Regions with one or no recorded values omitted.

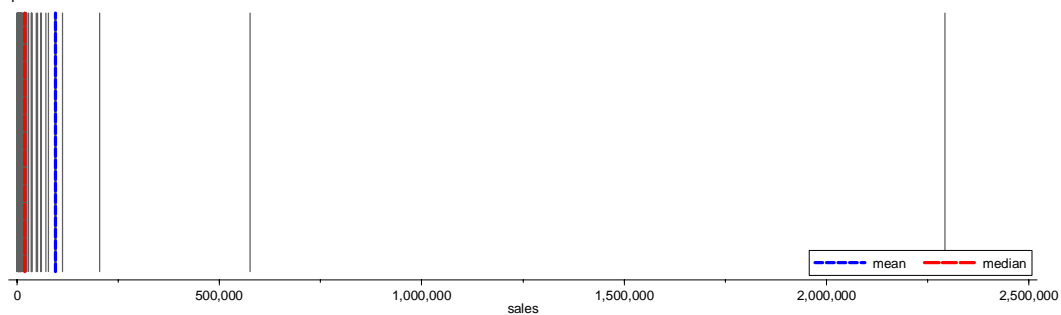
Source: Bureau van Dijk (ZEPHYR).

Figure 70: Distribution of annual sales, targets of private business transfers (1997-2008)

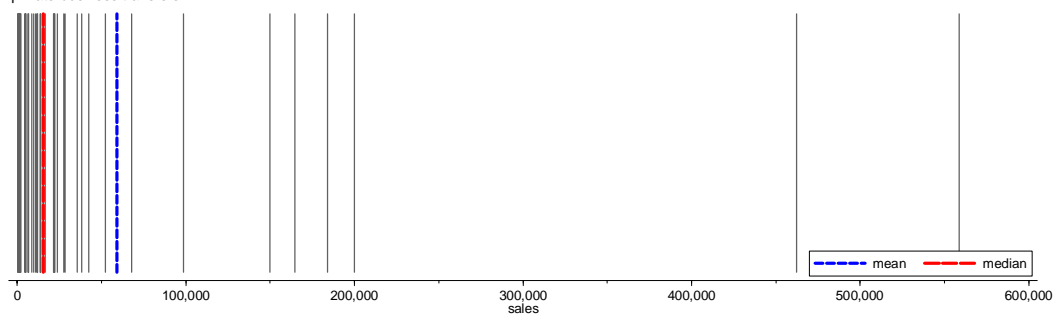
Schleswig-Holstein (DE)
private business transfers



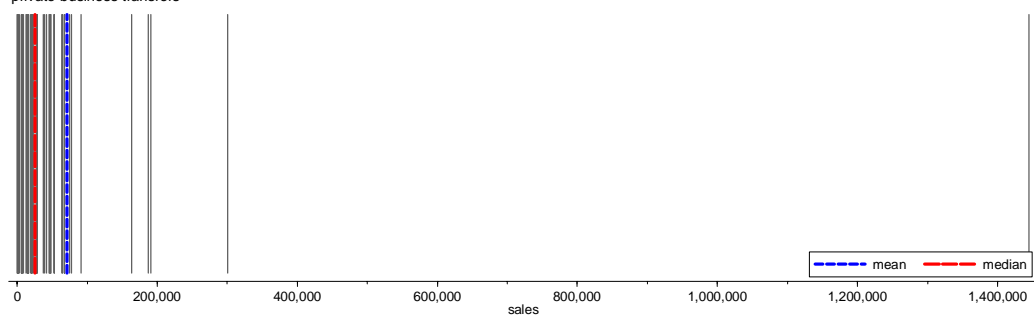
Région Wallonne (BE)
private business transfers



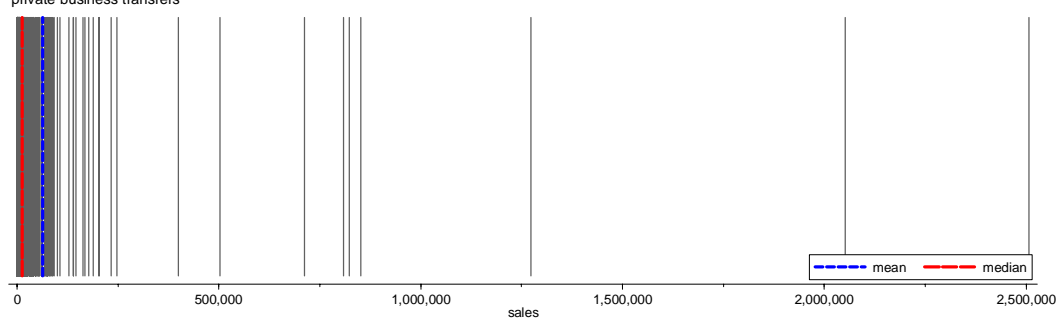
Rheinland-Pfalz (DE)
private business transfers



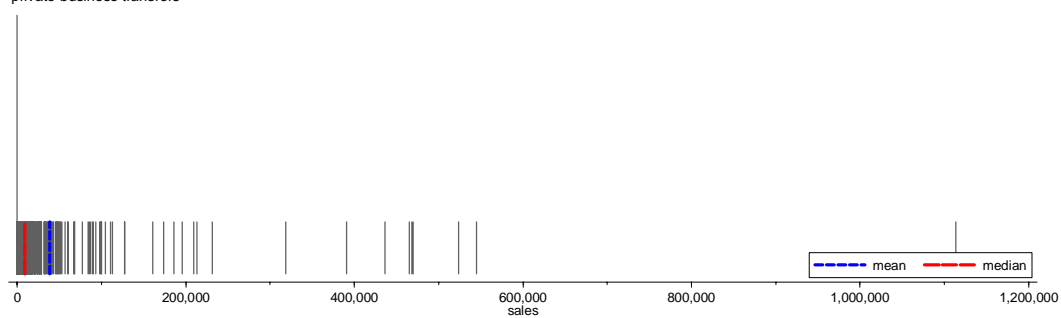
Northern Ireland (UK)
private business transfers



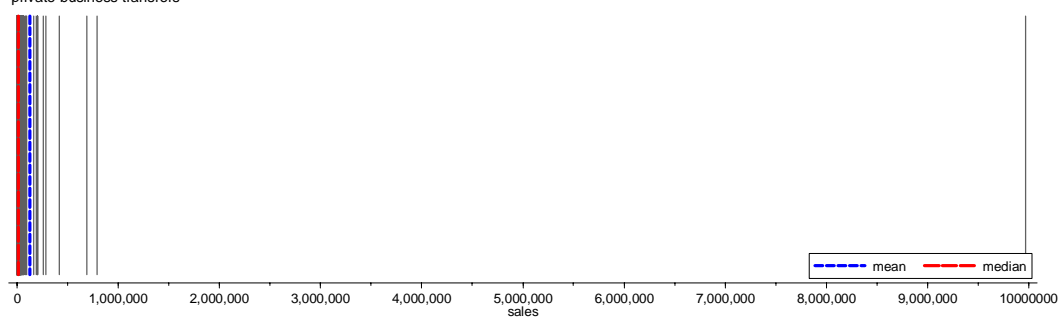
Northern England (UK)
private business transfers

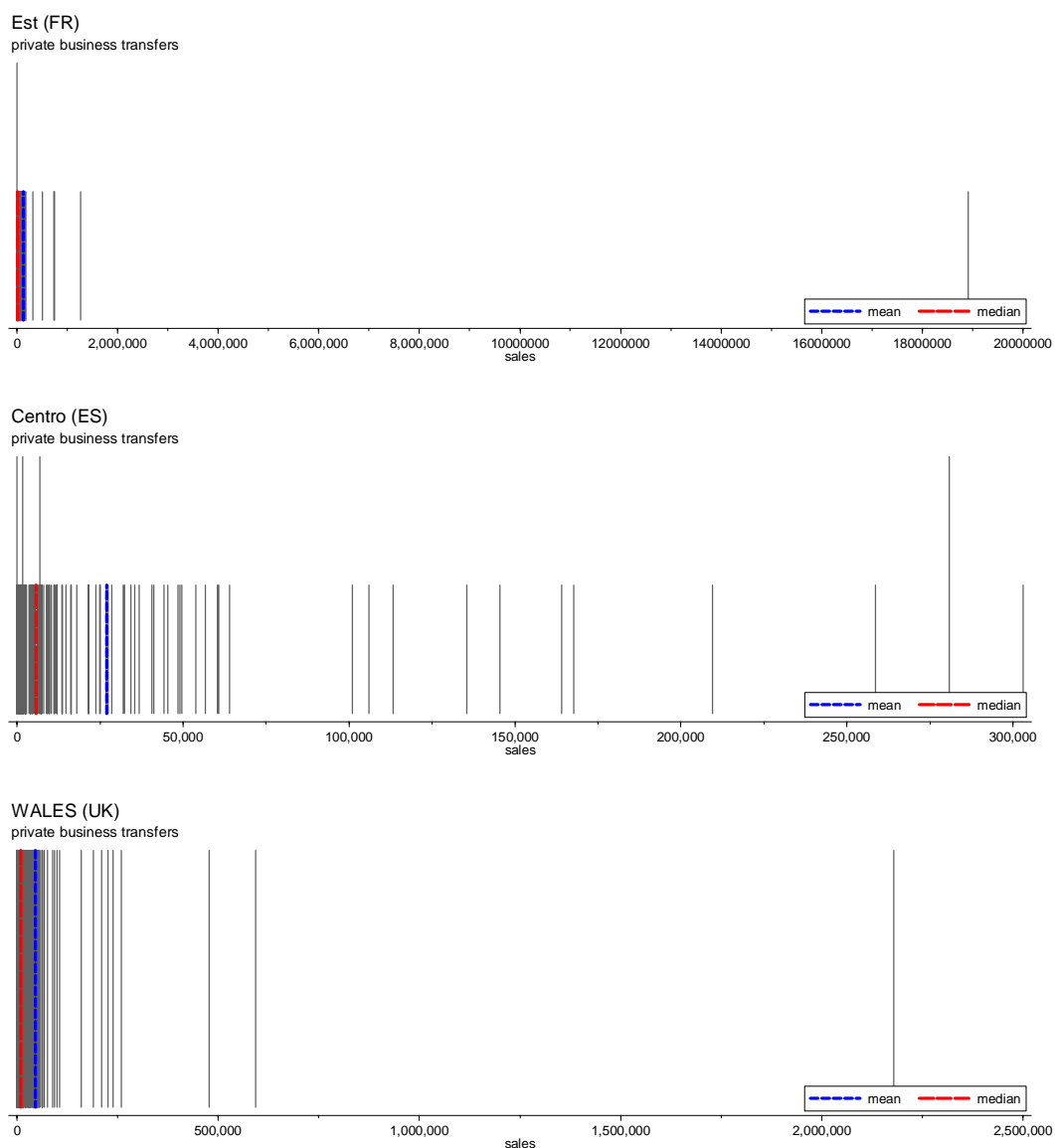


Noroeste (ES)
private business transfers



Nord - Pas-de-Calais (FR)
private business transfers

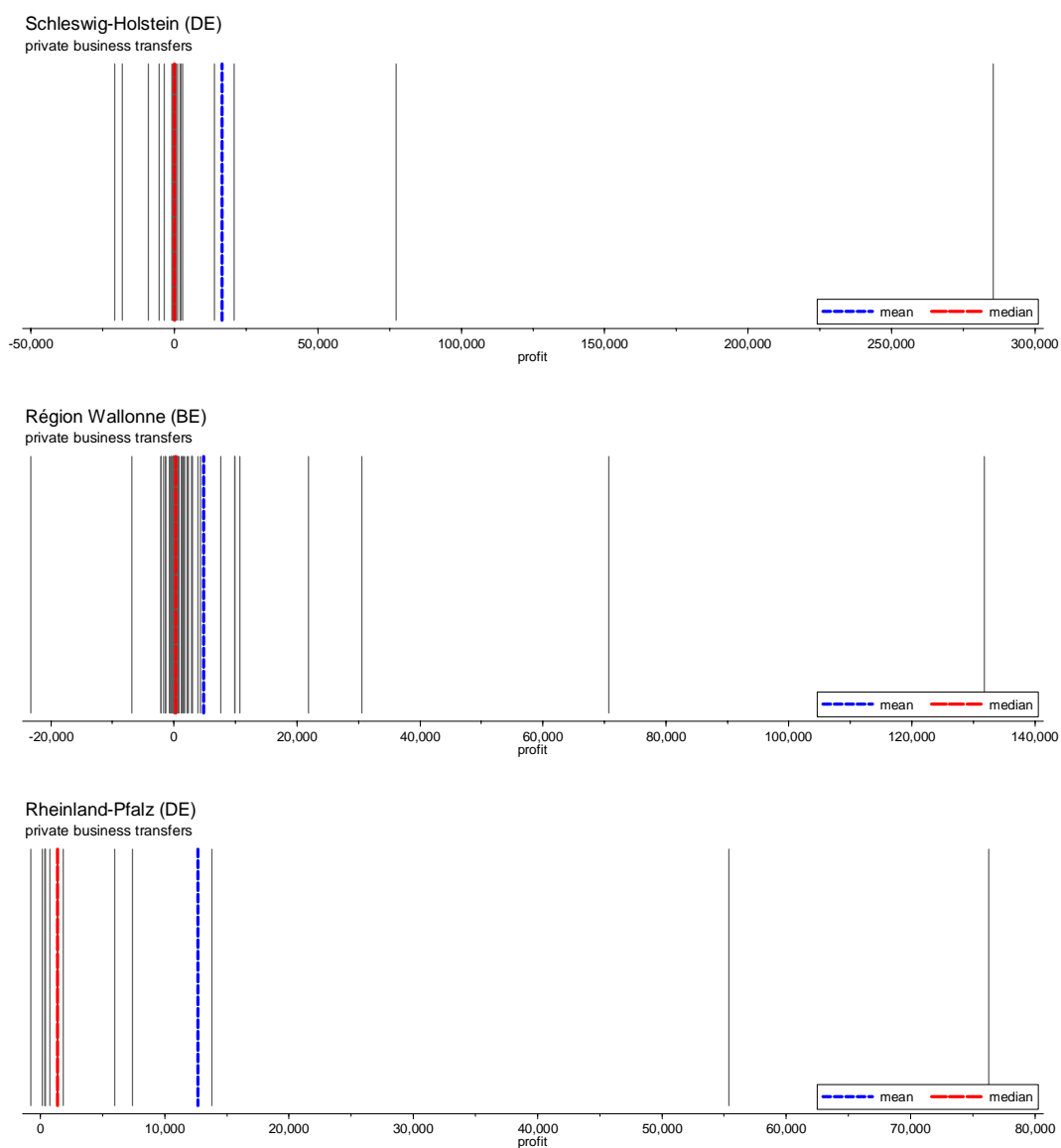


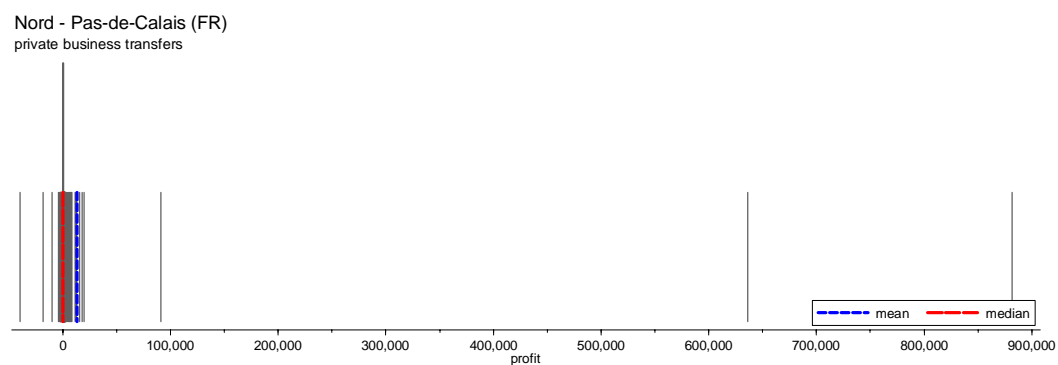
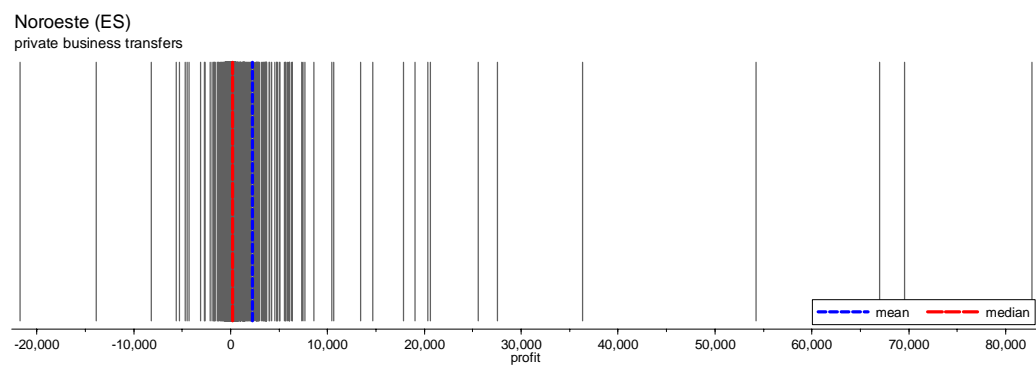
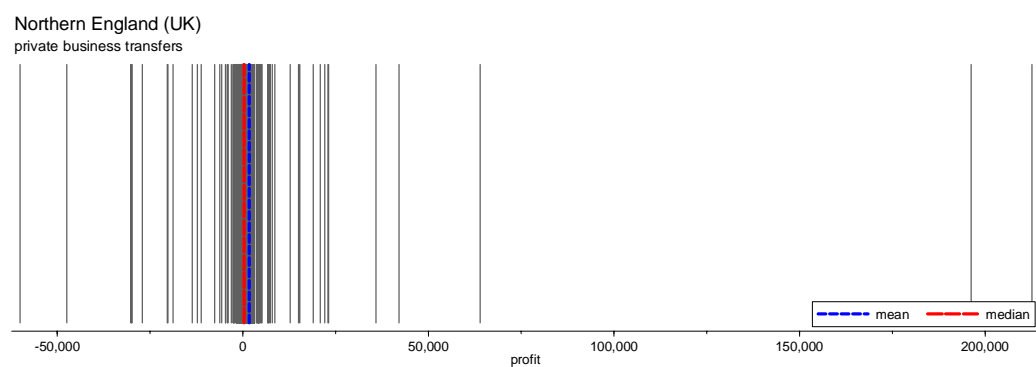
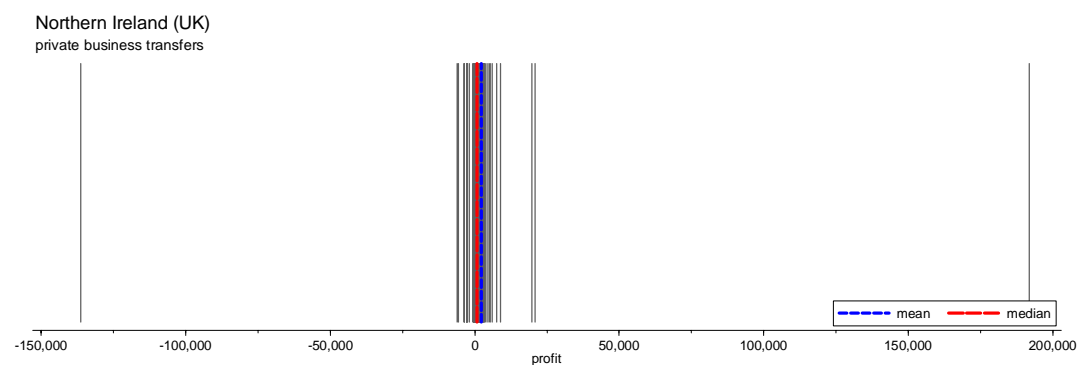


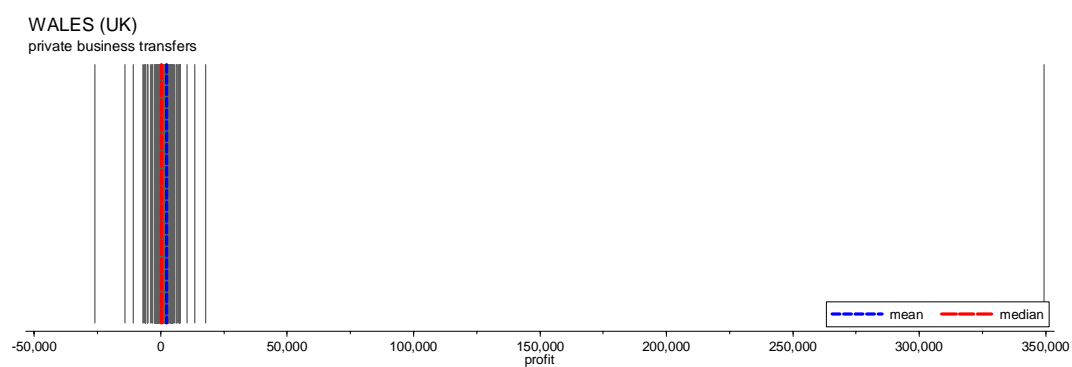
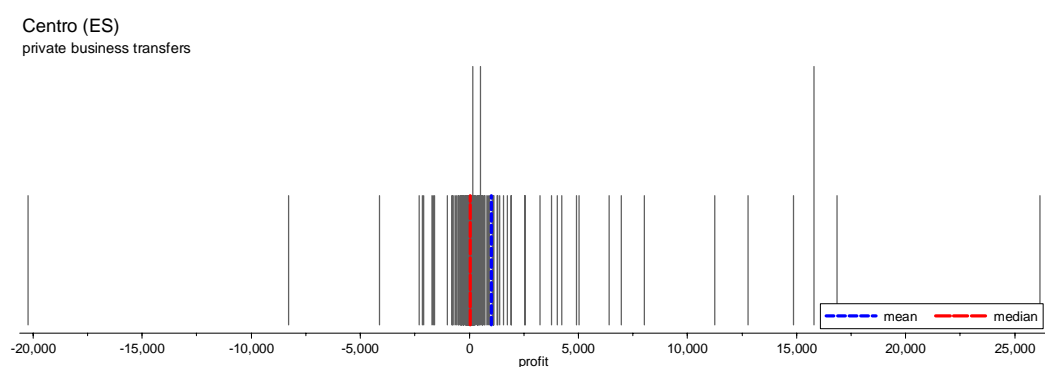
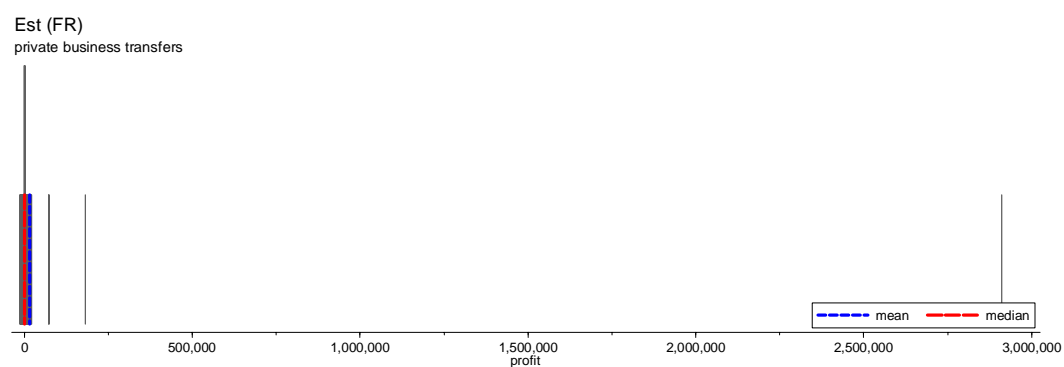
Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

Figure 71: Distribution of annual profits, targets of private business transfers (1997-2008)



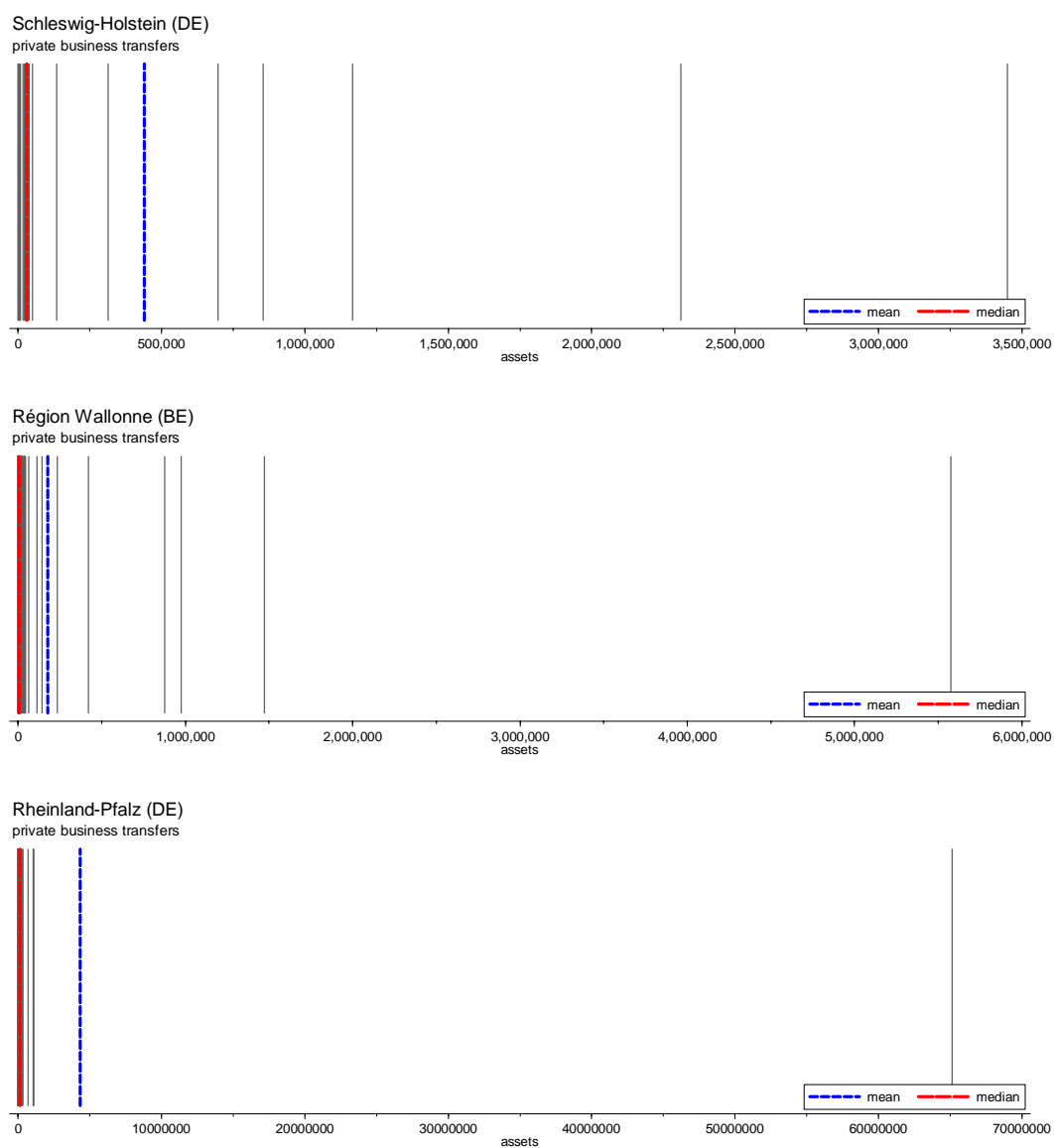




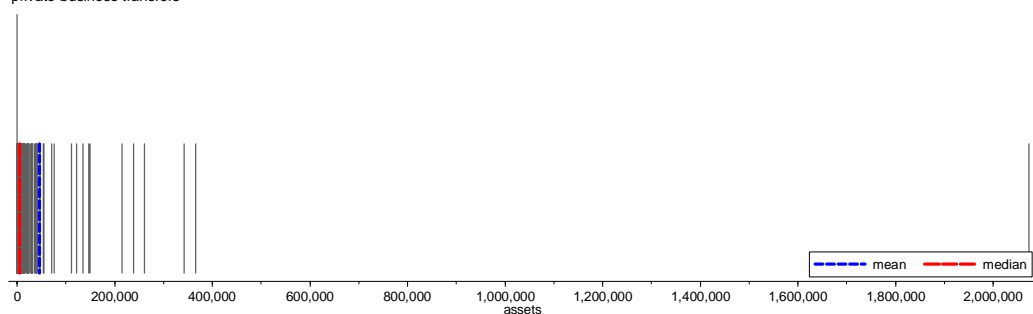
Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

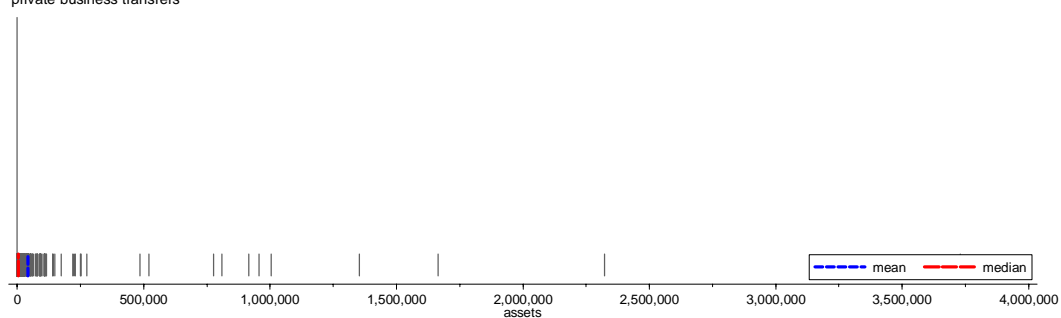
Figure 72: Distribution of assets, targets of private business transfers (1997-2008)



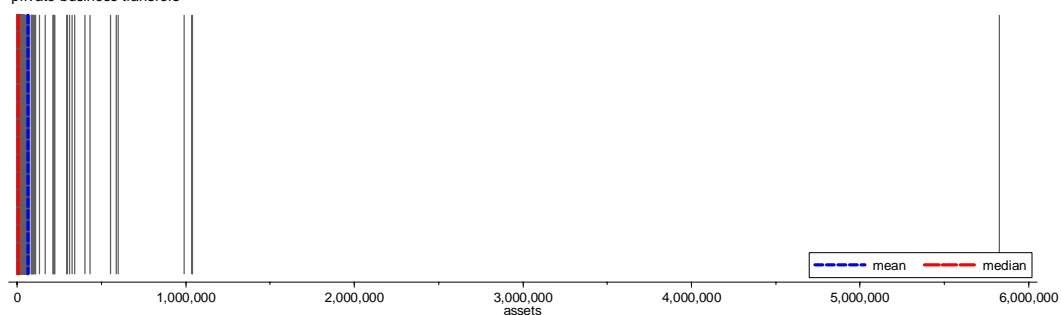
Northern Ireland (UK)
private business transfers



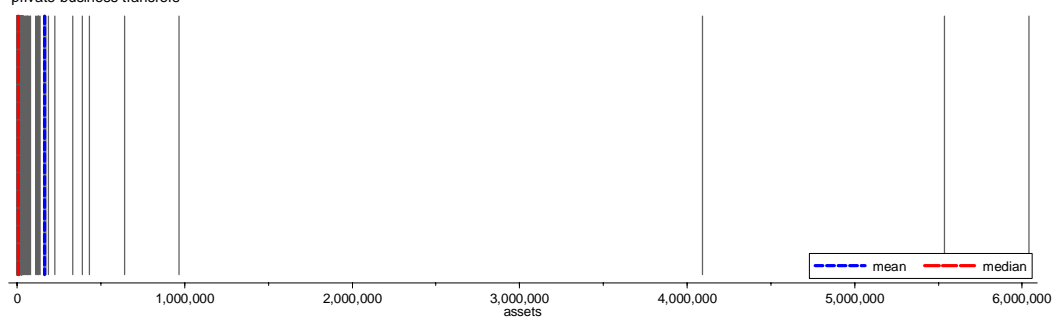
Northern England (UK)
private business transfers

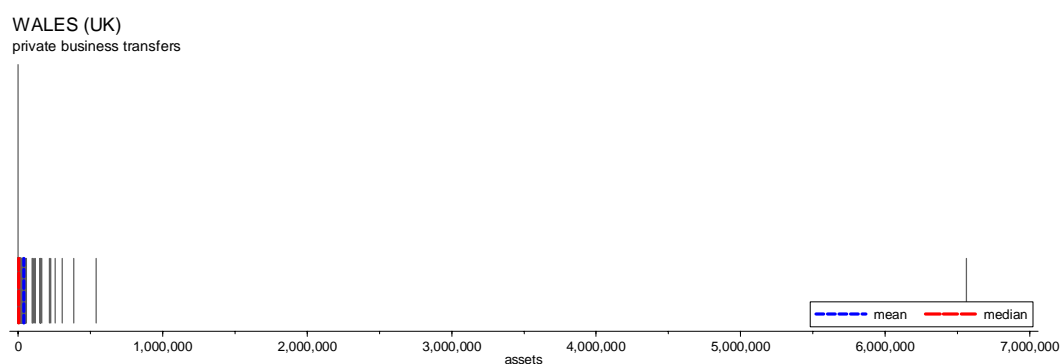
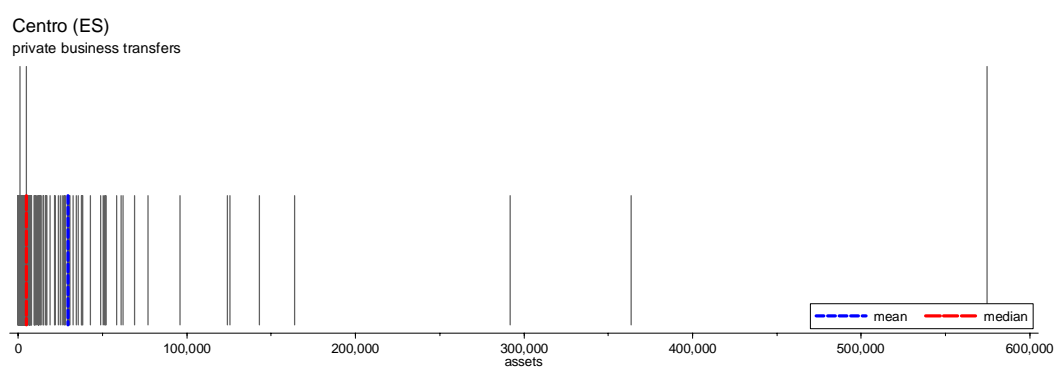
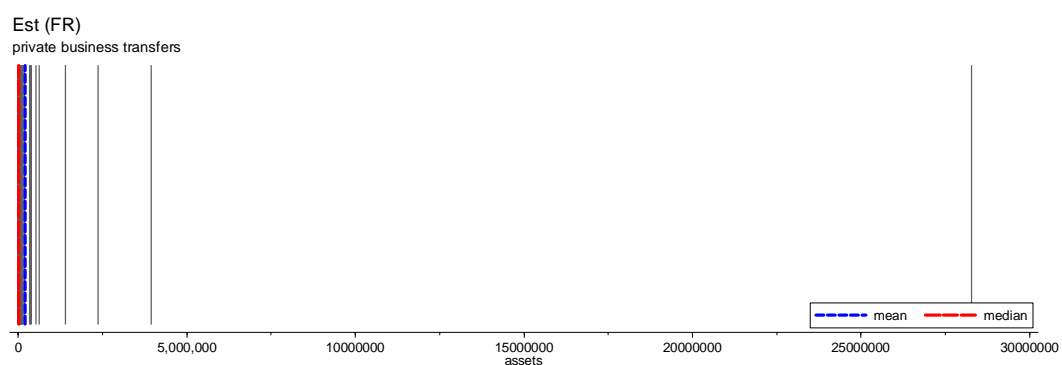


Noroeste (ES)
private business transfers



Nord - Pas-de-Calais (FR)
private business transfers



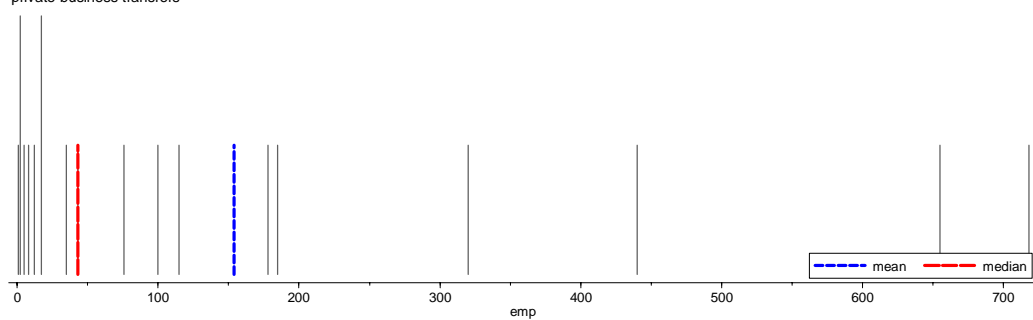


Note: in € 000s. Regions with one or no recorded values omitted.

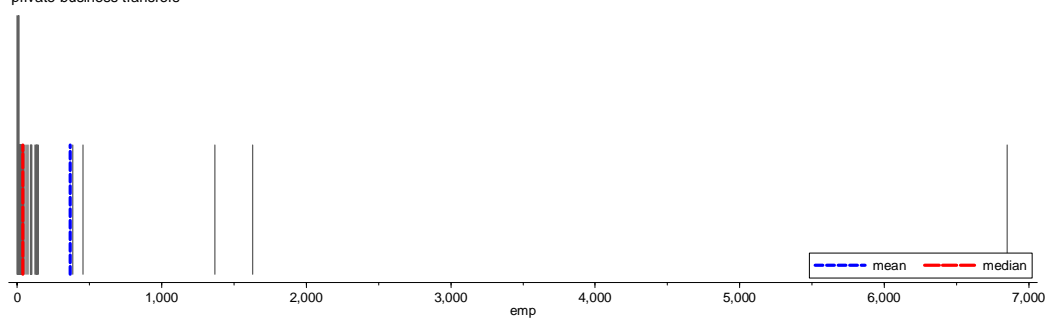
Source: Bureau van Dijk (ZEPHYR).

Figure 73: Distribution of employee numbers, MBO targets (1997-2008)

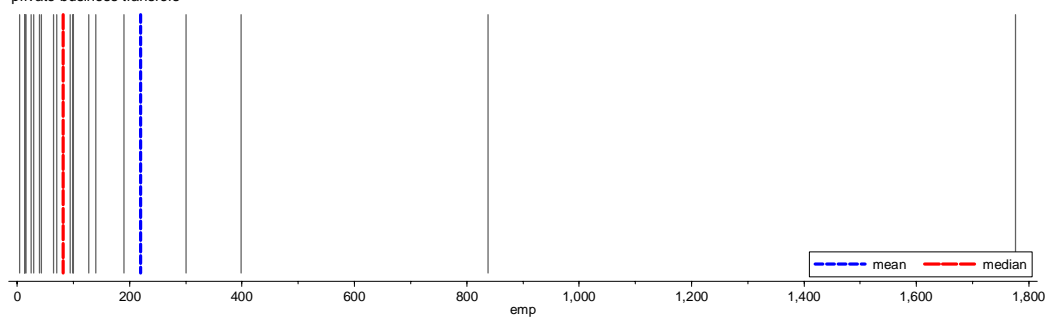
Schleswig-Holstein (DE)
private business transfers



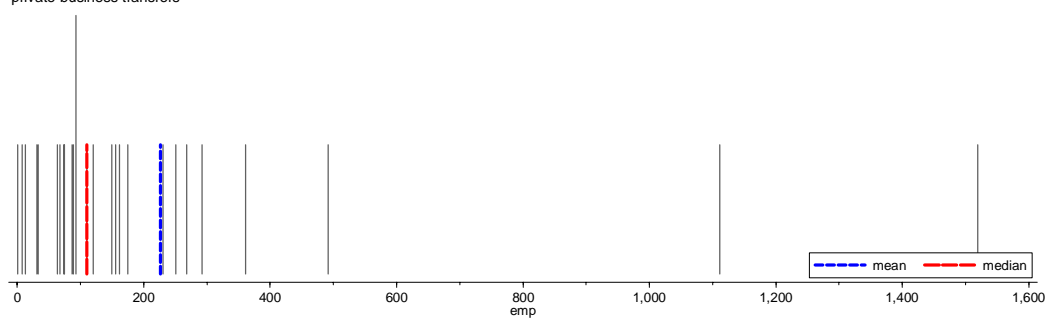
Région Wallonne (BE)
private business transfers



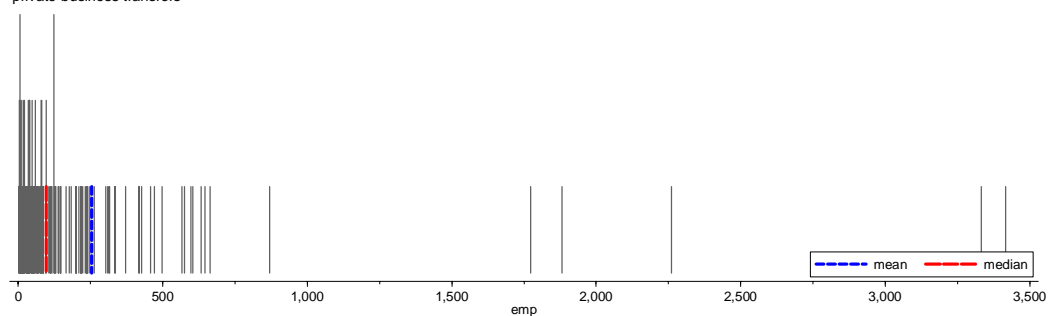
Rheinland-Pfalz (DE)
private business transfers



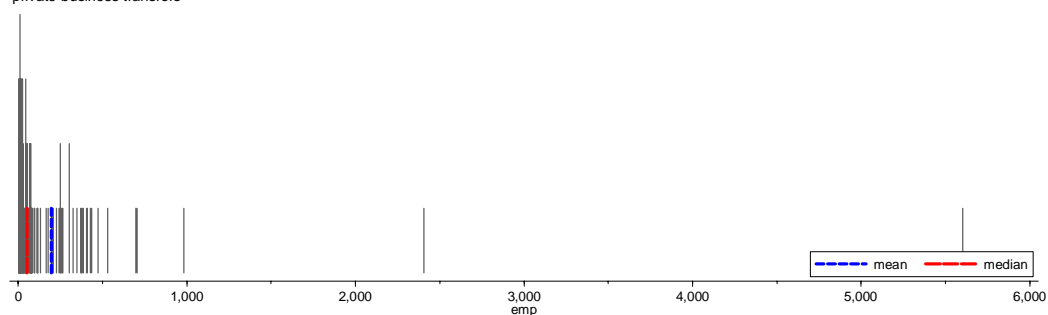
Northern Ireland (UK)
private business transfers



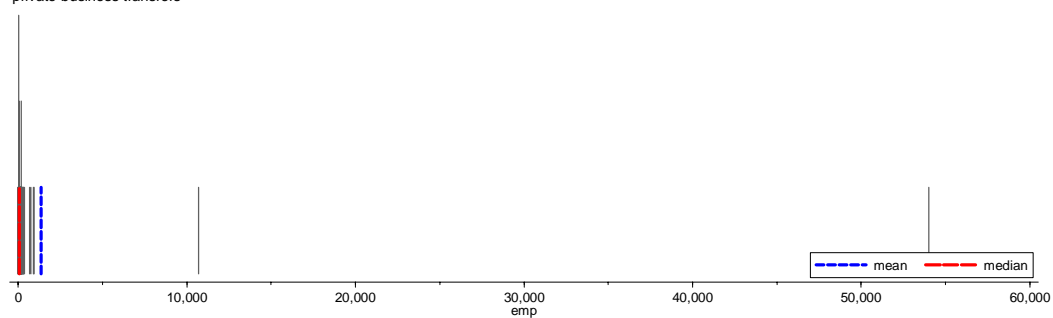
Northern England (UK)
private business transfers



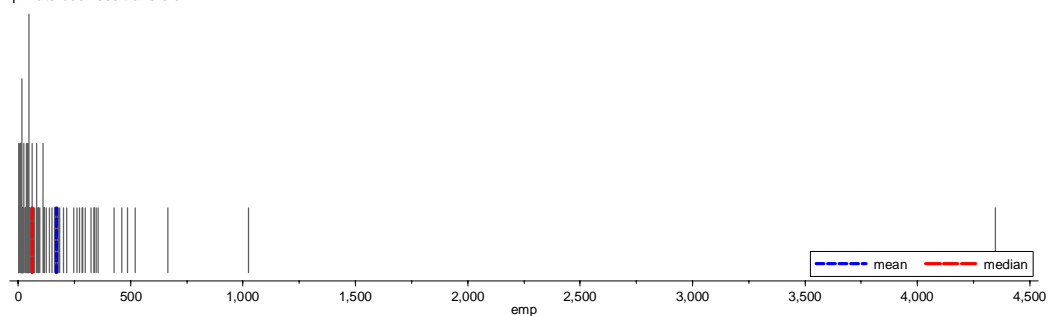
Noroeste (ES)
private business transfers

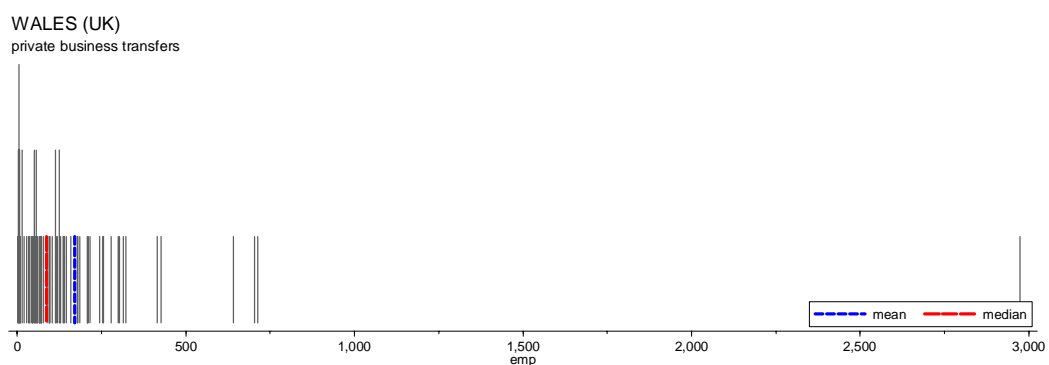
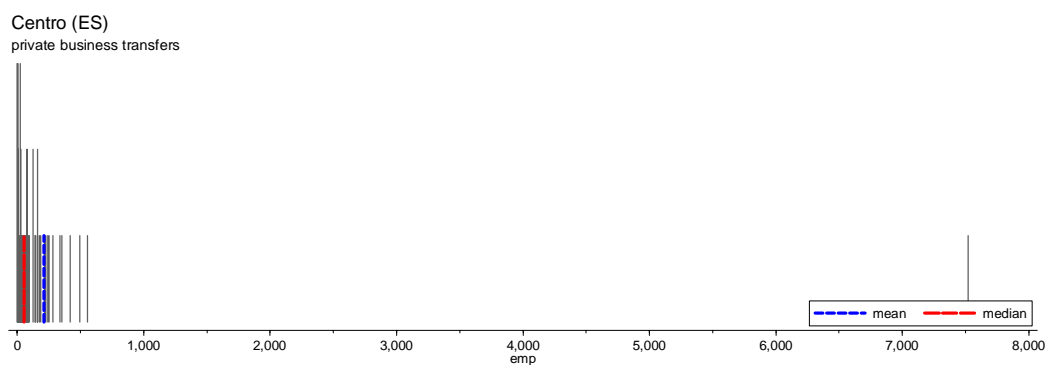


Nord - Pas-de-Calais (FR)
private business transfers



Est (FR)
private business transfers



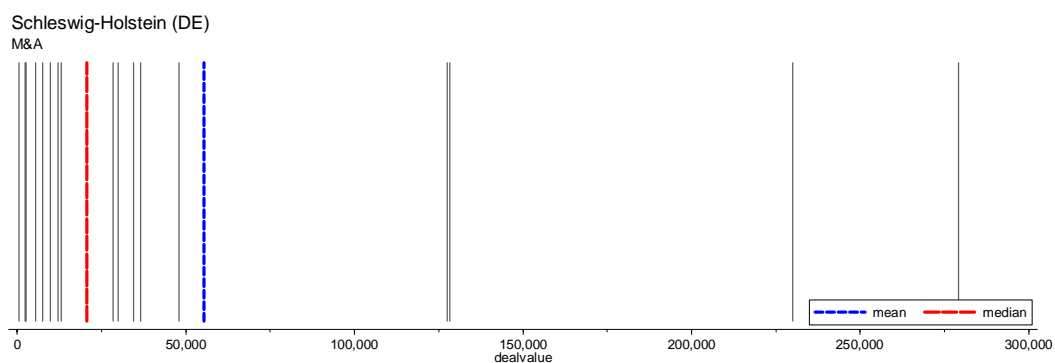


Note: regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

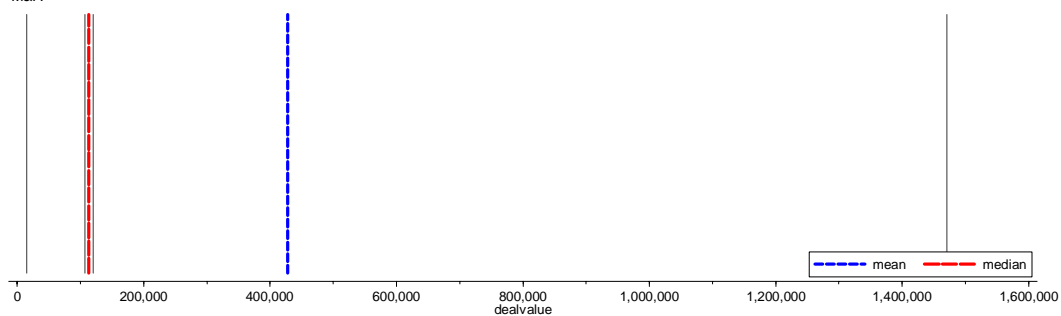
A1.4 M&As

Figure 74: Distribution of M&A deal values (1997-2008)



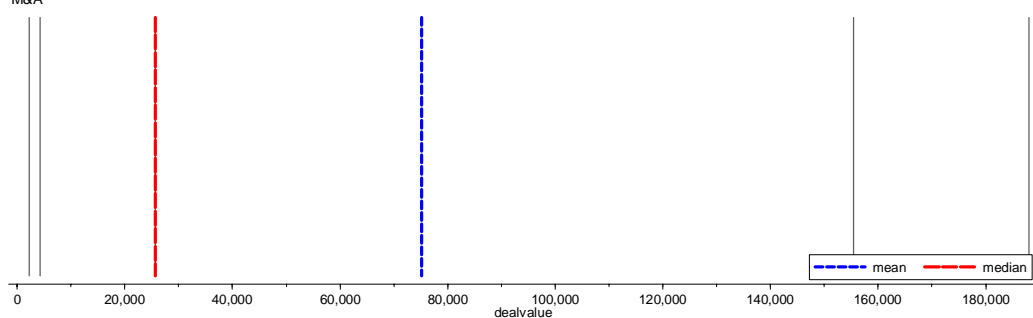
Région Wallonne (BE)

M&A



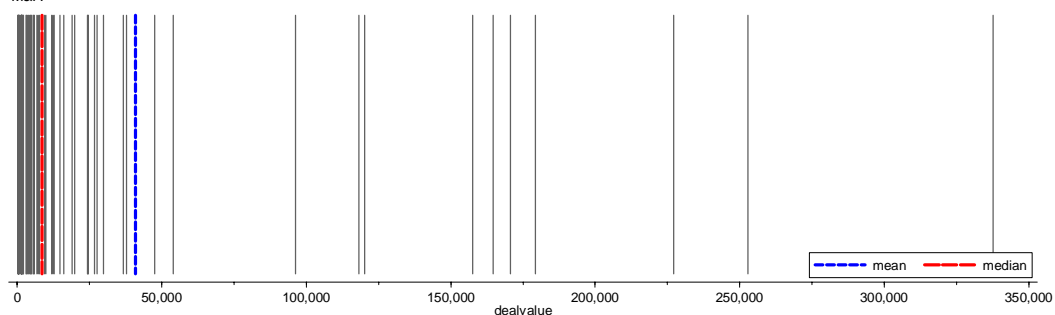
Rheinland-Pfalz (DE)

M&A



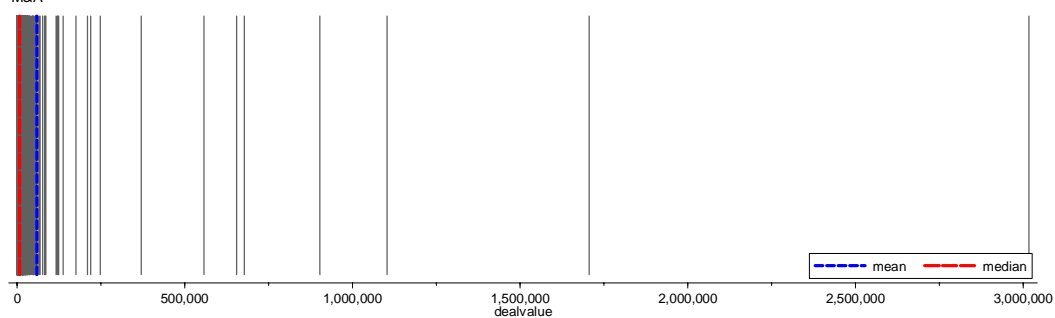
Northern Ireland (UK)

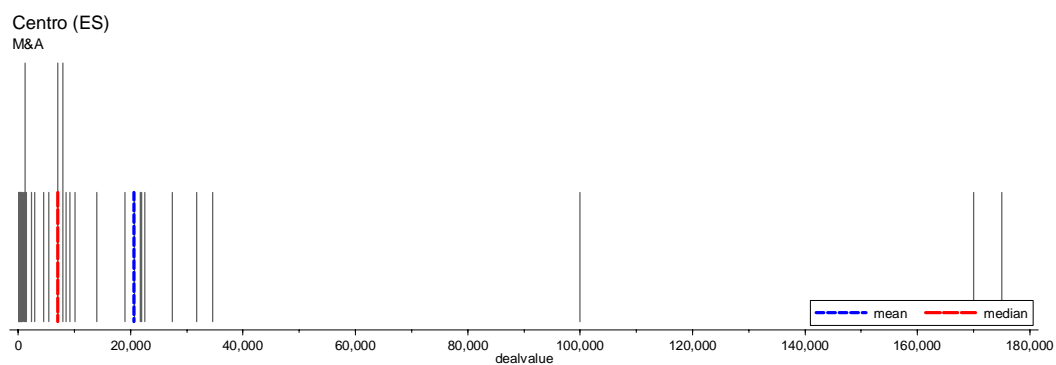
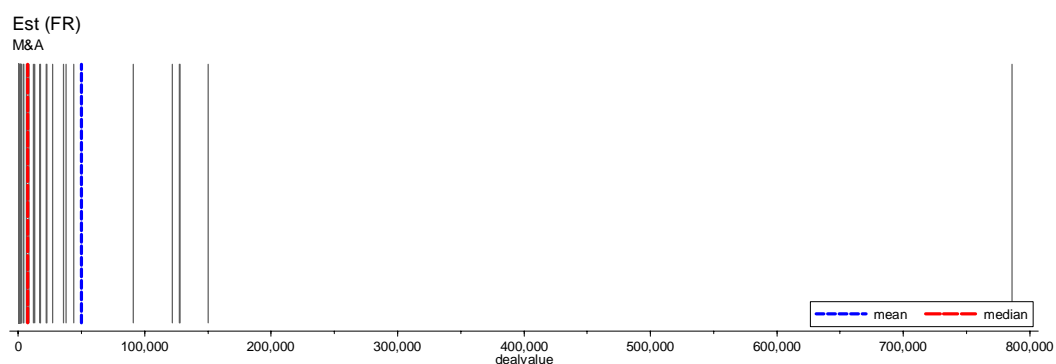
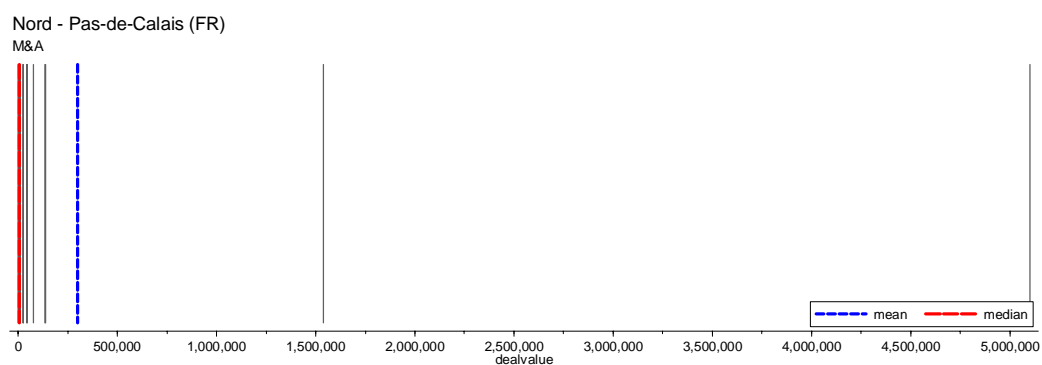
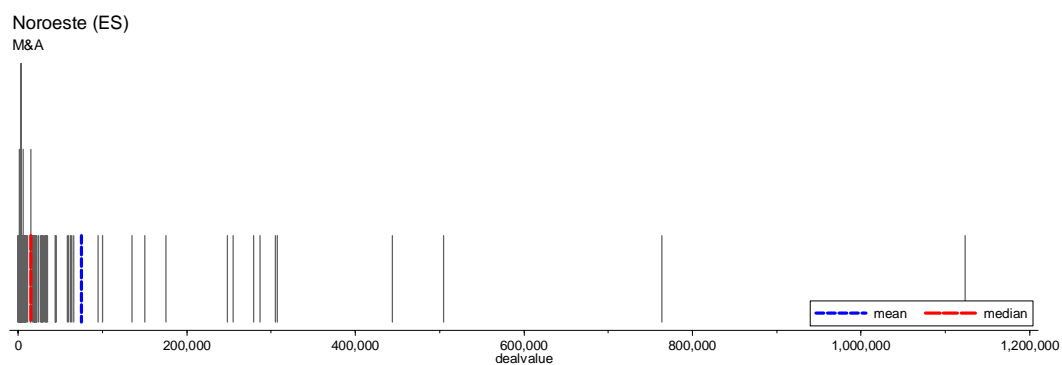
M&A

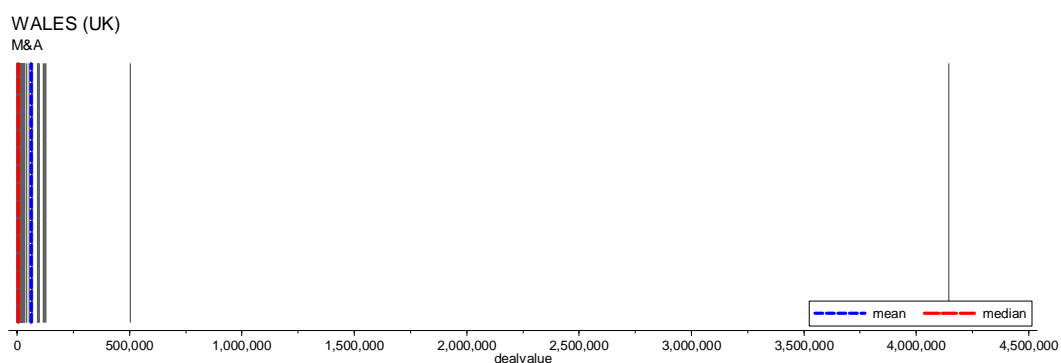


Northern England (UK)

M&A



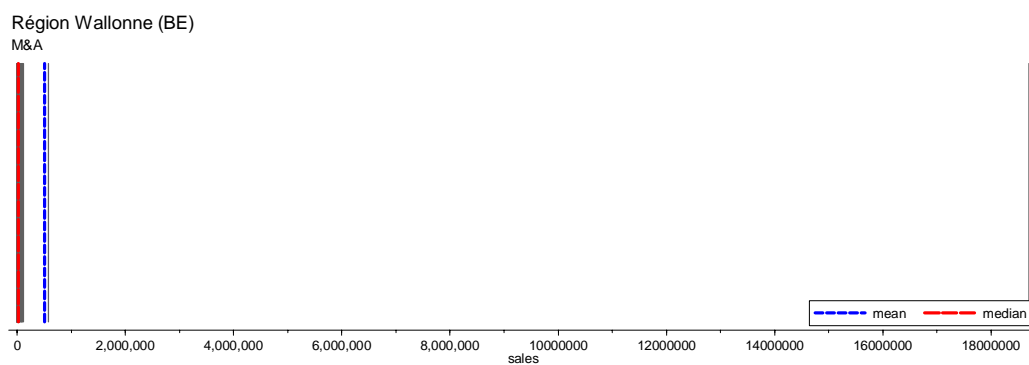
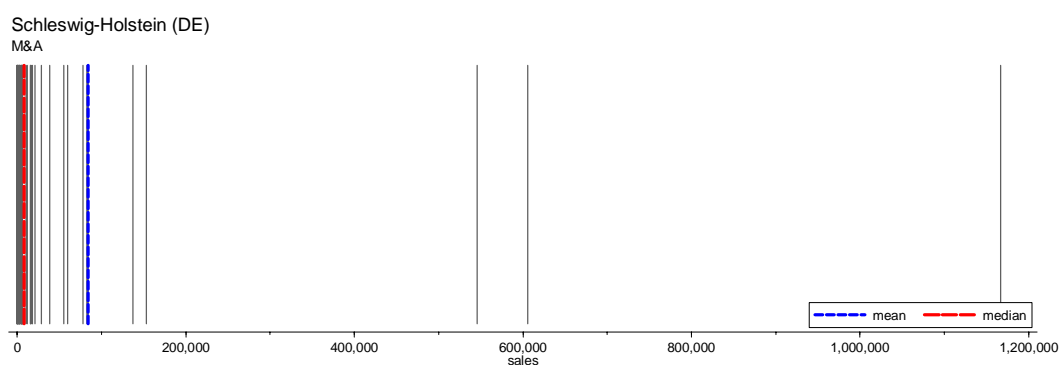




Note: in € 000s. Regions with one or no recorded values omitted.

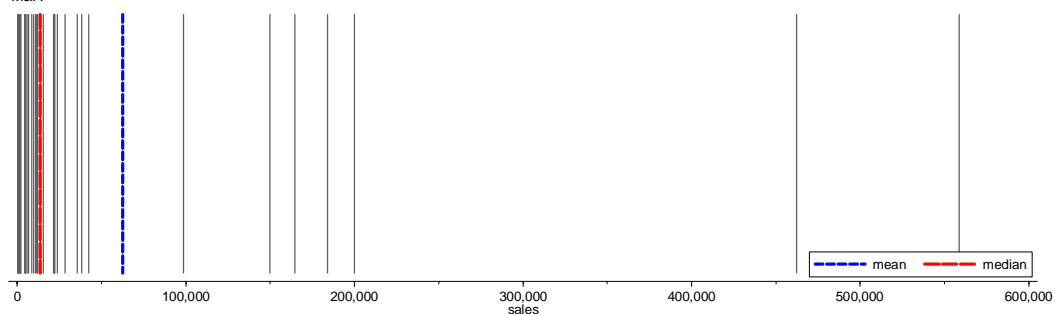
Source: Bureau van Dijk (ZEPHYR).

Figure 75: Distribution of annual sales, M&A targets (1997-2008)



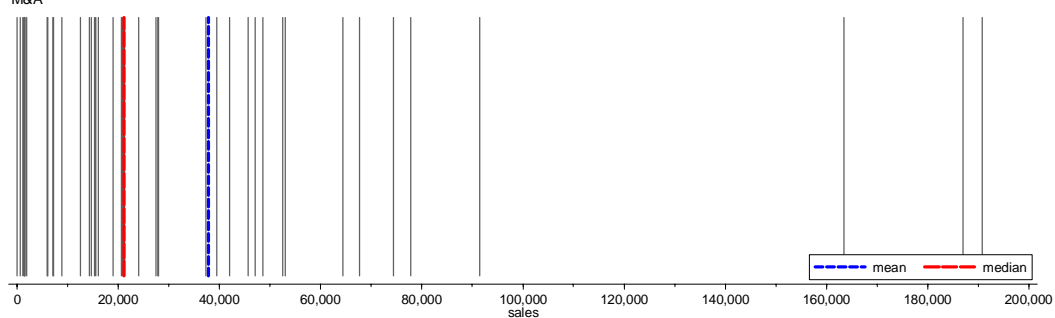
Rheinland-Pfalz (DE)

M&A



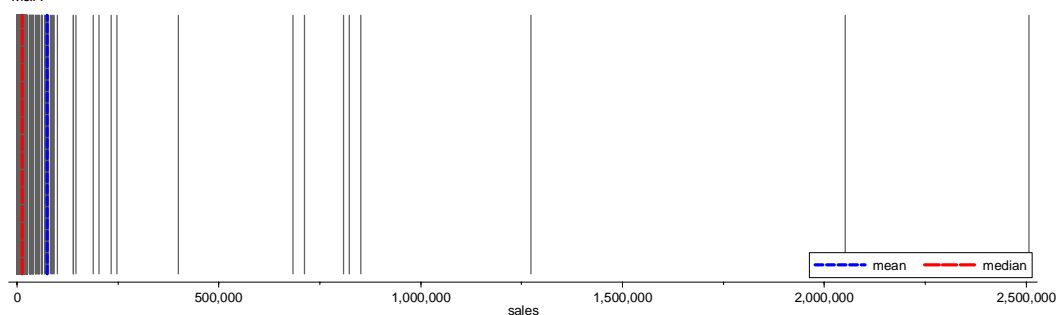
Northern Ireland (UK)

M&A



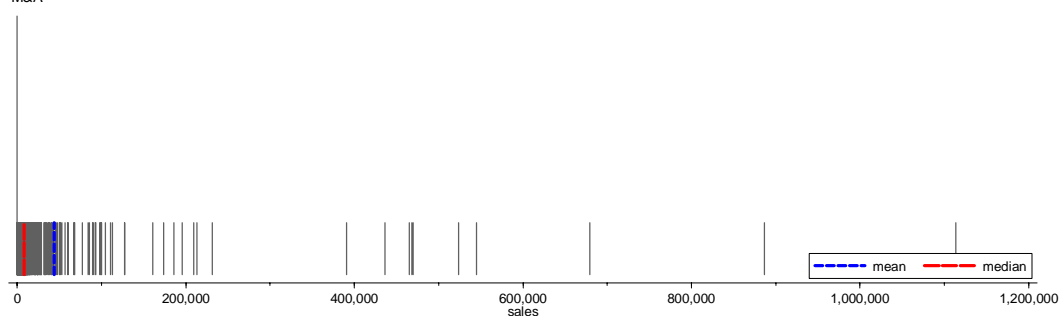
Northern England (UK)

M&A



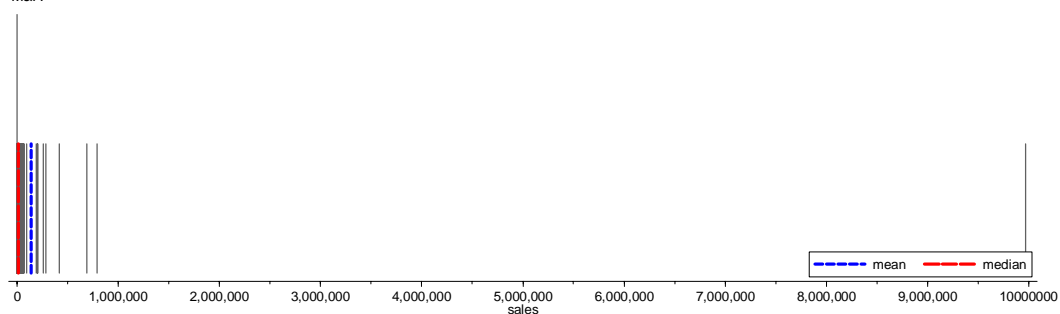
Noroeste (ES)

M&A



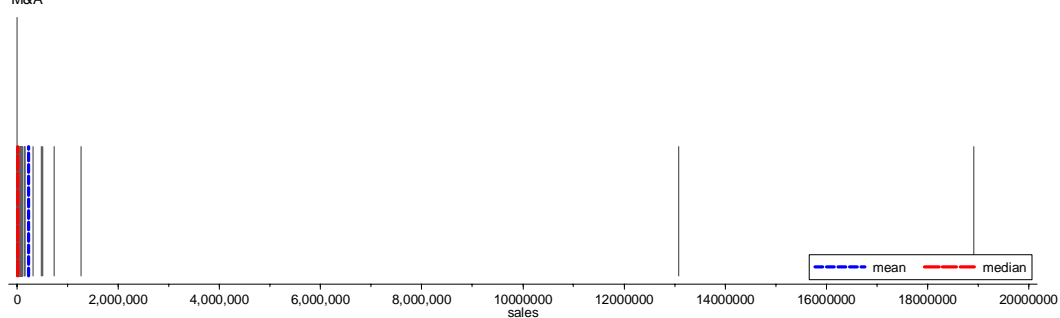
Nord - Pas-de-Calais (FR)

M&A



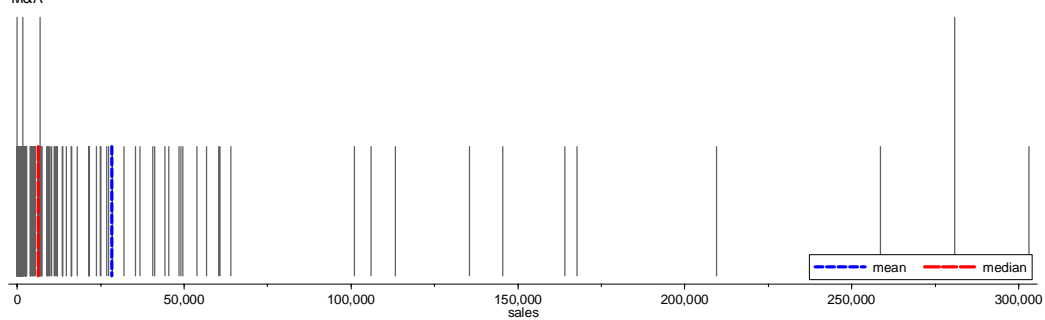
Est (FR)

M&A



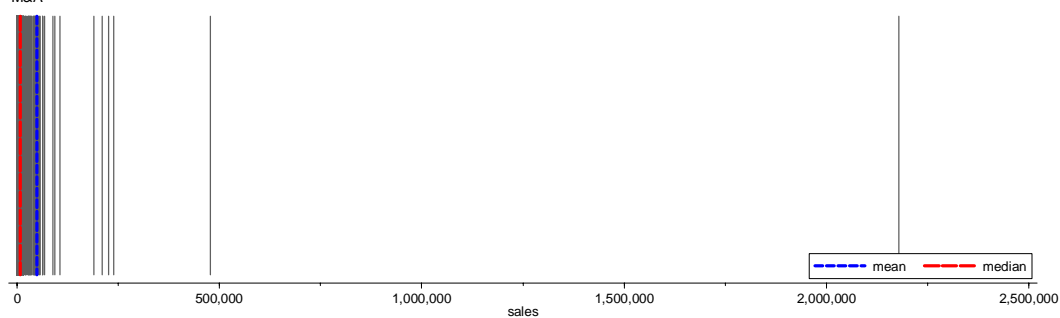
Centro (ES)

M&A



WALES (UK)

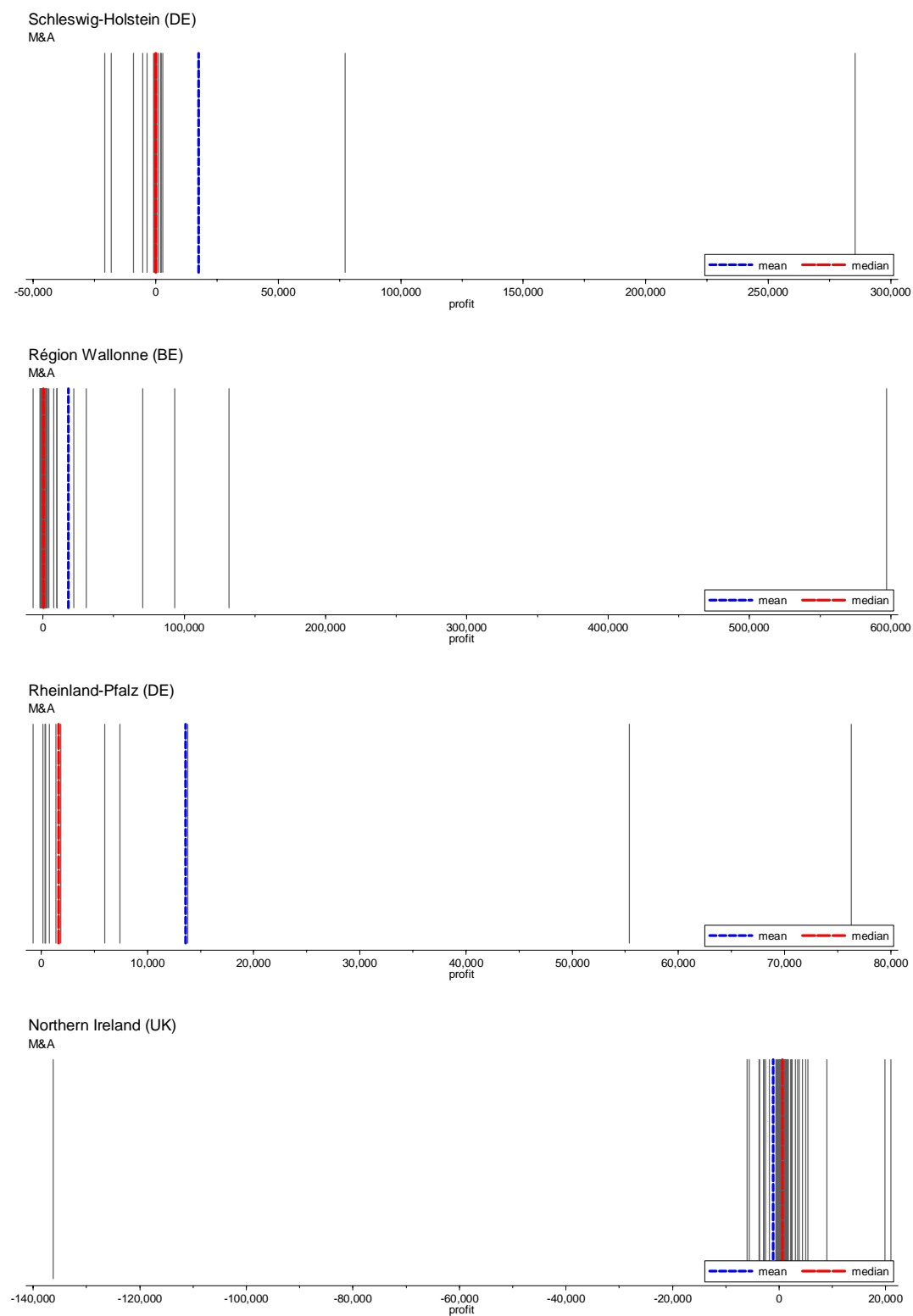
M&A



Note: in € 000s. Regions with one or no recorded values omitted.

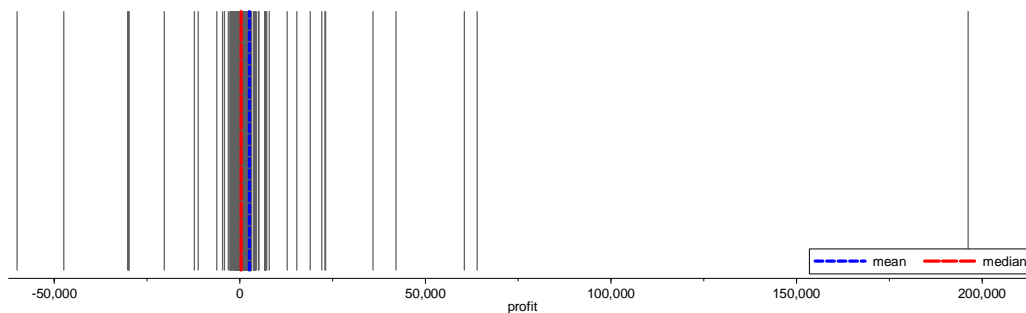
Source: Bureau van Dijk (ZEPHYR).

Figure 76: Distribution of annual profits, M&A targets (1997-2008)



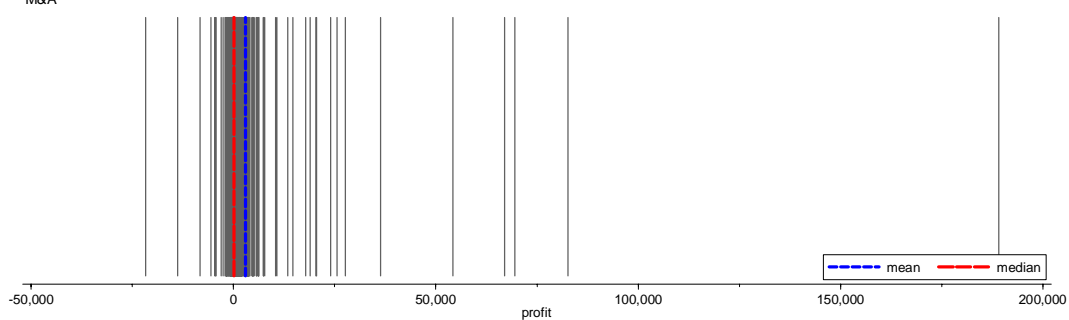
Northern England (UK)

M&A



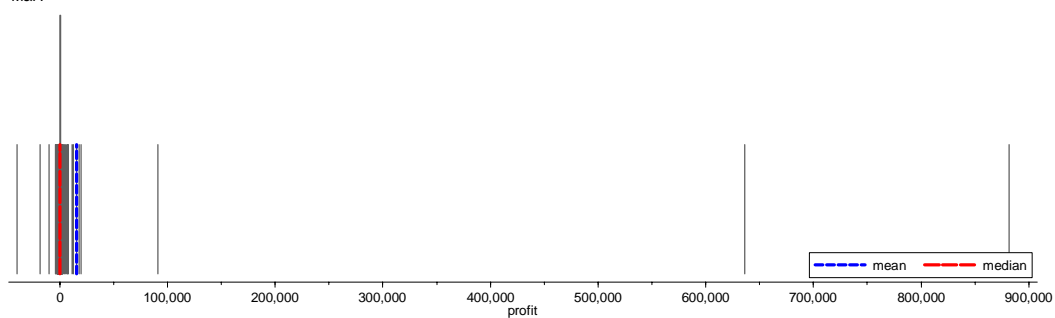
Noroeste (ES)

M&A



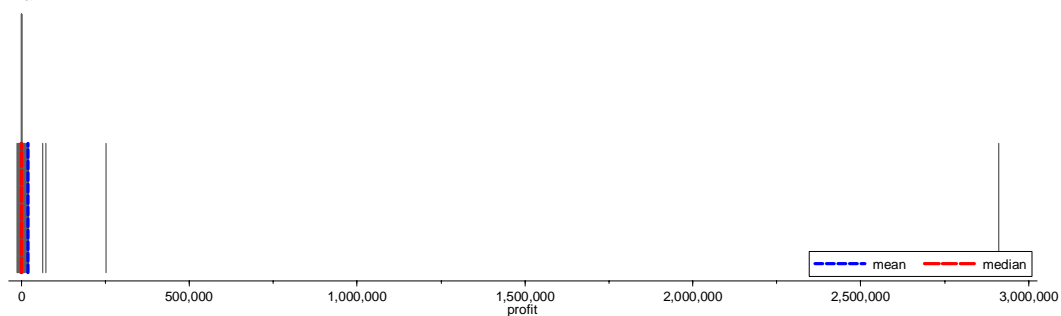
Nord - Pas-de-Calais (FR)

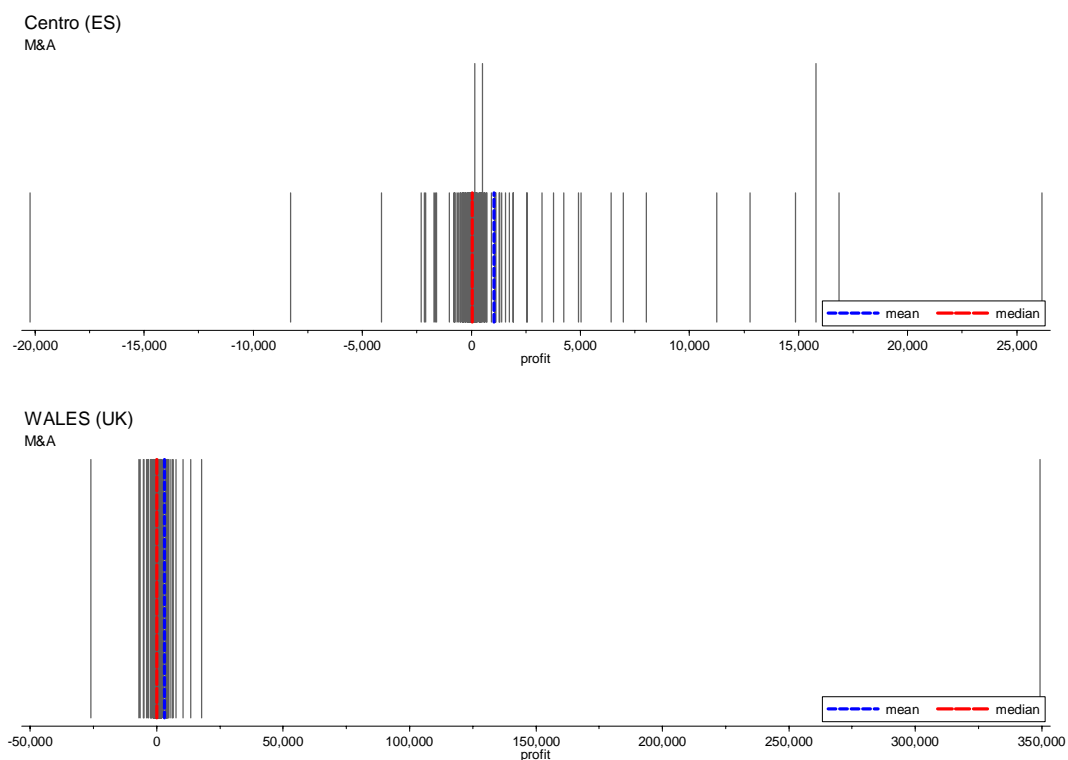
M&A



Est (FR)

M&A

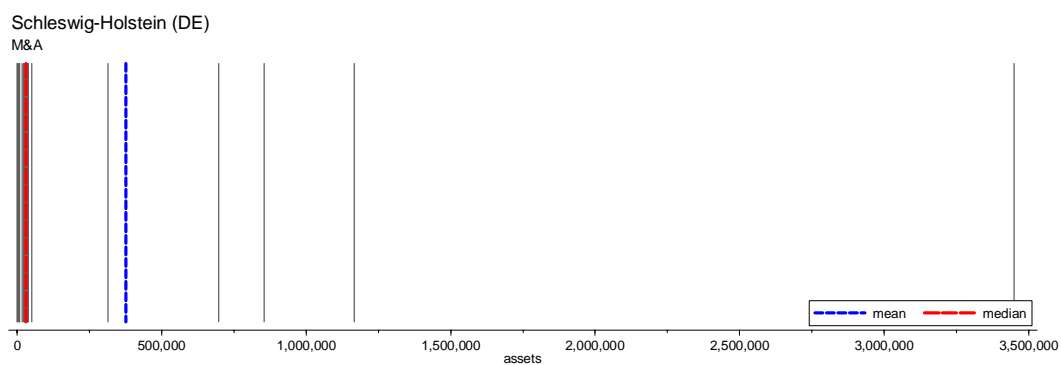




Note: in € 000s. Regions with one or no recorded values omitted.

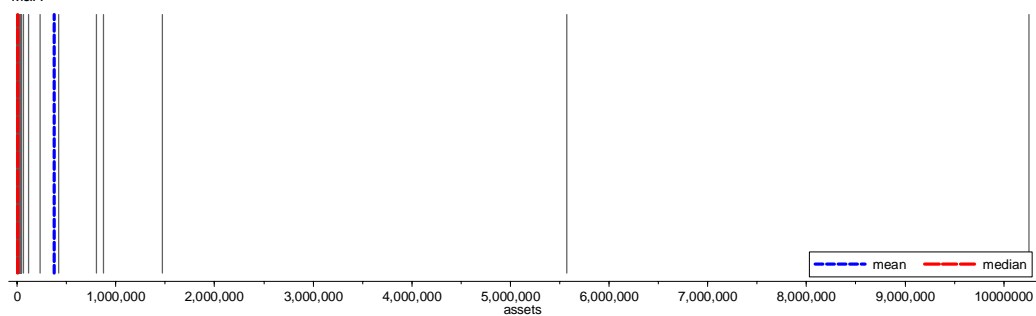
Source: Bureau van Dijk (ZEPHYR).

Figure 77: Distribution of assets, M&A targets (1997-2008)



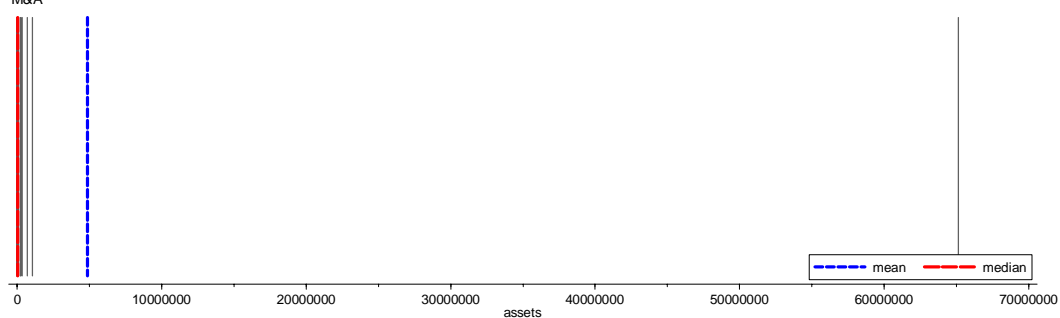
Région Wallonne (BE)

M&A



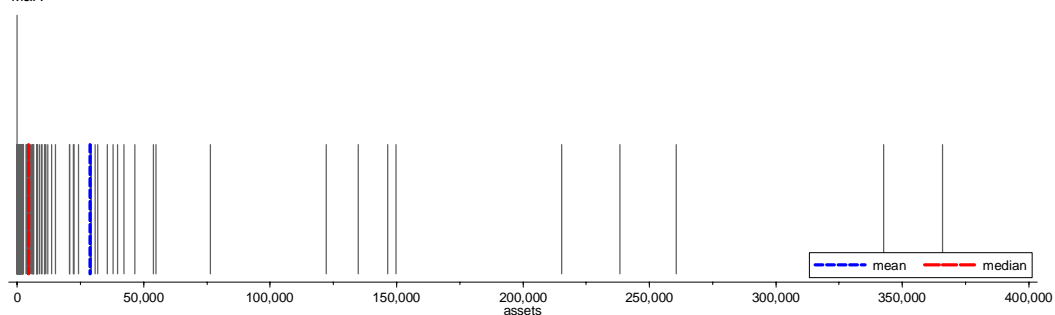
Rheinland-Pfalz (DE)

M&A



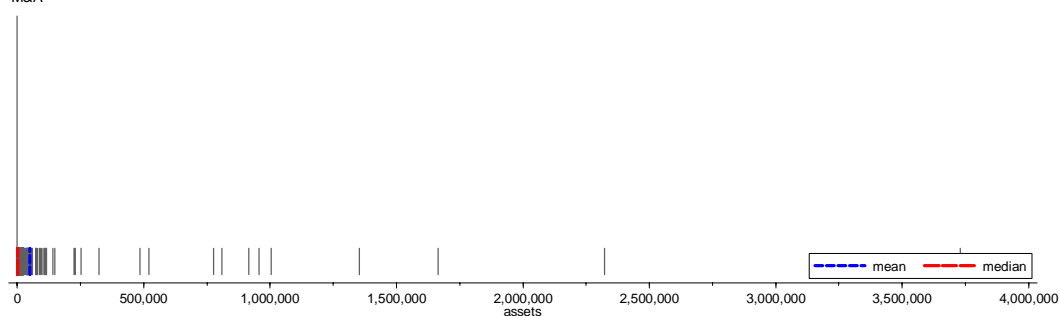
Northern Ireland (UK)

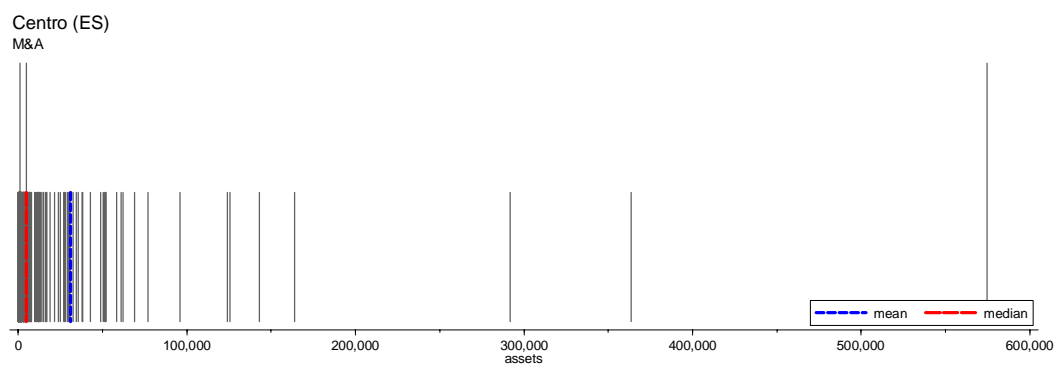
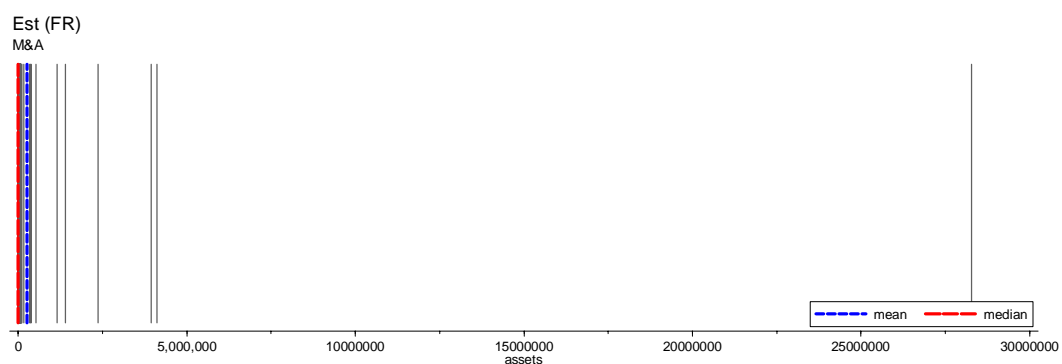
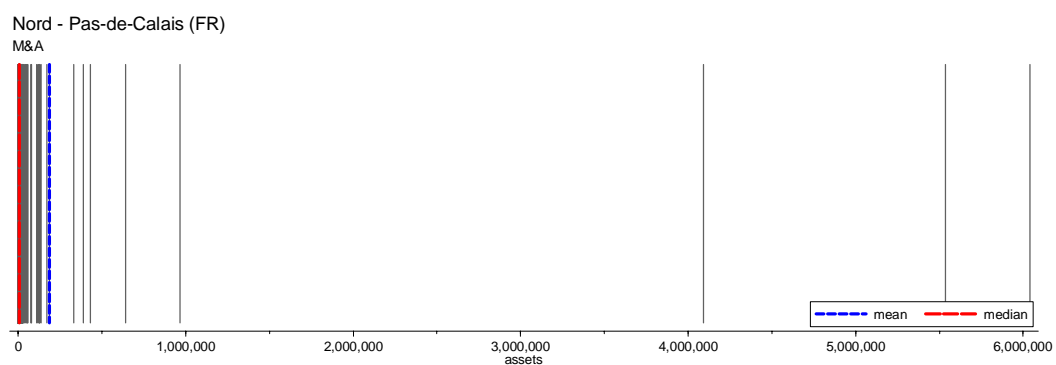
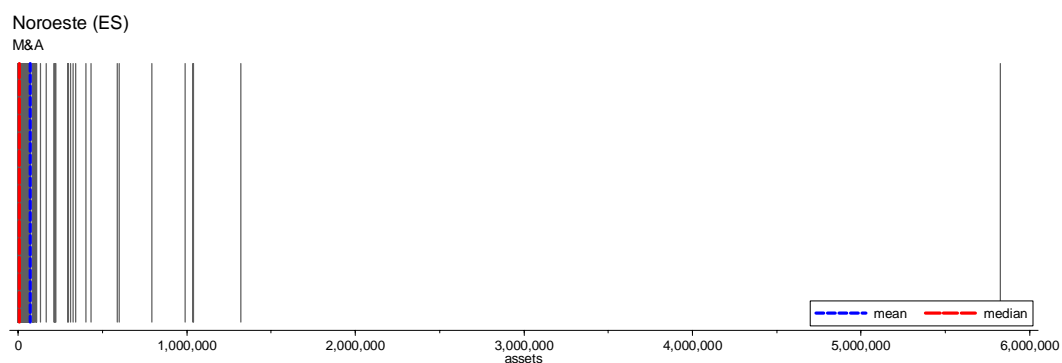
M&A

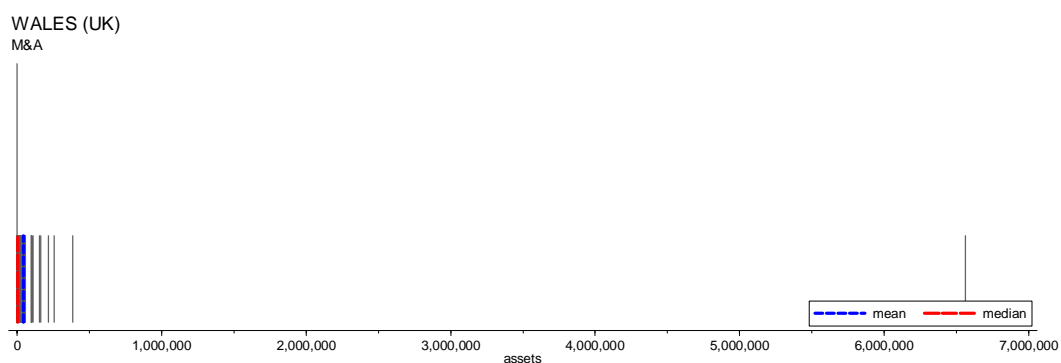


Northern England (UK)

M&A



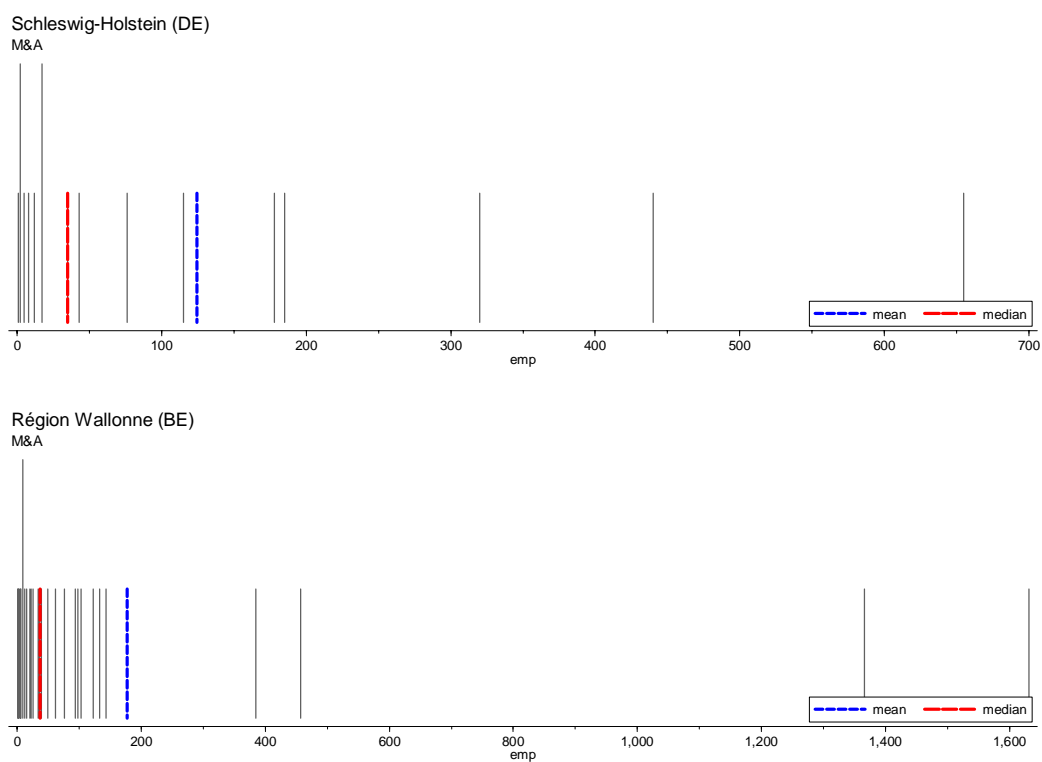




Note: in € 000s. Regions with one or no recorded values omitted.

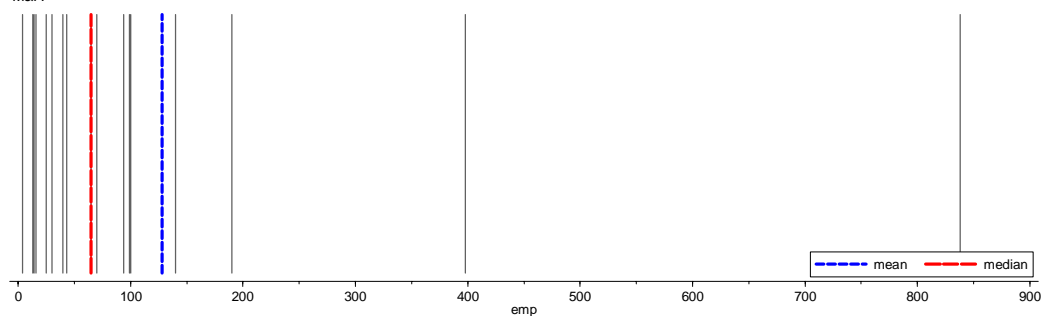
Source: Bureau van Dijk (ZEPHYR).

Figure 78: Distribution of employee numbers, M&A targets (1997-2008)



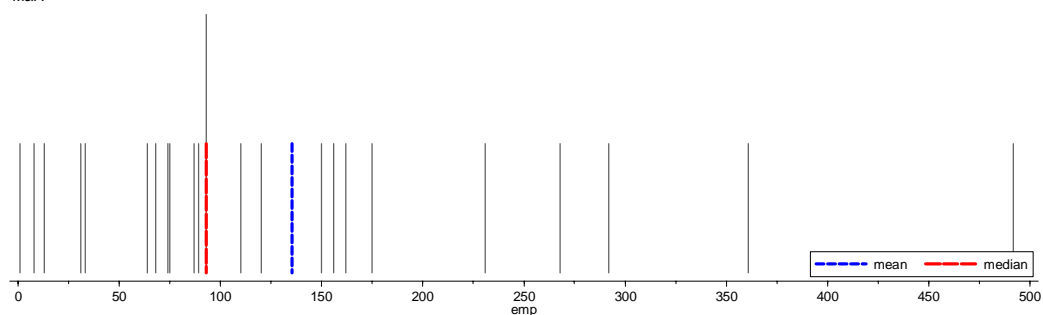
Rheinland-Pfalz (DE)

M&A



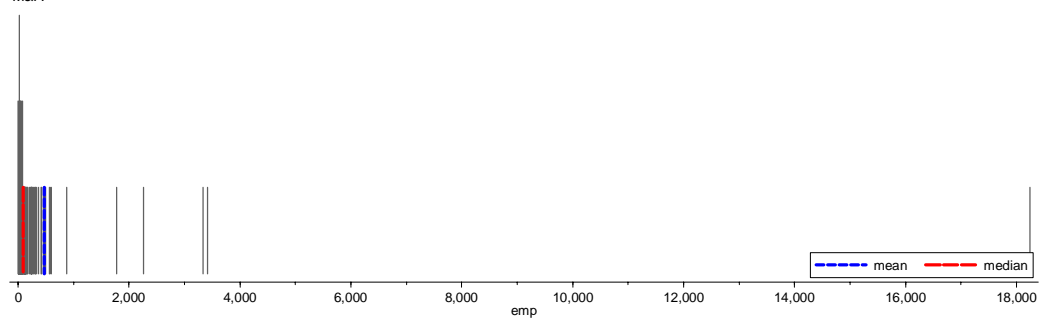
Northern Ireland (UK)

M&A



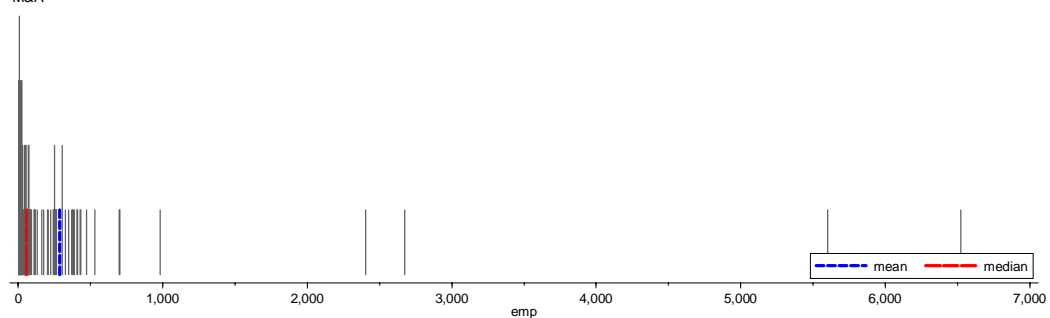
Northern England (UK)

M&A

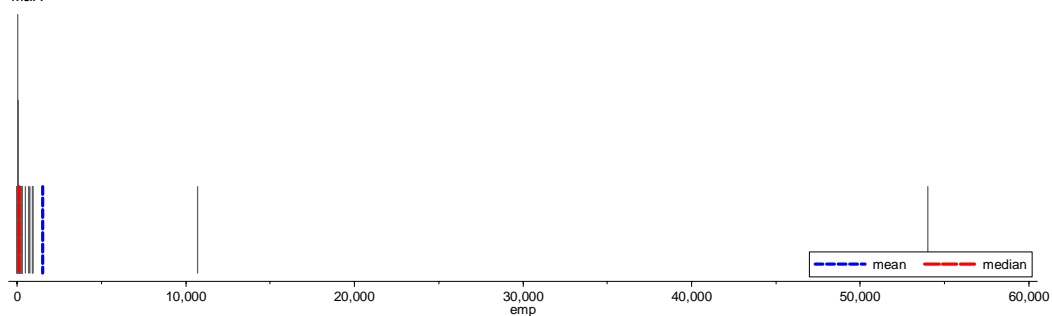


Noroeste (ES)

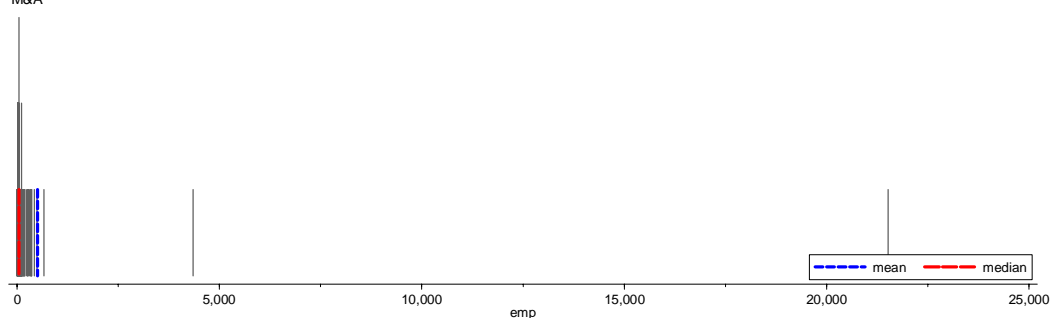
M&A



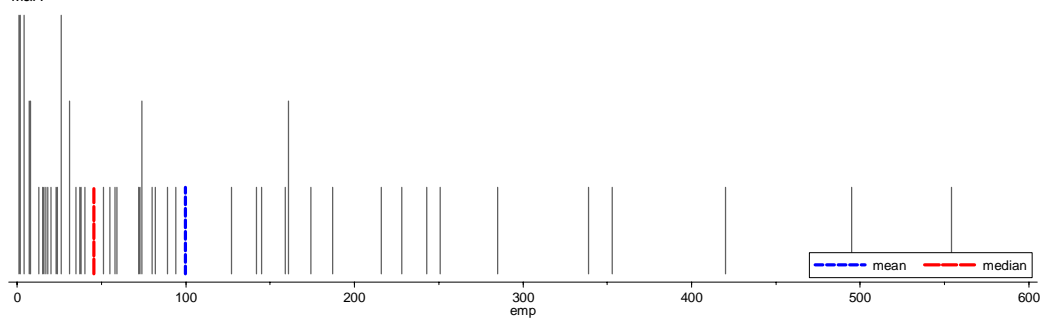
Nord - Pas-de-Calais (FR)
M&A



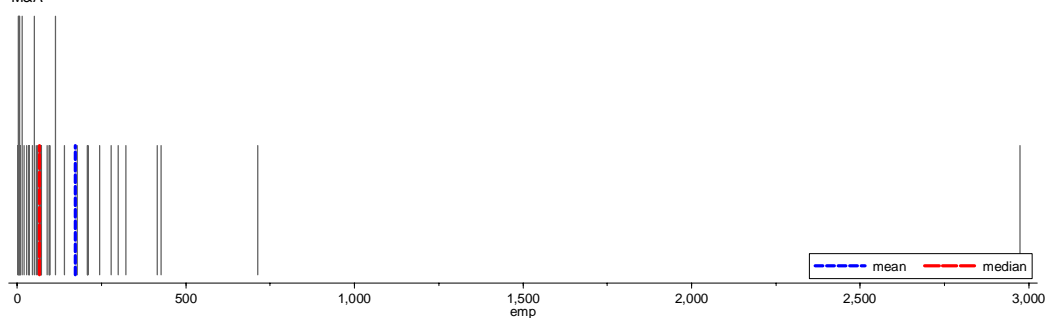
Est (FR)
M&A



Centro (ES)
M&A



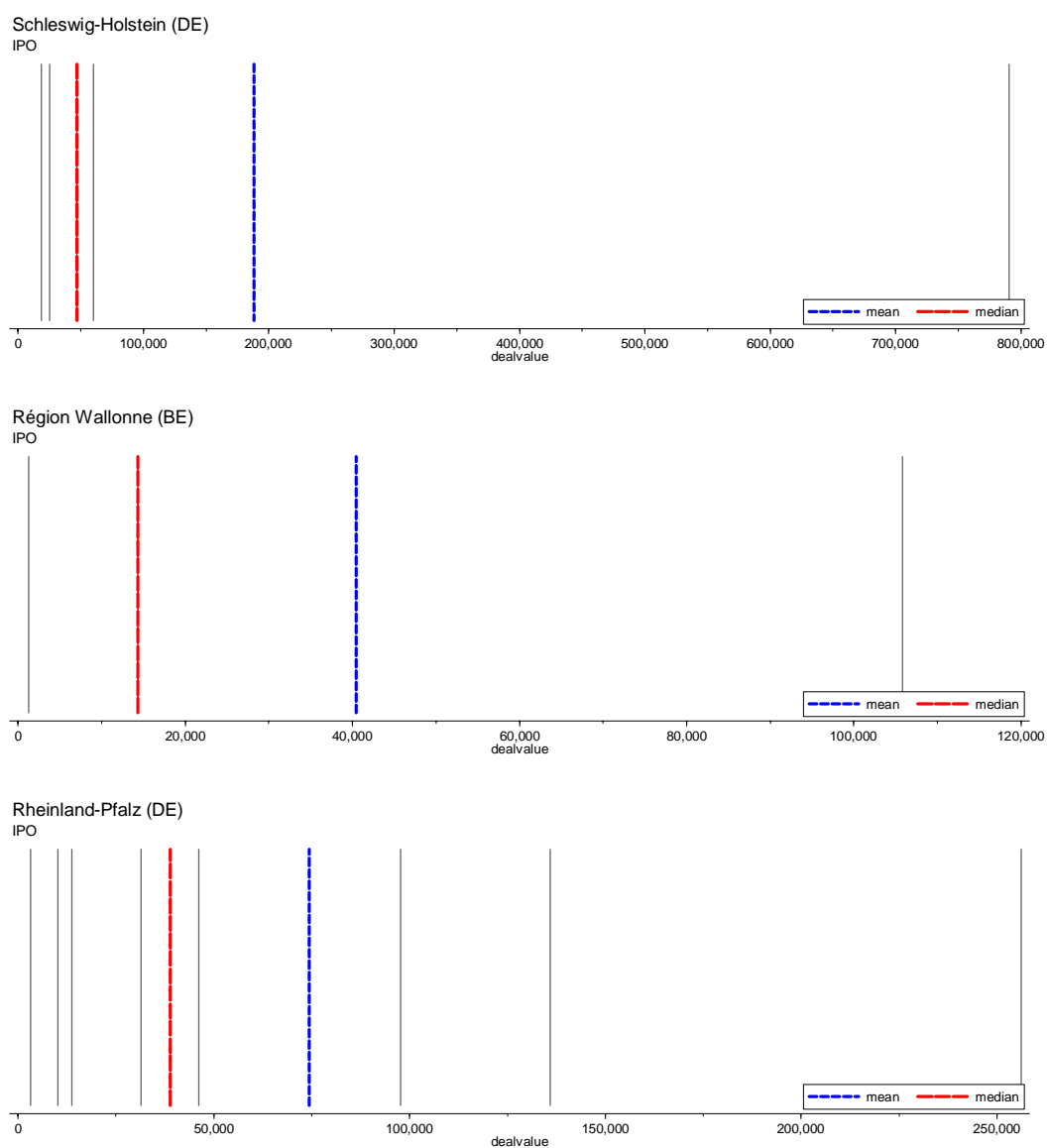
WALES (UK)
M&A

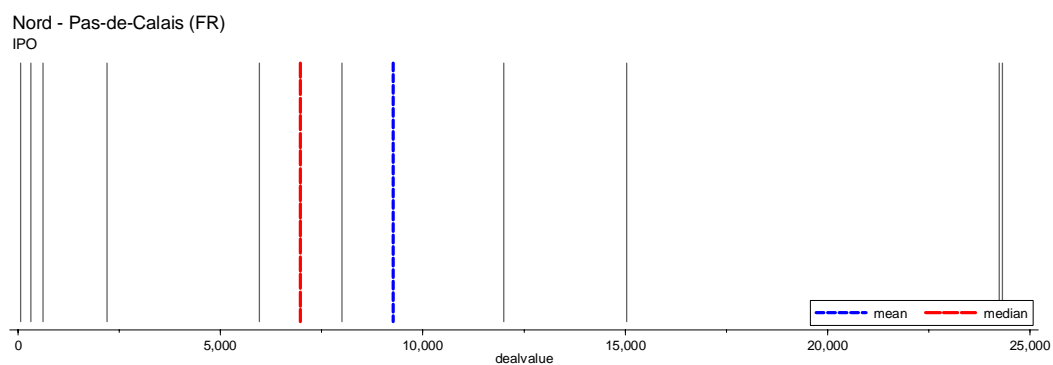
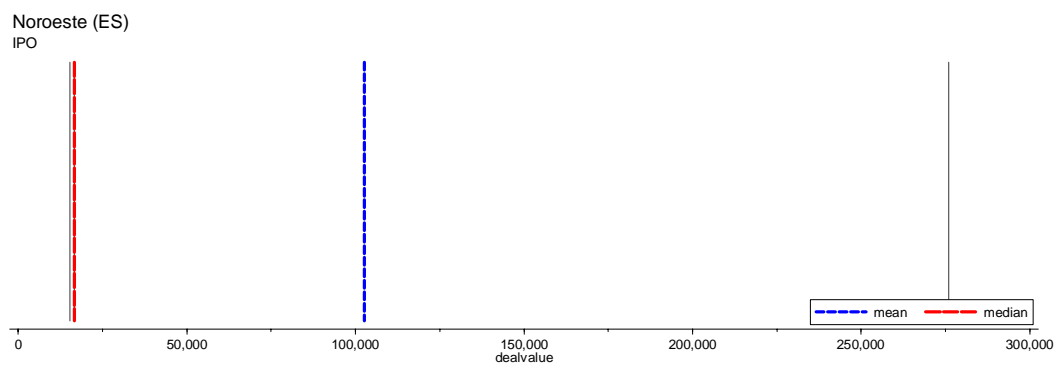
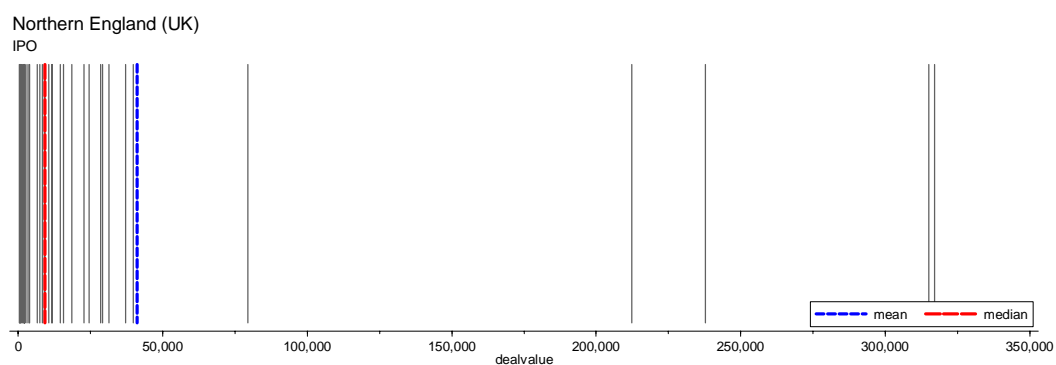
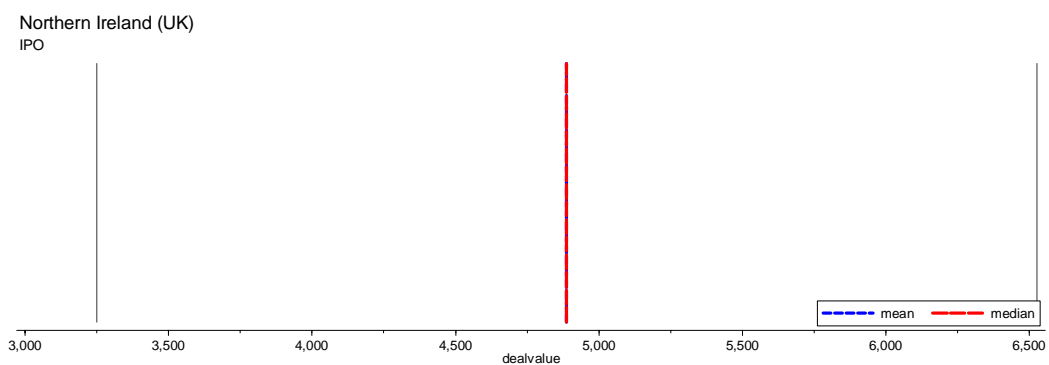


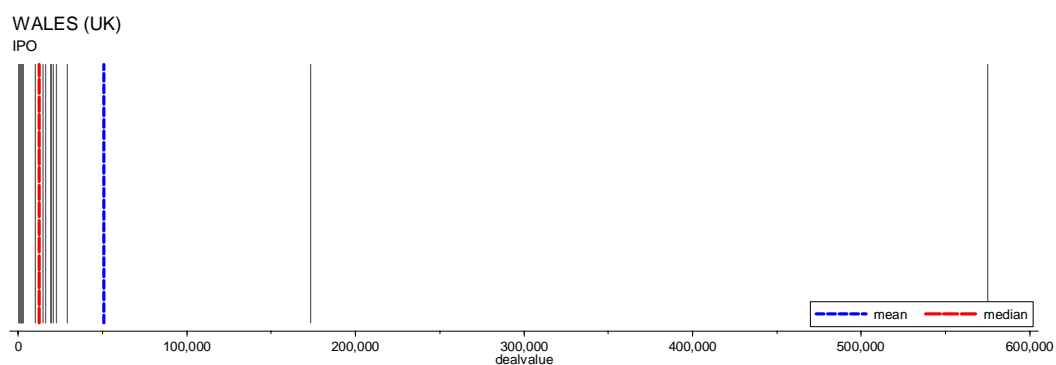
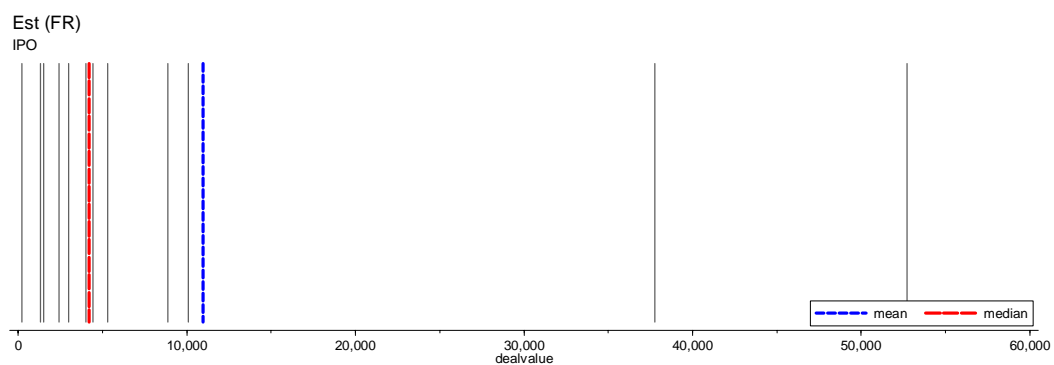
Note: regions with one or no recorded values omitted.
Source: Bureau van Dijk (ZEPHYR).

A1.5 IPOs

Figure 79: Distribution of IPO values (1997-2008)



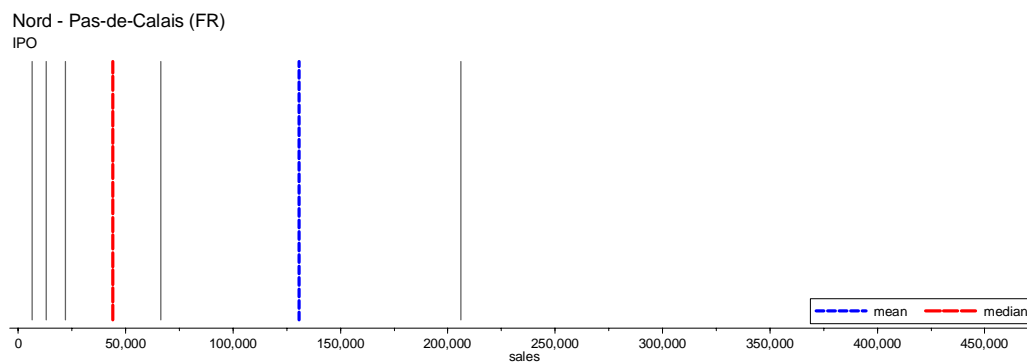


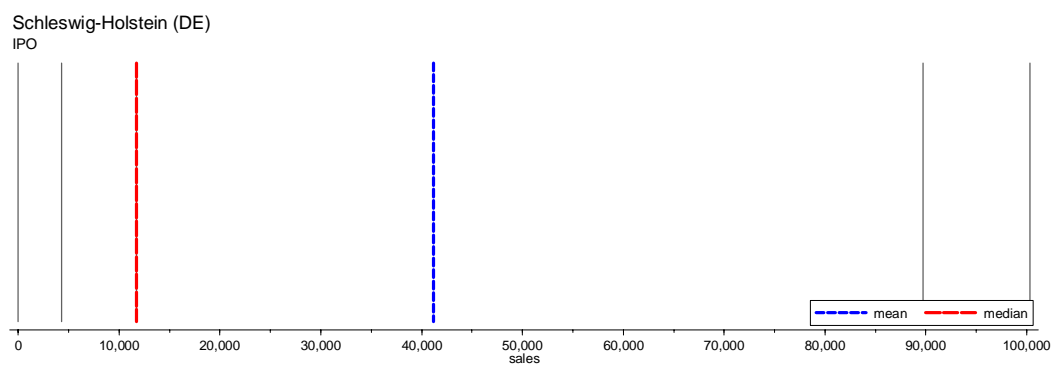
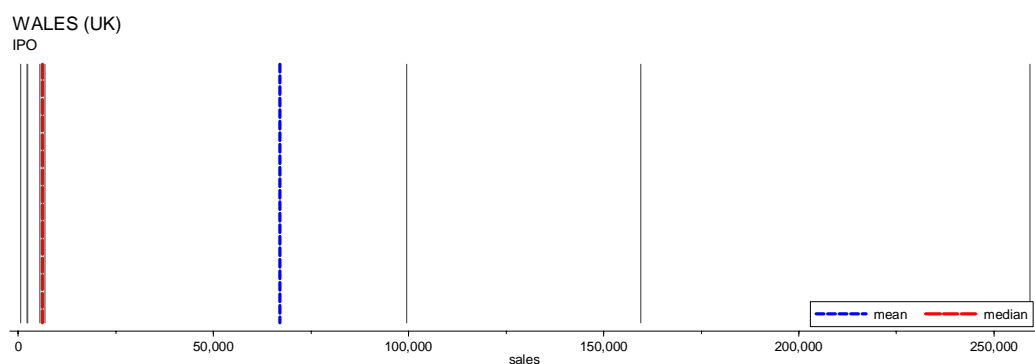
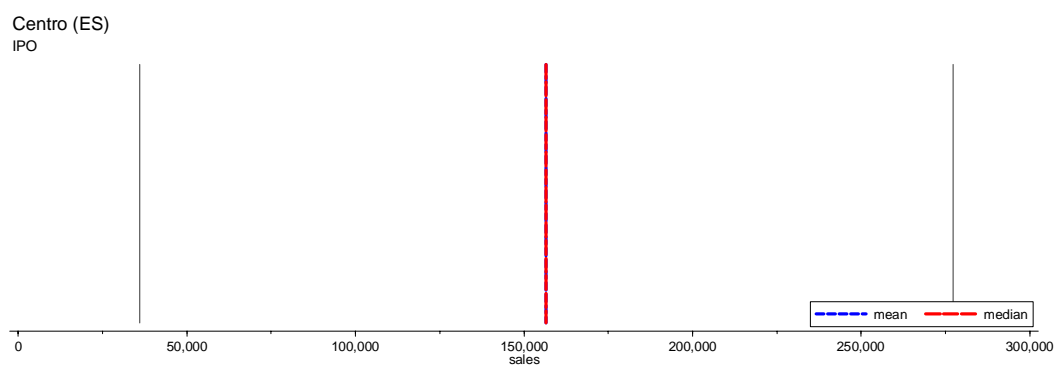
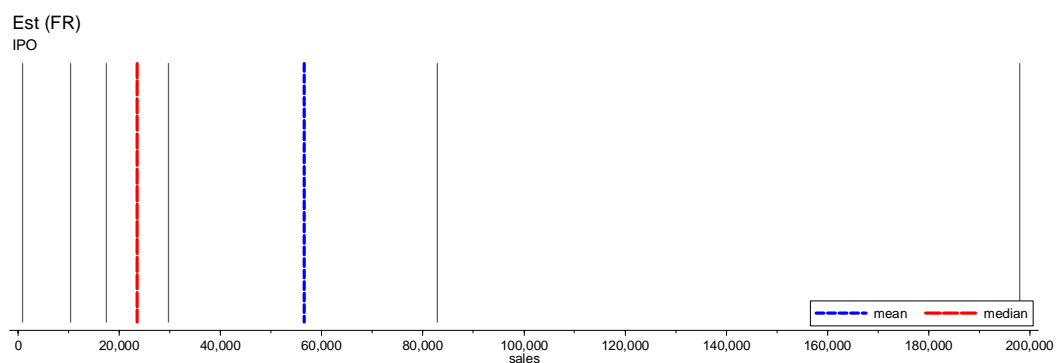


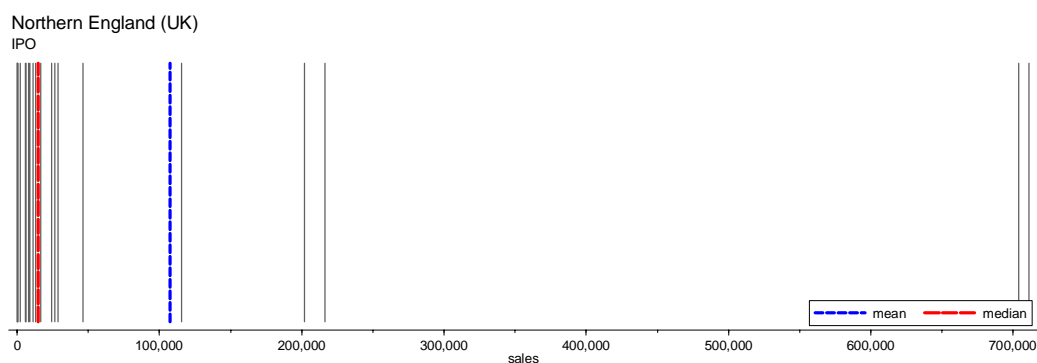
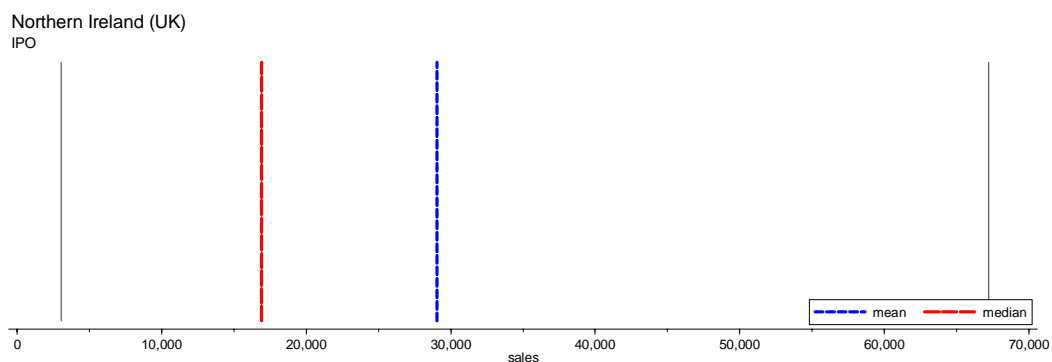
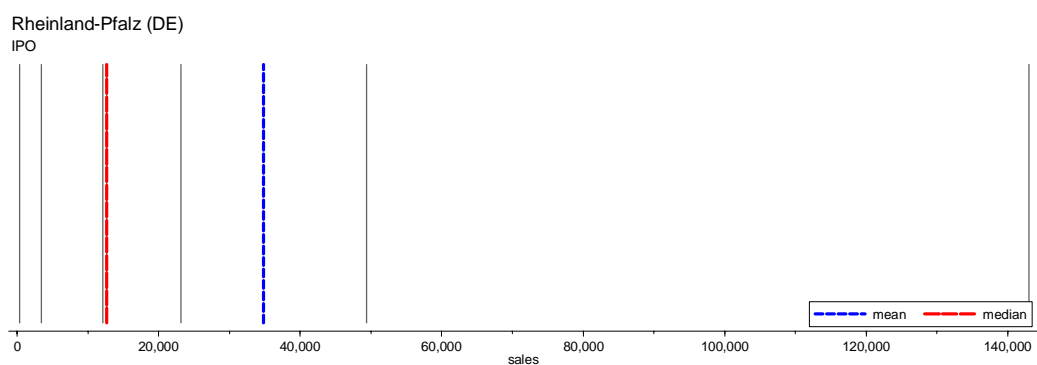
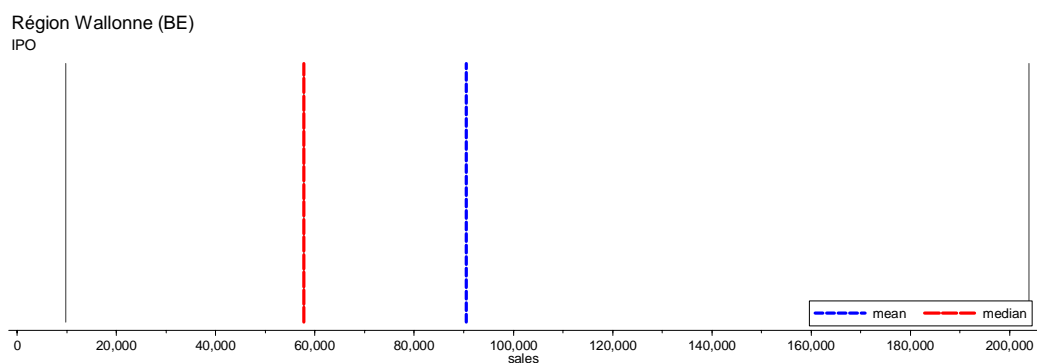
Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

Figure 80: Distribution of annual sales, IPOs (1997-2008)



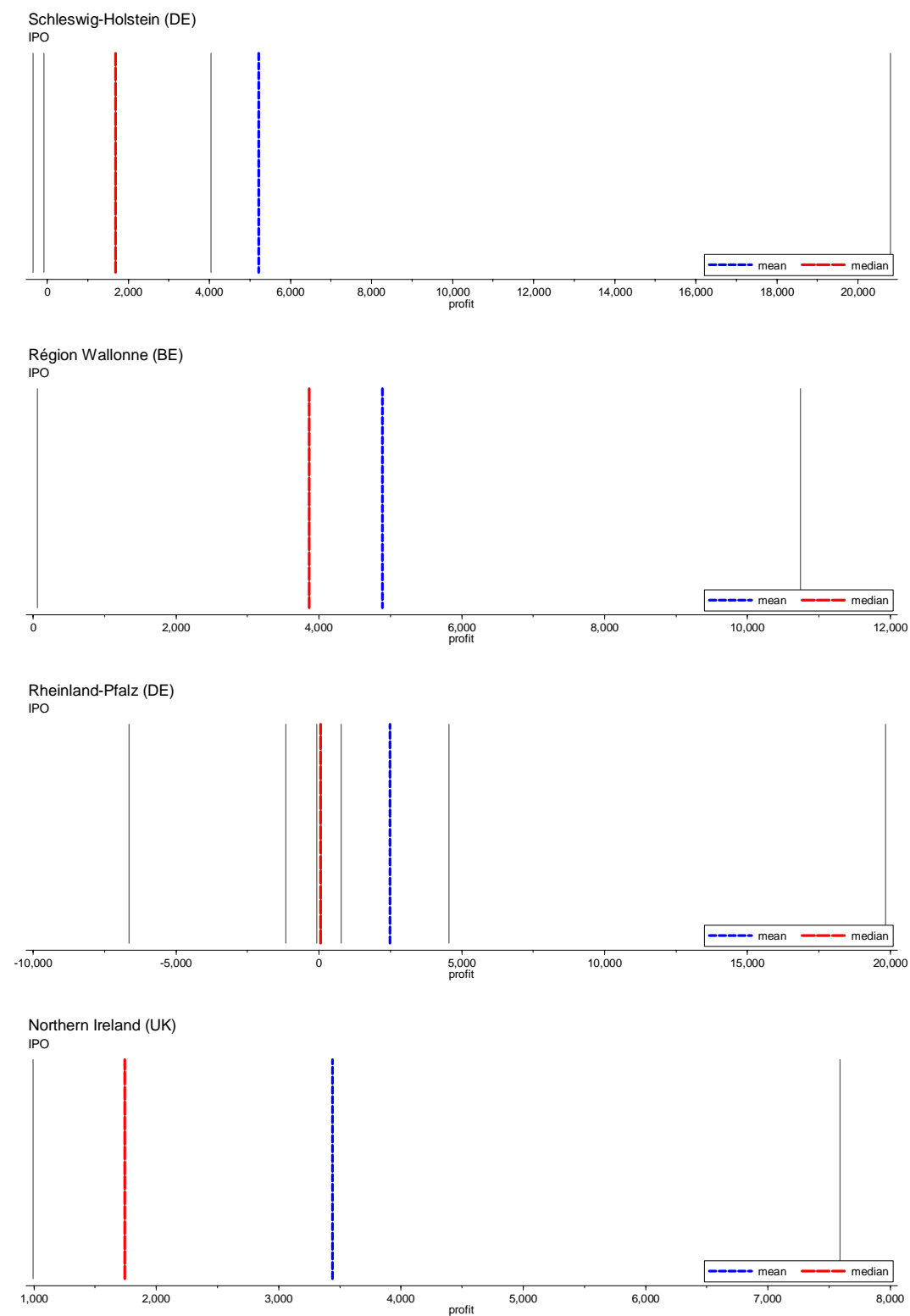


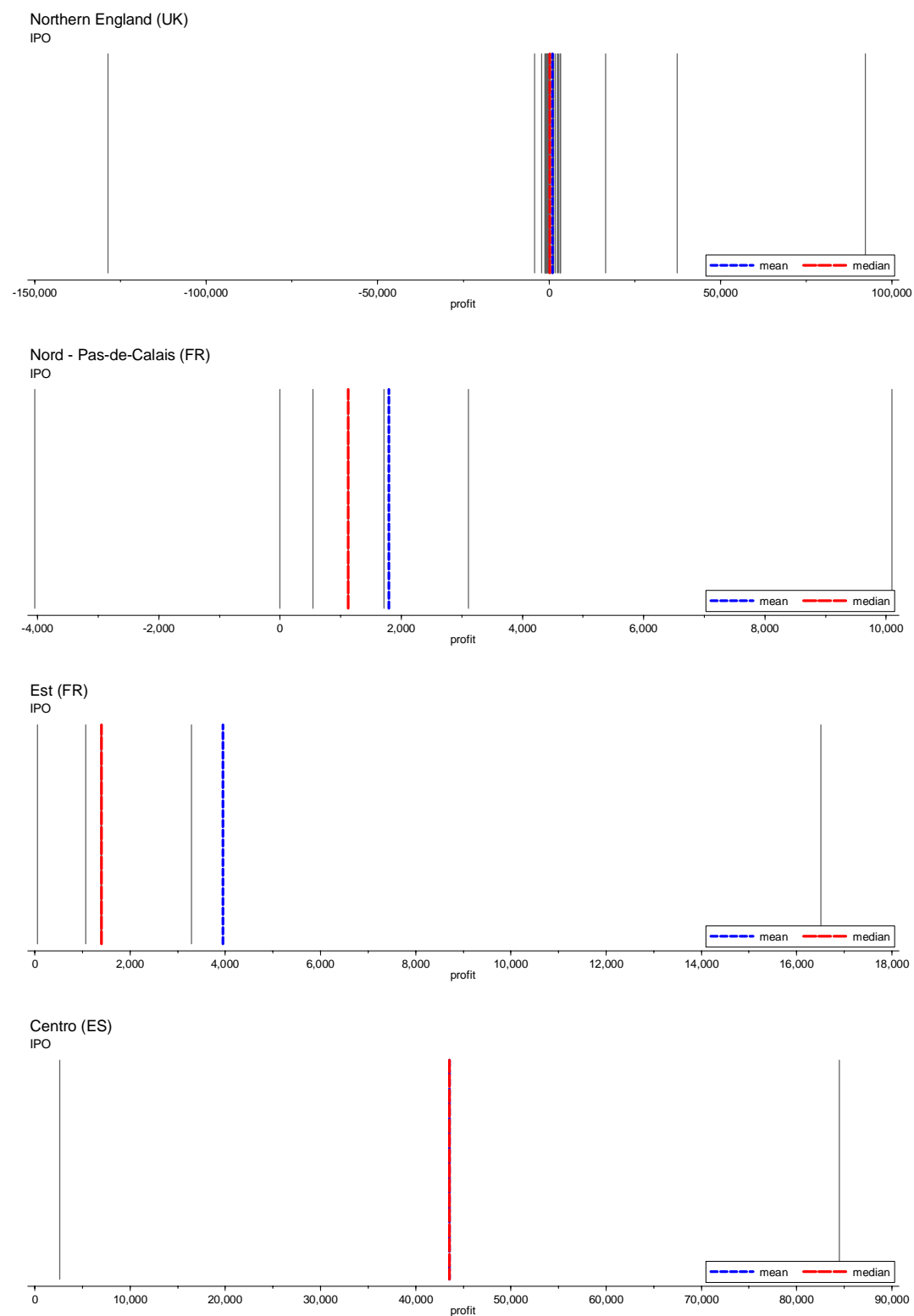


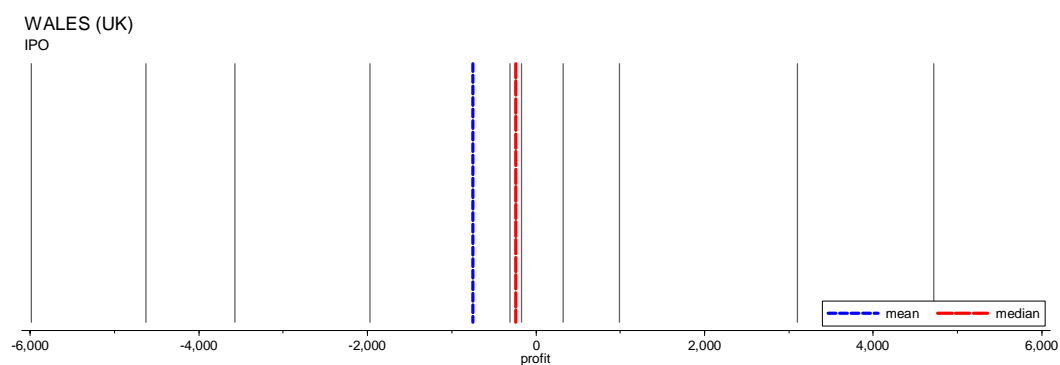
Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

Figure 81: Distribution of annual profits, IPOs (1997-2008)



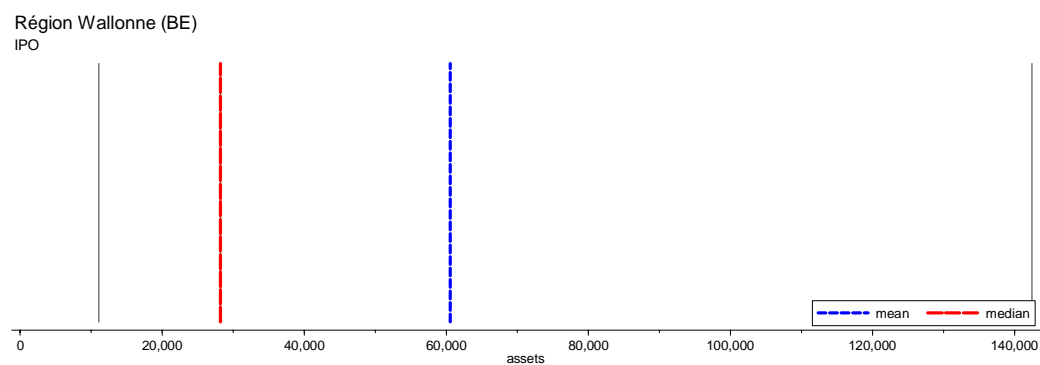
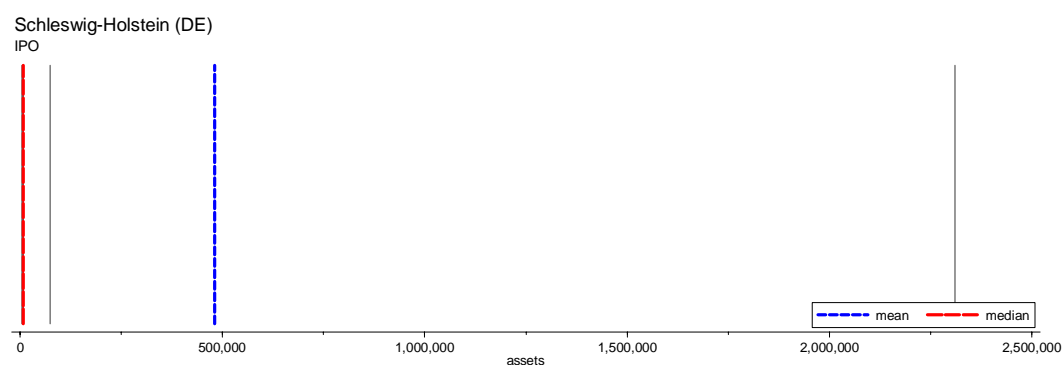


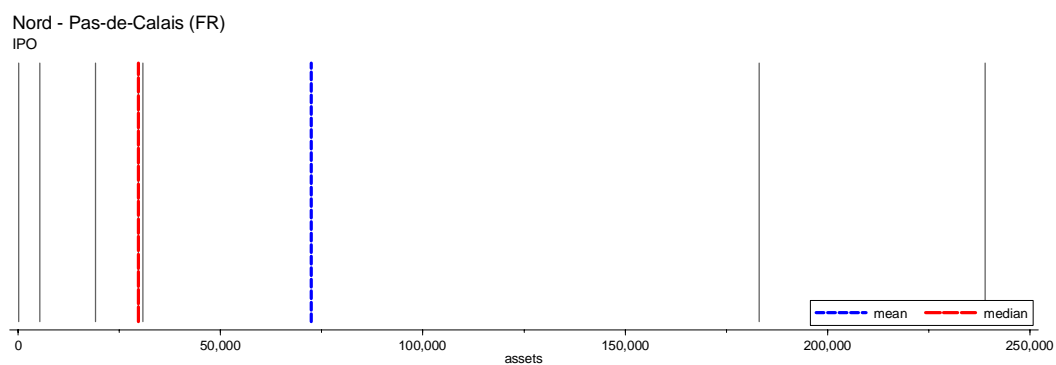
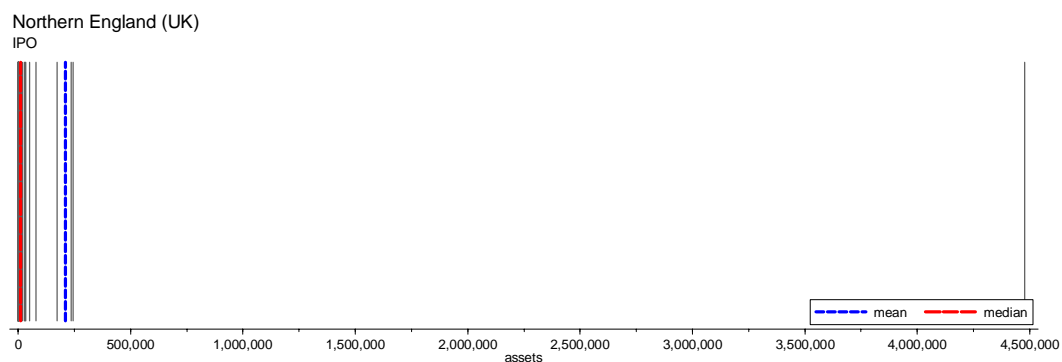
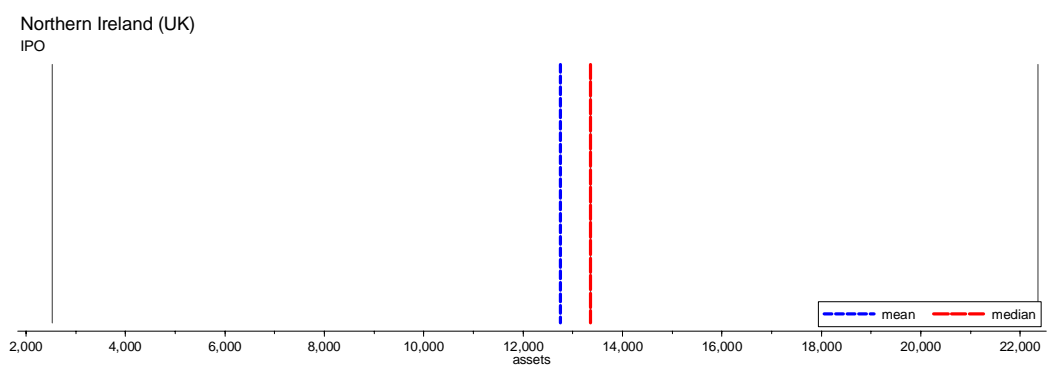
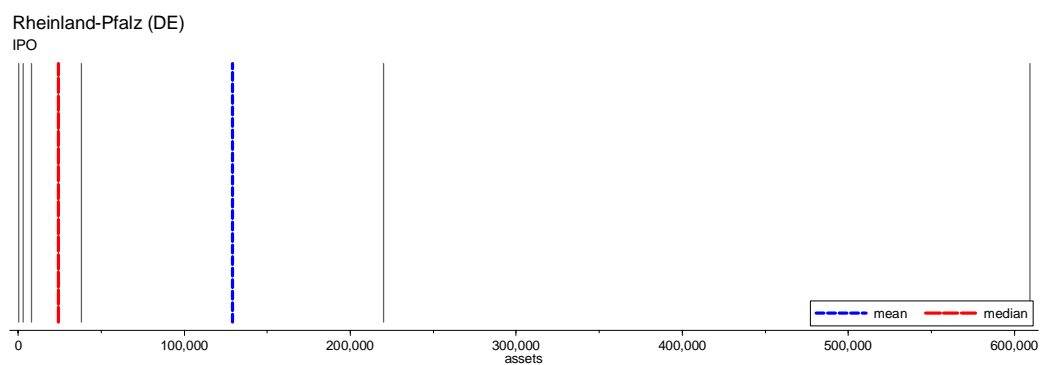


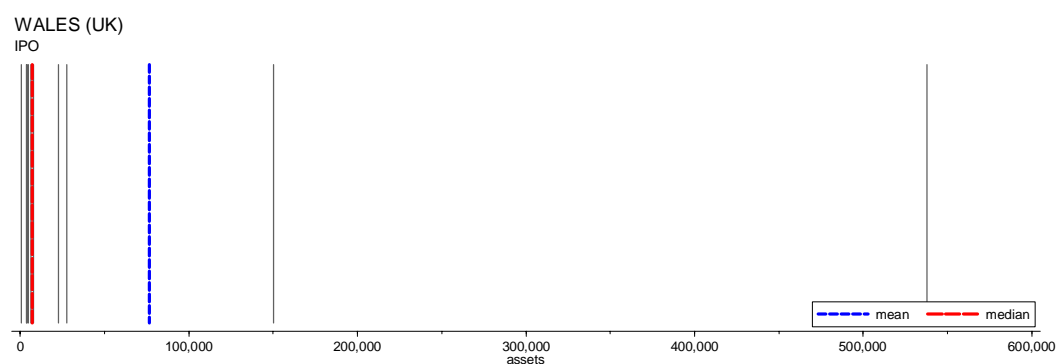
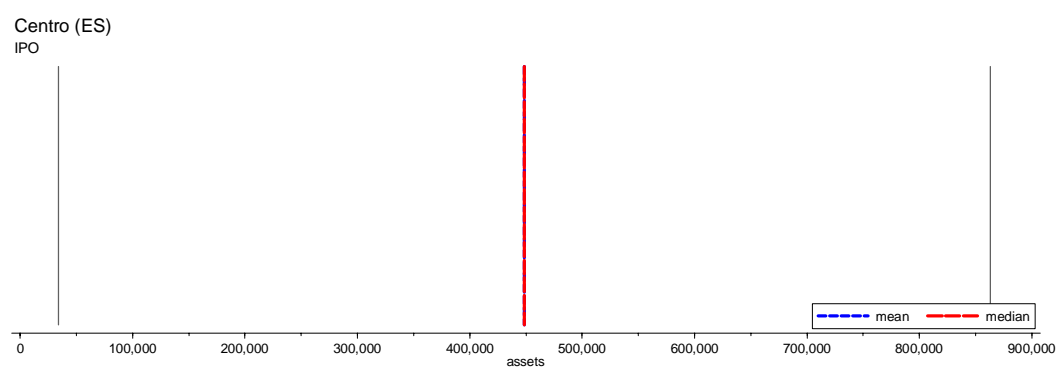
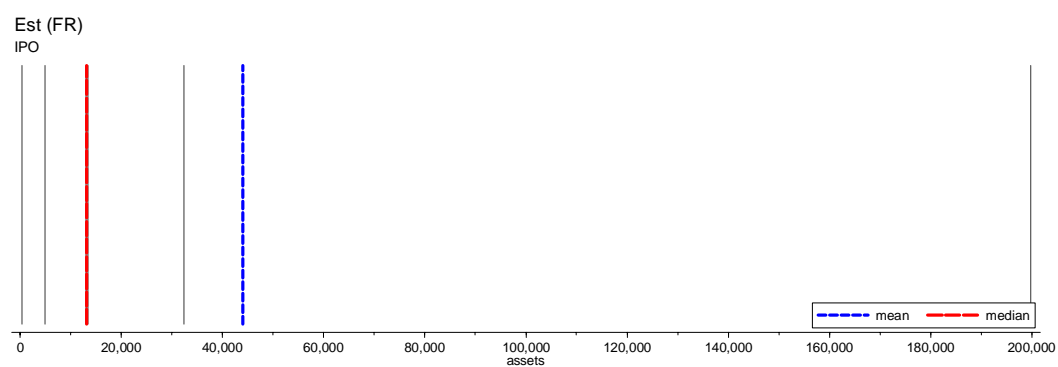
Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

Figure 82: Distribution of assets, IPOs (1997-2008)



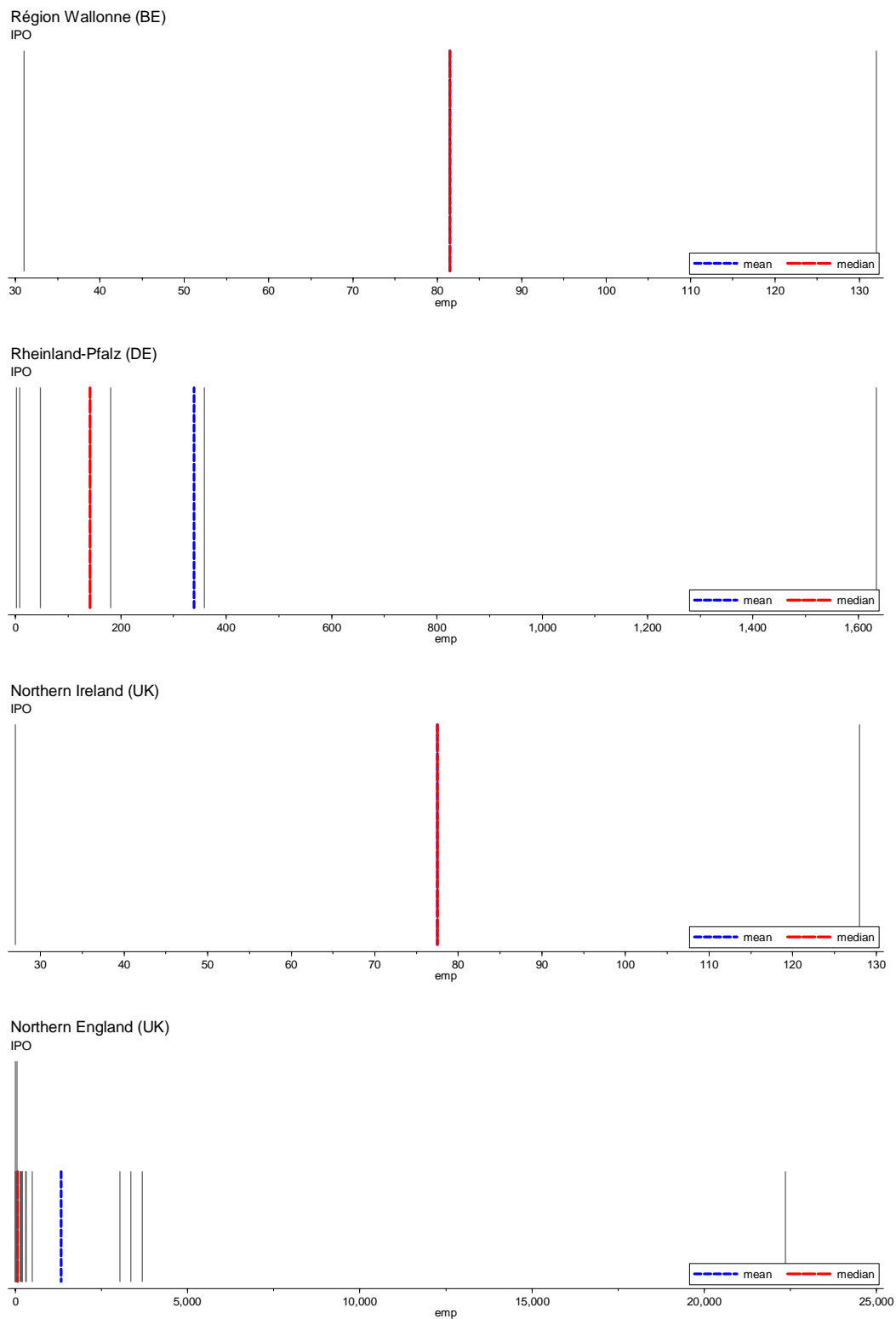


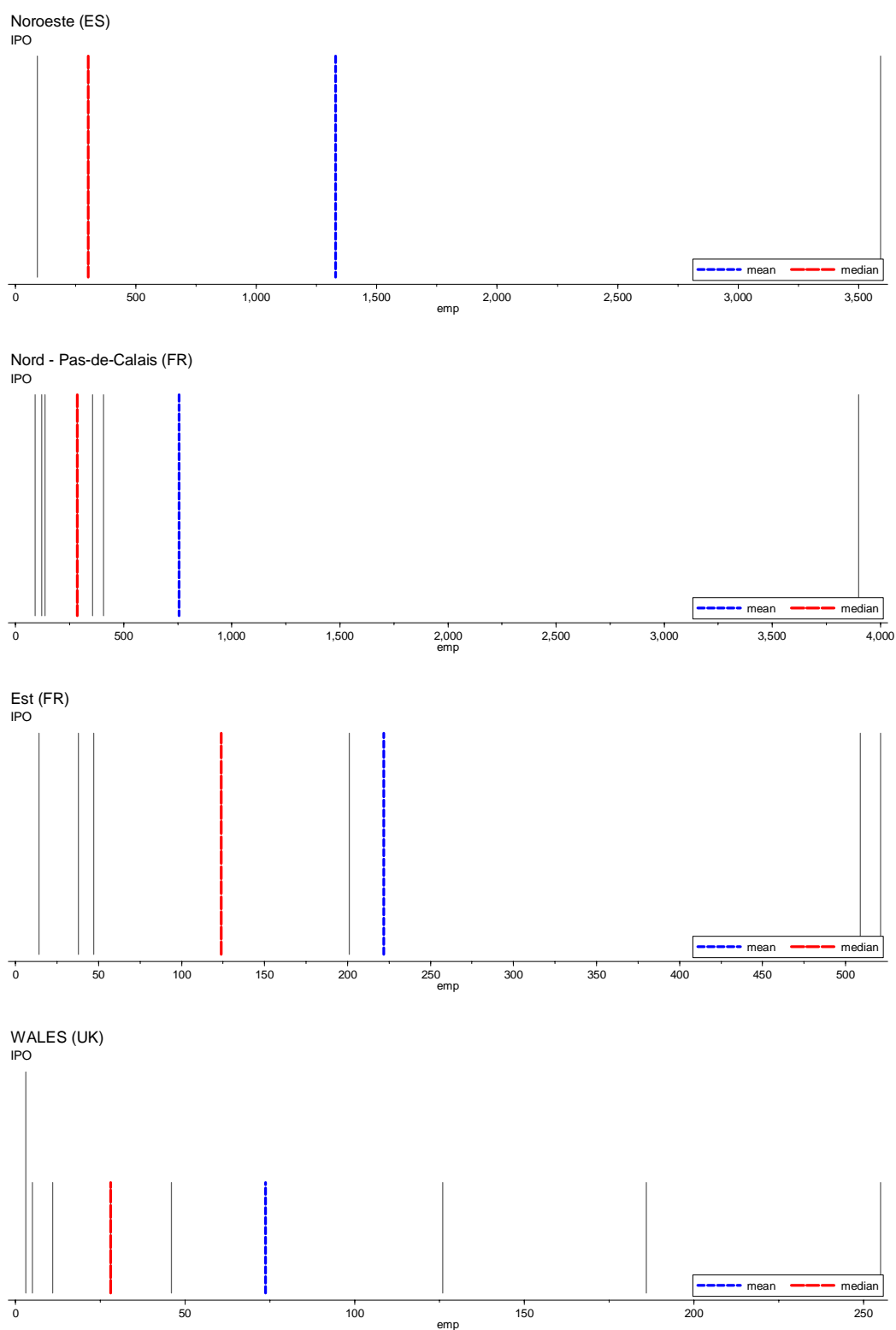


Note: in € 000s. Regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).

Figure 83: Distribution of employee numbers, IPOs (1997-2008)





Note: regions with one or no recorded values omitted.

Source: Bureau van Dijk (ZEPHYR).



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