

# SMEs in Ireland: Contributions, Credit and Economic Crisis.

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## Abstract

The Small and Medium Enterprise (SME) segment is regarded as an important contributor to sustainable economic and employment recovery due to their largely indigenous, employment-intensive nature. The recent economic, financial and employment crisis has been particularly sharply felt in this segment of the Irish economy. Taking a wide range of indicators from firm production and bank lending data, this paper examines the structure of the SME sector through the pre and post-crisis period. This highlights the central contribution of SMEs to employment and job creation, with an emphasis on the role of indigenous, non-exporting firms. Descriptive evidence on the misallocation of credit in the run-up to the 2008 crisis, along with a reallocation of lending away from those sectors with highest pre-2008 credit accumulation is also presented.

**Keywords:** SME, Credit, Employment, Financial Stability, Ireland, Deleveraging, Exports.

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# 1 Introduction

From “Celtic Tiger” to international bailout, the Irish economy was particularly hard hit by the global financial crisis from late 2007. Between the first quarter of 2008 and the fourth quarter of 2010, real GDP and real GNP fell by 10.3 and 10.9 per cent respectively, GNP at current market prices fell by 17.5 per cent, while unemployment rose from 4.8 to 14.8 per cent over the same time period. The export sector, dominated by multinational enterprises, proved reasonably resilient to the downturn. In contrast, small and medium enterprises (SMEs) were particularly exposed to the deterioration in economic and credit conditions due to their largely indigenous, non-exporting and employment-intensive nature.

Taking a wide range of indicators from firm production and bank lending data, this article examines the structure of the SME sector at the beginning of the crisis period along with the evolution of credit allocation pre and post-crisis. This highlights the central contribution of SMEs to employment and job creation, and provides descriptive evidence of the link between high levels of borrowing during the boom years and current poor loan performance.

We begin by examining the importance of SMEs in the Irish economy. SMEs account for 72 per cent of private sector employment outside of construction and agriculture, with 63 per cent working in indigenous SMEs. We highlight the reliance of private sector employment in Ireland on domestic demand: 64 per cent of private sector workers are shown to work for indigenous non-exporting firms, with 57 per cent working for indigenous non-exporting SMEs. In terms of job creation, SMEs are shown to be more dynamic than larger firms, in that they both create and destroy jobs at a higher rate.

We then look at credit stocks and flows of new lending to SMEs across sectors of activity. In 2011 the credit market appears to be rebalancing, with sectors associated with the credit boom now receiving disproportionately low shares of new lending. Deleveraging<sup>1</sup> is also shown to be occurring at a higher rate in these sectors.

We describe the current and historical allocation of credit to the private sector highlighting those sectors with high credit concentrations. Studies have analysed the optimal allocation of credit across sectors, although such a calculation is beyond the scope of this article.<sup>2</sup> The main patterns that emerge from the data do suggest that the Irish credit market had become extremely over-concentrated in the Real Estate, Construction, Hotels & Restaurants sectors by the end of the boom in 2008, and that in looking at current credit stock levels, a degree of reallocation is still required to place credit allocation on a more stable path.

This article has drawn together data from a disparate range of sources to provide a broad picture of the Irish private economy and SME segment in particular. A novel contribution of the article is to highlight the importance of domestic demand for employment, and to a lesser extent investment and GVA. These findings highlight the importance of focusing on both domestic as well as export-led

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<sup>1</sup>Defined as negative net transactions, which includes new lending, write downs of debt, asset disposals and debt being paid off.

<sup>2</sup>In a recent article Battilossi, Gigliobianco, and Marinelli (2011) use Italian bank data to investigate the optimality of credit allocation in the Italian economy in an effort to examine the role of sectoral credit allocation to the interaction between financial development and economic growth.

recovery, particularly where the employment crisis is concerned.

The article proceeds as follows: Section 2 provides a short overview of industrial policy towards SMEs in Ireland; Section 3 provides a description of data; in Section 4 we highlight the role of SMEs and internationalised firms in employment, exports, domestic sales, wage bills and investment; describe SMEs' contribution to job creation and destruction; illustrate the sectoral distribution of SMEs by employment and credit including the allocation of credit stocks, new lending and deleveraging over time; Section 5 concludes.

## 2 Policy Context

A body of research examining the evolution of policies towards both SMEs and the internationalised sector in Ireland establishes the policy context for this work. Andreosso-O'Callaghan and Lenihan (2006) provide a useful overview of industrial policy in Ireland and the role of SMEs in particular. Irish industrial policy has had a focus on inward foreign direct investment (FDI) since the first comprehensive plan, Department of Finance (1958). However, official policy has moved to encouraging the role of domestic enterprise and national competitiveness in recent decades. Sustained competitiveness would help to ensure Ireland's strategic importance as an FDI destination while (it was hoped that) promoting the role of domestic enterprise would develop the domestic private sector and encourage linkages between foreign and domestic firms. Apart from employment generation and growth objectives, it was expected domestic-foreign linkages would further embed foreign firms in Ireland whilst domestic firms would benefit from technology transfers as well as from meeting demand from these firms for inputs and/or support services. Culliton (1992) formalised this policy through a series of recommendations which resulted in a rationalisation of the Industrial Development Authority (IDA) and Forfás and the development of a domestic culture that recognised the importance of providing a competitive environment for the private sector. By the 1990s this environment in Ireland was characterised by an attractive corporation tax framework, provision of a skilled domestic labour force with moderated wage demands, infrastructure development and a pro-business institutional environment. Finally, with the establishment of a task force on the subject, the Government explicitly noted the importance of SMEs in Ireland, particularly in employment and growth generation (Andreosso-O'Callaghan and Lenihan, 2006).

Despite the policy focus on linkages to the exporting sector, reflected in the literature, data in this article will show that the vast majority of indigenous employment (which makes up 78 per cent of private sector employment) is still accounted for by traditional sectors such as Hotels & Restaurants, Wholesale & Retail, Business & Administrative services and Transport & Storage. These figures suggest that, while export growth and export linkages are vital to modernisation and growth strategies, the role of the typical domestic-demand driven services economy must not be overlooked when contemplating strategies for employment creation.

In evaluating across European countries, European Commission (2011) compares Ireland favourably with the EU average on seven out of nine characteristics of the national institutional environment affecting SMEs, including fostering and rewarding entrepreneurial spirit and ease of doing business. On two criteria Ireland performed below the EU average, namely, access to finance and aligning

domestic single market legislation with EU legislation. It also notes that in 2010 and early 2011 the policy focus in Ireland was on “access to finance, reducing the administrative burden and facilitating SMEs’ access to public procurement contracts” (European Commission, 2011, p.3).

### 3 SMEs in Ireland

#### Defining SMEs

SMEs are defined variously in terms of employment, turnover and asset thresholds. The preferred definition in this article, and one often used by Eurostat, relates to employment. We define micro firms as those with less than 10 employees, small firms with between 10 and 49, medium-sized firms with between 50 and 249 and large firms with over 249 employees. The lending and credit data presented in the article from the Central Bank of Ireland and the Credit Review Office data use a combination of employment (<250 employees), turnover (<€50m) and balance sheet (<€43m) criteria to define SMEs.

In Ireland SMEs are located in all sectors of the economy. Here (where data allow) we examine 10 sectors: Primary Industries (Agriculture, Forestry and Fisheries and Mining); Industry (Manufacturing, Energy and Water); Construction; Wholesale/Retail Trade and Repairs; Transport and Storage; Hotels and Restaurants; Information and Communication; Real Estate Activities; Business and Administrative Services; Professional Services and Education, Human Health and Social Work and Other Community, Social and Personal Services.

#### The Data

In characterising the importance of SMEs to the economy, we collate data from the following sources:

- *Census of Industrial Production (Census of Industrial Production (CIP))*. This is a confidential firm-level dataset from the CSO. All manufacturing enterprises with more than 3 employees are included, with data for 2009 being the most recently available.
- *Annual Services Inquiry (Annual Services Inquiry (ASI))*. This is another confidential firm-level dataset from the CSO. It comprises a sample of 15,000 or so non-financial services and distribution firms with grossing factors used to estimate totals for the 122,000 firms operating in services and distribution, with 2008 data being the most recent.
- *Forfás Annual Employment Survey*. This survey samples firms with relationships with either Enterprise Ireland or IDA Ireland. Where sectors have low internationalisation these data will have poor coverage. This data provides information up to 2010 on employment, job creation and job destruction at the firm level.
- Central Bank of Ireland *Money and Banking Statistics* lending data. These data report lending for the private non-financial corporations (NFCs) sector from 2003 and the SME sector from 2010q4. Information is available on three lending measures: the stock of outstanding credit in a quarter; gross new lending, which is cleaned to eliminate restructurings and reclassifications,

and closely matches truly new transactions aimed to finance working capital and investments; transactions, or net flows, which are the underlying changes in lending as a result of draw-downs minus repayments over the quarter, abstracting from other non-business related factors which can impact on reported stocks (e.g. revaluation and reclassification adjustments and/or loan sales or transfers).<sup>3</sup>

## 4 The Role of SMEs

In this section we provide a detailed profile of Irish private sector economic activity and highlight the importance of SMEs therein.

### Real Economy Impact

All tables and figures in this subsection refer to data for 2009 and 2008. As is often the case, micro-level data availability is unfortunately subject to a long lag. While this may pose some concerns given the enormous decline in output that has taken place between 2008/09 and the current period, there is reason to believe that these figures are relevant today. Firstly, the figures relate to phenomena that are inherently structural such as the share of employment, investment or sales accounted for by exporters, indigenous firms and multinationals. These are characteristics of the economy which are not expected to change dramatically over a two to three year horizon. Confirming this, Table 10 in Section 3.2 reports that, within a given size category, the job destruction rates in 2008-10 were similar for Irish and foreign-owned firms. One potential shift from 2009-12 is that job losses are more likely to have come from small rather than large firms, as evidenced again by the larger net destruction rates for micro, small and medium firms in Table 10. This suggests that SMEs' importance in overall employment is likely to have fallen marginally since the time period on which tables in this subsection was based. Given that the differential between job destruction rates in SMEs versus large firms was between 4 and 7 per cent, it is not expected that the key messages of this section are diminished to any great extent by post-2009 changes.

Table 1 reports the number of enterprises in the data that fall into each category. This data does not include sole traders and firms with under three employees in manufacturing, and thus cannot be seen to truly represent the population of firms in manufacturing. Given that most missing firms in manufacturing are micro firms, we can conclude that overall, micro firms account for much larger than the 55 per cent reported in the table. Indeed, [Central Statistics Office \(2012\)](#) report that SMEs account for over 99.8 per cent of establishments in Ireland.

To examine how employment is distributed across firm types, Table 2 describes total employment in manufacturing and services firms (or more precisely, the non-farm, non-construction, non-financial private sector). We observe that SMEs account for 72 per cent of employment in the private sector, while they account for 82 per cent of the 933,768 workers employed in the indigenous economy. Of note is the fact that, despite Ireland's reputation as one of the world's most globalised economies, fully 64 per cent of private sector workers are employed by indigenous non-exporting firms, with 56

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<sup>3</sup>See [Central Bank of Ireland \(2010\)](#) for a detailed description of the Central Bank of Ireland lending data.

Table 1: *Number of enterprises in each dataset, share of total.*

	Manuf. (2009)		Services (2008)	
Micro	2,760	0.55	106,550	0.87
Small	1,587	0.32	12,999	0.11
Medium	534	0.11	2,245	0.02
Large	148	0.03	297	0.00
Total	5,029		122,091	

Source: Census of Industrial Production, (2009) and Annual Services Inquiry (2008).

per cent working for indigenous, non-exporting SMEs.<sup>4</sup> These statistics highlight the importance of domestic demand for employment generation, and suggest that an export-led recovery may not be a panacea for the Irish unemployment crisis.

Table 2: *Services and Manufacturing, Share of Employment by Ownership, Export Status and Size.*

	Irish Non-Exporter	Irish Exporter	Foreign Non-Exporter	Foreign Exporter	Total
Micro	0.234	0.006	0.004	0.001	0.245
Small	0.203	0.031	0.010	0.007	0.252
Medium	0.127	0.041	0.023	0.029	0.219
Large	0.075	0.066	0.074	0.069	0.284
Total	0.639	0.143	0.111	0.107	1

Sources: Census of Industrial Production, (2009) and Annual Services Inquiry (2008).

Note: Total employees is 1,192,875.

Table 2 is repeated for other variables of interest. In Table 3, Gross Value Added (GVA) is reported. It is clear that in terms of this measure of output, neither SMEs nor indigenous non-exporters are as important as they are for employment. Multinational exporters, accounting for 11 per cent of employment, make up 38 per cent of GVA. Indigenous non-exporters, on the other hand, while accounting for 64 per cent of employment, appear much less important in GVA, with 33 per cent of the total. The SME total of 52 per cent is also significantly lower than their 72 per cent share in employment.

As a chief determinant of economic growth, a detailed depiction of the sources of aggregate investment is provided in Table 4. Similar to GVA, SMEs are shown to account for 52 per cent of total investment in the private sector. The composition in terms of internationalisation is less similar to that for GVA, however, with Irish firms, both non-exporters and exporters, having a 64 per cent share, as opposed to 50 per cent share in GVA. This suggests that flat domestic demand

<sup>4</sup>It is noted that certain employment in the indigenous non-exporting sector may be related to activities linked to the exporting sector and particularly in supplying inputs to multinational firms (“backward linkages to FDP”). Figure 1 shows that over half of all employees in the data work in three sectors which are not heavily associated with such activity: Accommodation and Food Services, Business and Administrative Services and Wholesale & Retail. Furthermore, firms categorised as “exporters” in our data are those that export at least 1 per cent of their total output. This suggests that the share of employment related to *domestic sales* as opposed to indigenous firms *uniquely serving* the domestic market is even higher than the 64 per cent reported.

Table 3: *Services and Manufacturing, Share of Gross Value Added by Ownership, Export Status and Size.*

	Irish Non-Exporter	Irish Exporter	Foreign Non-Exporter	Foreign Exporter	Total
Micro	0.112	0.008	0.010	0.003	0.133
Small	0.106	0.027	0.040	0.010	0.183
Medium	0.063	0.040	0.027	0.074	0.205
Large	0.047	0.090	0.052	0.290	0.480
Total	0.329	0.165	0.129	0.377	1

Sources: Census of Industrial Production, Annual Services Inquiry (2008).

Note: Total GVA is €88.4bn.

is likely to be having a large impact on aggregate investment, regardless of the performance of the exporting sector.

Table 4: *Services and Manufacturing, Share of Investment by Ownership, Export Status and Size.*

	Irish Non-Exporter	Irish Exporter	Foreign Non-Exporter	Foreign Exporter	Total
Micro	0.109	0.001	0.007	0.000	0.117
Small	0.092	0.024	0.110	0.006	0.232
Medium	0.084	0.035	0.024	0.032	0.174
Large	0.107	0.180	0.066	0.123	0.476
Total	0.392	0.241	0.206	0.162	1

Sources: Census of Industrial Production, Annual Services Inquiry (2008).

Note: Total Investment is €15.4bn.

Finally, Table 5 provides a breakdown of exports. The table is narrower in this case, as both the indigenous and foreign-owned non-exporter categories are redundant. SMEs are shown to account for 26 per cent of the €110bn of exports recorded in the data in 2008, with indigenous firms accounting for just 14 per cent and Irish-owned SMEs accounting for just 7 per cent. This presents an entirely different picture to that for employment in Table 2.

Up to this point, the data have shown that SMEs contribute heavily to activity in the real economy. These figures can be thought of as measures of the economic weight of SMEs. Table 6 indicates that despite clear evidence that SMEs are an extremely large component of the real economy, it is large firms that most likely employ more productive workers. For all categories apart from foreign services firms, wage per worker is shown to increase incrementally as firm size increases. The extremely high average wage in micro and small foreign services firms could stem from the very small sample sizes in these categories, allowing some particularly small niche high-end producers to skew the figure upwards.

The CSO data also allow a breakdown by sector. The following tables portray the distribution of economic activity across sectors of activity. The manufacturing sector data allows a granular approach, with 15 subsectors identified: Basic Metals; Chemical, Rubber, Plastic and Minerals;

Table 5: *Services and Manufacturing, Share of Exports by Ownership and Size.*

	Irish	Foreign	Total
Micro	0.008	0.007	0.015
Small	0.023	0.026	0.049
Medium	0.048	0.147	0.196
Large	0.067	0.673	0.740
Total	0.146	0.854	1

*Sources:* Census of Industrial Production, Annual Services Inquiry (2008).

Note: Total Export Figure is €109.5bn.

Table 6: *Average wages, €000.*

	Manufacturing		Services	
	Irish	Foreign	Irish	Foreign
Micro	35	42	30	65
Small	36	51	32	62
Medium	41	52	31	56
Large	48	63	36	41

*Sources:* Census of Industrial Production, (2009) and Annual Services Inquiry (2008).

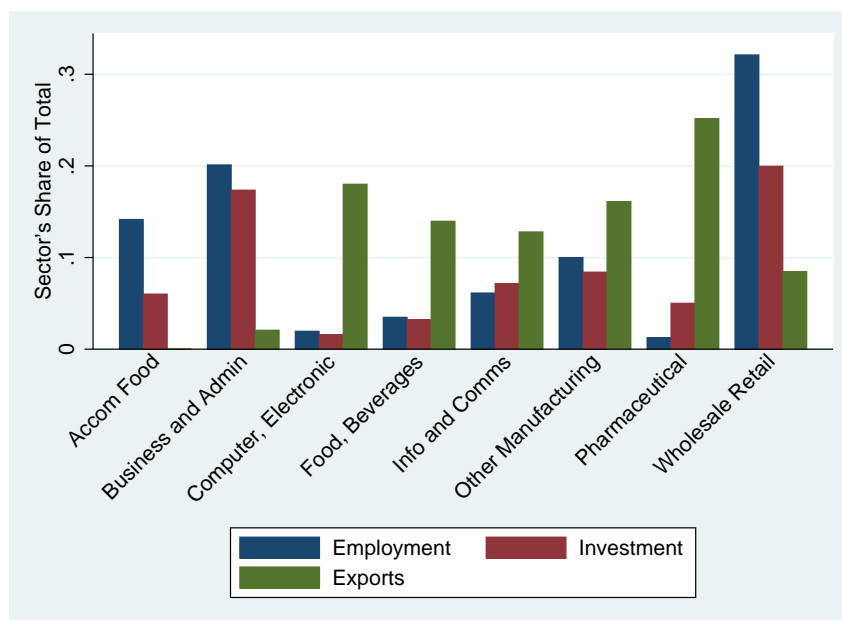
Computer and Electronic; Electrical Equipment; Electricity and Gas; Fabricated Metal; Food and Beverages; Machinery and Equipment; Mining and Quarrying; Other Manufacturing; Pharmaceutical; Textiles and Leather; Tobacco, Petroleum and Furniture; Water and Sewerage; Wood, Pulp, Paper, Printing. The other sectors broadly match NACE Rev. 2 services sectors: Business and Administrative Services; Information and Communication; Real Estate; Transport and Storage; Wholesale and Retail. Due to confidentiality issues in some sectors, these tables do not explicitly deal with SMEs, but rather act as an introduction to further research in Sections 4 and 4 on the distribution of bank credit across sectors of activity.

Figure 1 reports each sector's share of employment, investment and exports in the total volume accounted for in the data. The largest sectors in terms of employment are the services sectors such as Wholesale & Retail, Business & Administrative Services and Accommodation & Food Services sectors. For investment, the Wholesale & Retail and Business & Administrative Services sectors are particularly important. In terms of exports, the four largest sectors are Pharmaceutical (25 per cent), Computer & Electronic (18 per cent), Food & Beverages (14 per cent) and Information & Communication services (13 per cent), along with a combined category of "Other Manufacturing".<sup>5</sup> Of note is the large mismatch between employment intensity and export intensity of sectors. The sectors of the Irish economy that account for the largest shares of exports are all sectors with relatively small employment shares. This mismatch is crucial when observing trends in GDP and

<sup>5</sup>Other Manufacturing includes Basic Metals; Chemicals, Rubber, Plastic, Minerals; Electrical Equipment; Fabricated Metal; Machinery and Equipment; Mining and Quarrying; Other Manufacturing; Textile and Leather; Tobacco, Petroleum, Furniture; Wood, Pulp, Paper, Printing.



Figure 1: Sectors' share in total employment, investment and exports, 2008-09.



export growth.

Figure 2 reports the share of employment, investment and exports accounted for by Irish-owned firms in each sector. An entry for the total across all sectors is also included in this graph, from which it is evident that Irish-owned enterprises, while accounting for three quarters of employment, are under-represented in total investment, and make a particularly small contribution to total exports (14 per cent). The sectors in which Irish firms are most important are generally the domestically-oriented services sectors such as Accommodation and Food services, Business and Administrative services, and Wholesale and Retail. One notable exception however is the Food and Beverage sector, where Irish firms account for 80 per cent of employment, but only 20 per cent of exports.

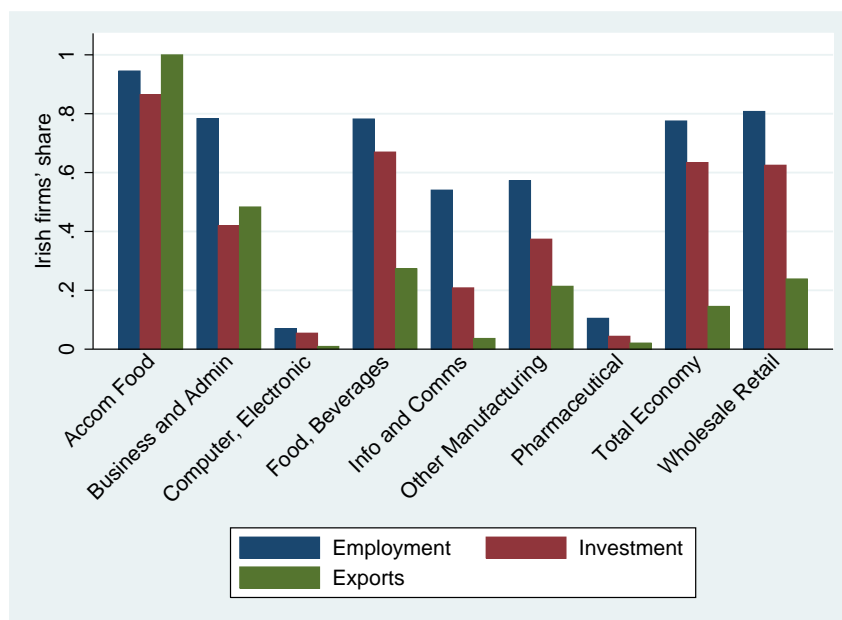
Overall the structure of the Irish private economy is one of stark dichotomy between a low-employment, high-exporting sector, dominated by multinational firms, and a high-employment, low exporting, mostly Irish owned component. It is this latter segment of the economy where small and medium enterprises are more prevalent, and where weak domestic demand will cause most difficulties.

## SMEs and Job Turnover

We have already seen that SMEs account for a large proportion of overall employment in the economy. This section decomposes the employment story further, by looking at the rates at employment growth across firm size groups and compare the rate at which these groups create and shed jobs.

The job flow measures we use are defined following [Davis and Haltiwanger \(1999\)](#). Job creation at time  $t$  is the employment gain summed over all business units that expand or set-up between  $t-1$  and  $t$ . Job destruction at time  $t$  is the employment loss summed over all business units that contract

Figure 2: Irish firms' share in sector employment, investment and exports, 2008-09.



or shut down between  $t-1$  and  $t$ . Net employment change is defined as the difference between job creation and job destruction.

Comparisons of job flows can be made more convenient by converting these measures into rates. In order to do this, the job flows literature uses a variant on the ordinary growth rate by defining the growth rate of the firm (or sector etc.) as the change in employment between  $t-1$  and  $t$  divided by the average of employment in  $t-1$  and  $t$ .<sup>6</sup>

One reason to look at job turnover rates, in addition to the net changes in employment, is that they can be used to obtain additional information on employment dynamics, and give a better indication of the amount of change the economy is undergoing. The same net employment change may reflect very different rates of creation and destruction thereby masking an important element of the flexibility or volatility of the labour market (Konings, 1995).

The job turnover measures are calculated using the Forfás Employment Survey. This survey tracks employment levels and has been carried out on an annual basis since 1972, covering agency-supported firms engaged in manufacturing and internationally traded services.<sup>7</sup> The survey collects numbers of permanent full-time employees, along with some descriptive information on the sector the firm operates in, ownership and location.<sup>8</sup> Lawless and Murphy (2008) and Lawless (2012) examine various elements of this data over time, and in this article we focus on how the turnover rates vary between SMEs and larger firms.

<sup>6</sup>The reason for this adjustment is that it gives a growth rate which is symmetric around zero and which lies within a closed interval  $[-2, 2]$ , thereby allowing an integrated analysis of entry and exit.

<sup>7</sup>As a consequence of the survey's design, sectors with low internationalisation will have poor coverage.

<sup>8</sup>The survey covers 10,000 firms, on average, each year with 70 per cent of firms reporting at least 20 employees. Most sectors are well represented, with the exception of Hotels and Restaurants where between 60 and 70 firms participate in the survey each year.

Table 7 shows the job creation (JC), job destruction (JD) and net employment changes in the four firm size groups over the past decade. There is a clear relationship between the amount of labour turnover and the size of the firm, with smaller firms consistently both creating and destroying jobs at a higher rate than larger firms. This is particularly marked for the micro firms, where we see very considerable levels of job churn, even when the net employment position is almost unchanged in 2000-2004 and 2005-2007.

Table 7: *Job Creation, Destruction and Net Employment Change.*

	2000-2004			2005-2007			2008-10		
	JC	JD	Net	JC	JD	Net	JC	JD	Net
Micro	0.20	0.22	-0.01	0.20	0.19	0.01	0.18	0.24	-0.06
Small	0.12	0.13	-0.01	0.14	0.11	0.03	0.08	0.17	-0.08
Medium	0.10	0.10	0.00	0.10	0.08	0.02	0.06	0.12	-0.06
Large	0.07	0.06	0.01	0.07	0.04	0.03	0.04	0.07	-0.02

Source: Annual Employment Survey (2010).

Despite the variance across firm size groups in terms of job turnover, the net employment changes were not dissimilar over the two earlier periods that we highlight in Table 7. Both small and large firms grew at 3 per cent on average each year from 2005 to 2007, while micro and medium firms grew at an average annual rate of 1 per cent and 2 per cent respectively. The more recent period, however, shows a divergence in growth rates with SMEs being more affected by the economic downturn than large firms. Small firms had the greatest decline in employment in 2008-2010, losing 8 per cent of jobs on average, with micro and medium firms also reducing employment considerably. Large firms experienced an average employment fall of 2 per cent each year, which is also significant but shows greater resilience than the SME group.

Looking at job turnover rates for all firms across sectors in Table 8, we see that simultaneous creation and destruction of jobs is the norm. The 2008-2010 period shows the net falls in employment that occurred across most sectors were due to a combination of falls in the job creation rate and increases in the job destruction rate. The Construction sector, as one would expect, was the hardest hit, but large falls are also observed in sectors such as Manufacturing and Wholesale and Retail Trade. Table 9 looks more closely at the crisis period and breaks the sectoral patterns down by firm size (where for brevity we combine the small and medium groups). The overall picture is one in which the smallest firms experience larger increases in their job destruction rates, although there is heterogeneity across sectors.

Table 10 looks at how the patterns of job turnover differ by firm ownership. In general, foreign firms exhibit higher levels of job turnover than Irish firms, tending to both create and destroy jobs at higher rates. Employment growth in foreign-owned firms throughout the early and mid-2000s was mainly accounted for by large firms, with foreign SMEs experiencing a net fall. Irish firms, on the other hand, grew steadily on net and particularly in the period 2005-2007. The 2008-10 downturn affected employment in all groups, with the turnaround in performance being particularly marked for Irish small and medium sized firms. Irish small and medium firms show a reverse from growth rates of 4 per cent in 2005-07 to a net decline of 9 per cent in 2008-10 for small firms and to -6 per

Table 8: *Job Creation, Destruction and Net Employment Change by Sector.*

	2000-2004			2005-2007			2008-10		
	JC	JD	Net	JC	JD	Net	JC	JD	Net
Agriculture, food	0.11	0.10	0.00	0.12	0.08	0.04	0.09	0.17	-0.08
Business services	0.19	0.08	0.11	0.21	0.07	0.14	0.10	0.12	-0.01
Community services	0.23	0.16	0.07	0.19	0.12	0.08	0.15	0.16	-0.01
Construction	0.20	0.03	0.17	0.11	0.03	0.08	0.04	0.23	-0.19
Education	0.21	0.11	0.10	0.19	0.08	0.11	0.11	0.09	0.03
Electricity, gas	0.51	0.14	0.37	0.28	0.04	0.24	0.19	0.09	0.10
Financial intermediation	0.20	0.07	0.13	0.18	0.03	0.15	0.08	0.08	0.00
Health	0.21	0.10	0.11	0.18	0.06	0.12	0.14	0.10	0.04
Hotels, restaurants	0.12	0.13	-0.02	0.27	0.13	0.15	0.18	0.11	0.07
Information	0.14	0.11	0.03	0.13	0.10	0.03	0.10	0.11	-0.02
Manufacturing	0.08	0.09	-0.02	0.08	0.08	0.00	0.05	0.12	-0.07
Transport	0.16	0.08	0.08	0.12	0.18	-0.06	0.16	0.08	0.08
Water	0.31	0.07	0.24	0.26	0.02	0.24	0.10	0.05	0.05
Wholesale, retail, repair	0.09	0.07	0.02	0.10	0.06	0.04	0.06	0.16	-0.10

Source: Annual Employment Survey (2010).

Table 9: *Job Turnover by Sector and Size in the Crisis.*

	Micro			Small & Medium		
	JC	JD	Net	JC	JD	Net
	2008-2010					
Agriculture, food	0.16	0.29	-0.12	0.08	0.15	-0.07
Business services	0.28	0.21	0.07	0.10	0.15	-0.05
Community services	0.19	0.21	-0.02	0.08	0.08	0.00
Construction	0.39	0.26	0.13	0.04	0.21	-0.16
Education	0.23	0.17	0.06	0.09	0.07	0.02
Electricity, gas	0.61	0.24	0.37	0.14	0.07	0.07
Financial intermediation	0.26	0.26	0.00	0.09	0.08	0.01
Health	0.25	0.29	-0.03	0.12	0.06	0.06
Hotels, restaurants	0.25	0.24	0.01	0.16	0.09	0.07
Information	0.25	0.21	0.05	0.11	0.12	-0.01
Manufacturing	0.12	0.26	-0.14	0.05	0.15	-0.10
Transport	0.17	0.21	-0.04	0.14	0.10	0.04
Water	0.32	0.29	0.03	0.12	0.04	0.07
Wholesale, retail, repair	0.20	0.16	0.04	0.05	0.16	-0.11

Source: Annual Employment Survey (2010).

cent for medium firms. This was a combination of job creation rates almost halving for both these groups along with a marked increase in the job destruction rate. For micro firms, the rate of job creation fell less dramatically and the net reduction in employment can be attributed mainly to an increase in job destruction.

Table 10: *Job Turnover by Ownership and Size.*

		Foreign Owned			Irish Owned		
		JC	JD	Net	JC	JD	Net
Micro	2000-2004	0.26	0.34	-0.08	0.20	0.20	-0.01
	2005-2007	0.28	0.28	0.00	0.20	0.18	0.01
	2008-2010	0.22	0.31	-0.09	0.18	0.23	-0.05
Small	2000-2004	0.16	0.19	-0.03	0.12	0.12	0.00
	2005-2007	0.15	0.16	-0.01	0.14	0.10	0.04
	2008-2010	0.12	0.18	-0.06	0.07	0.16	-0.09
Medium	2000-2004	0.11	0.12	-0.01	0.09	0.08	0.01
	2005-2007	0.09	0.10	-0.01	0.10	0.07	0.04
	2008-2010	0.07	0.12	-0.06	0.05	0.12	-0.06
Large	2000-2004	0.07	0.06	0.01	0.07	0.04	0.03
	2005-2007	0.06	0.04	0.02	0.11	0.05	0.05
	2008-2010	0.04	0.07	-0.03	0.05	0.08	-0.02

Source: Annual Employment Survey (2010).

## Credit Allocation in the Economy

We now turn to describing the allocation of credit to the private sector, including that portion accounted for by SMEs, by sector of economic activity. We then examine new Central Bank data on new lending and net credit transactions in order to investigate the roles of credit expansion and deleveraging on the net credit positions of the SME sectors of the economy.

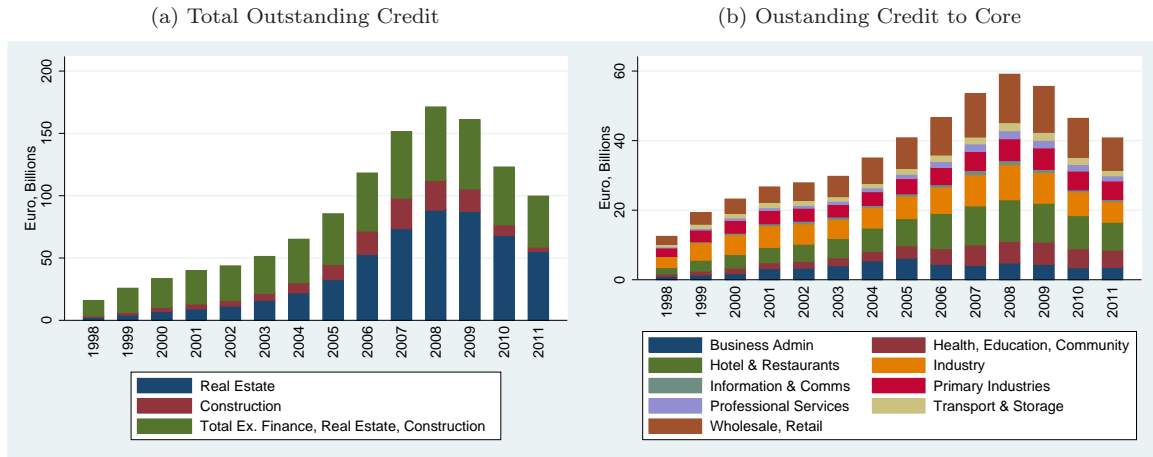
### Credit to the Private Sector

Figure 3a illustrates the boom in total private sector credit between 2005 and 2008, followed by a sharp, ongoing, contraction. The dominance of Real Estate over this time period is noteworthy, although credit to the non-financial and non-real-estate (“core”) sectors did expand considerably between 2005 and 2008.

Figure 3b examines the evolution of private enterprise credit growth in the non-construction, core sectors of the economy. The dominance of the Hotel and Restaurant, Industry and Wholesale and Retail sectors over the period is clear, as is the large credit contraction since 2008.

Figure 4a shows the average relative credit allocation across several sectors of economic activity for the period 2000-2004. In the absence of a formal analysis on optimal credit allocation in Ireland, we assume that this pre-boom allocation of credit stocks, occurring during a period of significant but

Figure 3: *Outstanding Credit to Private Sector Enterprises, by Sector 1998-2011Q3*

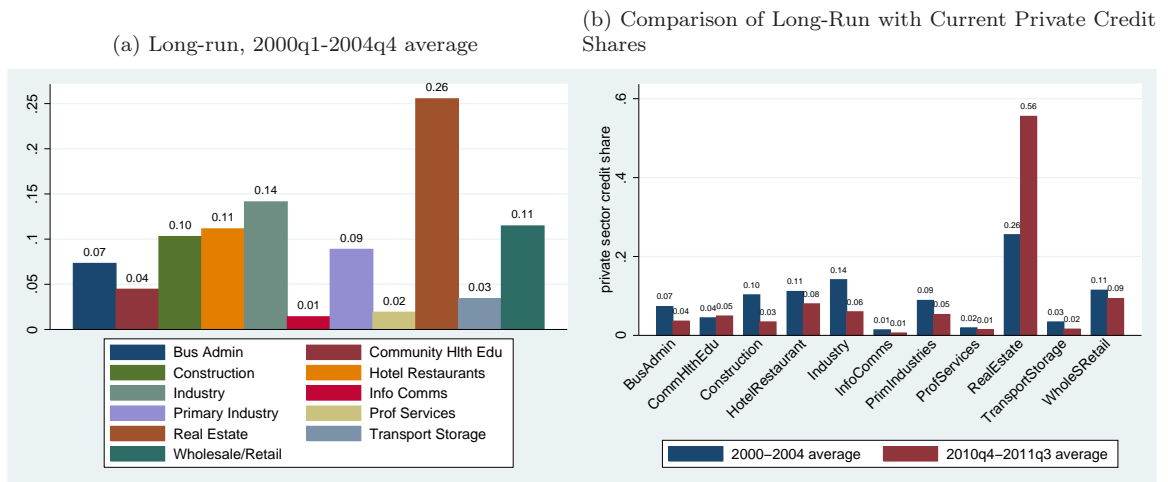


Source: Central Bank of Ireland (2011)

Note: Annual figures generated as averages of quarterly figures.

relatively stable economic growth, reflects a steady-state allocation that correlates with a balanced sectoral risk and return framework.<sup>9</sup>

Figure 4: *Long-run and Current Private Credit Shares, by Sector*



Source: Central Bank of Ireland (2011)

Figure 4b shows the pre-boom credit allocation compared to the relative post-boom allocation. The maroon bar represents the sector’s share of the total credit stock outstanding in 2010-2011, with the blue line representing the “equilibrium” 2000-2004 share. A large discrepancy between the

<sup>9</sup>The dominance of Real Estate is an outlier here.

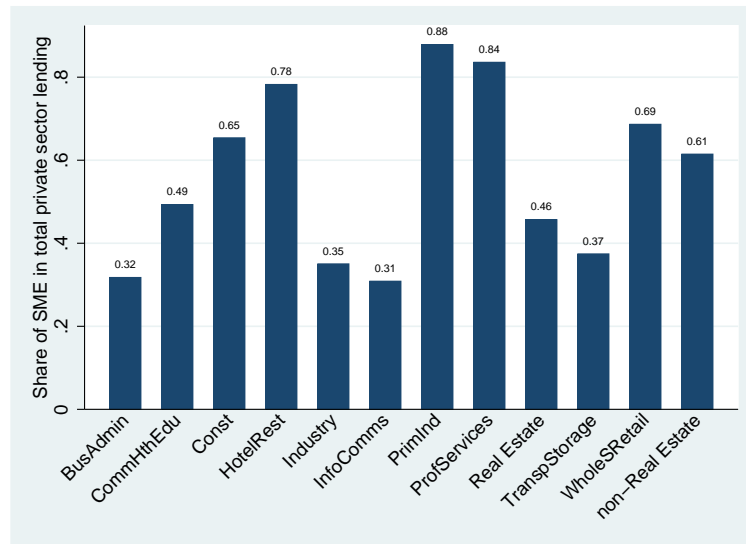
maroon and blue bars for a sector illustrates the relative expansion of this sector during the credit boom. The dominance in terms of credit growth of the Real Estate sector is apparent, with all other sectors apart from the Health, Education and Community sectors experience a fall in their share of total outstanding private sector credit over the time period 2004-2010. Construction, Industry and Professional Services have seen their relative shares halve over this time period with significant reductions also across Primary Industries (dominated by Agriculture, Forestry, and Fishing) and Construction.

### Credit to SMEs

We have established the distribution of credit across the private sector and now examine the share of SMEs in this total private sector credit allocation. Using data on outstanding stock, we establish how credit was allocated to SMEs in the past. Using data on new lending and net transactions we examine how credit is being allocated during the current period of financial and economic downturn.

Figure 5 uses recent credit data to examine the SME share of private credit stocks by sector. The dominance of SMEs in several sectors is noted, for example, Primary Industries, Professional Services and Hotel and Restaurant. It is unsurprising that credit to Industry goes mainly to larger firms. On average, 61 per cent of outstanding credit to core sectors goes to SMEs. This highlights the relevance of SMEs to financial stability concerns as well as to domestic employment, demand and credit allocation.

Figure 5: *Share of SME in Total Private Sector Lending, 2010Q4-2011Q3 average*



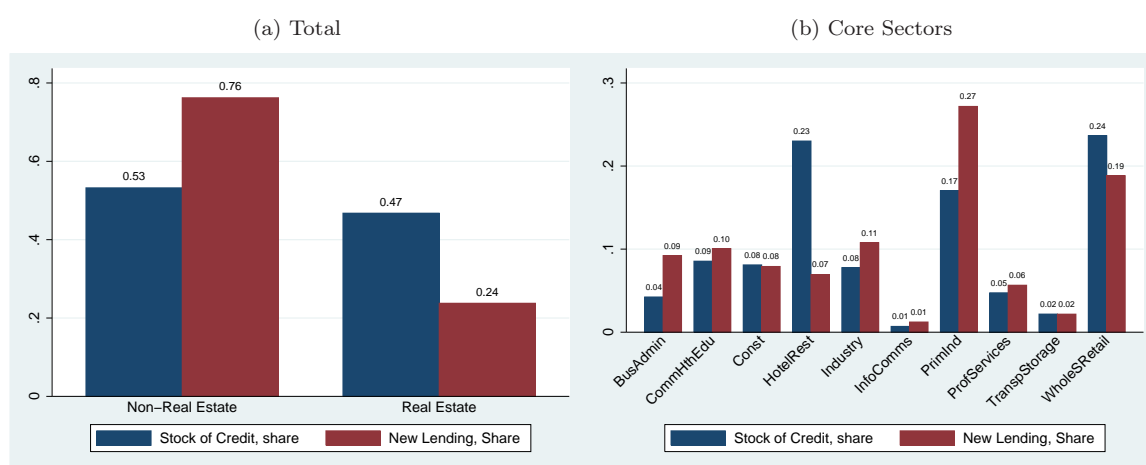
Source: Central Bank of Ireland (2011)

The collection of data by the Central Bank on new lending to SMEs<sup>10</sup> began from the end of

<sup>10</sup>New lending is net of restructuring and reclassifications, attempting to capture 'true' new lending. This figure includes all transactions in which the principal amount due to the lender increases, meaning that capitalizations of interest are included in the numbers.

2010, with data available up to 2011q3. The direction of current, new, lending is a policy issue, if, as we assume throughout, current credit flows are likely to drive future growth. Figure 6a again illustrates the recent dominance of Real Estate in the Irish economy which accounted for almost 50 per cent of outstanding credit to SMEs between 2010 and 2011. With a share of new lending to Real Estate that is 23 per cent lower than its share of credit stock. A welcome shift in SME credit towards non-real estate activities appears to be taking place.

Figure 6: *Allocation of Credit to SMEs: Credit Stock and New Lending by Sector, 2010Q4-2011Q3 average*



Source: Central Bank of Ireland (2011)

Note: Annual figures generated as averages of quarterly figures.

Figure 6b examines the reallocation of credit across SMEs by comparing relative outstanding credit stocks and new lending shares in the core SME sectors. Business Administration and Primary Industries are significant here with both sectors recording large shares of new lending when compared to their relative credit stocks. However, Health, Education and Community; Industry; Information and Communications; Professional Services and Transport and Storage sectors also record higher new lending than existing stock shares. Lower new lending shares in Construction, Hotels and Restaurants and Wholesale and Retail sectors, when compared to outstanding credit stocks, may be reassuring in the sense that credit is being allocated away from sectors most associated with the credit bubble, although these sectors combined still account for 34 per cent of all new lending to SMEs.

Figure 7a describes net credit transactions in the core and Real Estate sectors for SMEs as well as the new lending figure for SMEs. We refer to a negative net transaction figure as “deleveraging” on behalf of the financial institutions. A total €0.86bn contraction in core sector SME credit stock was observed in the first three quarters of 2011. This figure represents two-fifths of total private sector deleveraging in core sectors (see Figure A1a for the figures for all private sector firms). In the Real Estate sector, SME deleveraging of €0.67bn was observed over the time period, although the

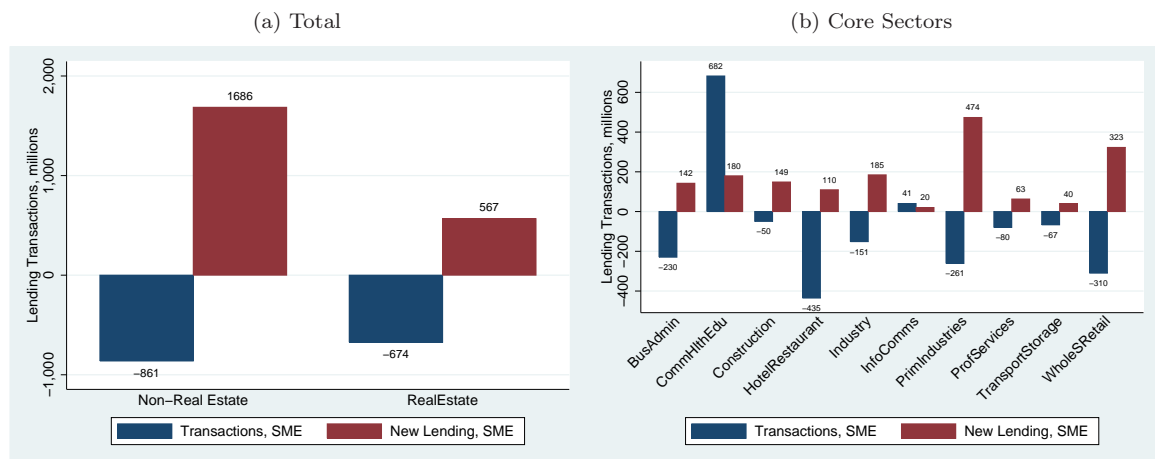


net transaction figure for the total private sector in Figure A1a was positive, indicating that new lending to Real Estate continued to outstrip balance sheet reductions.

Total new lending to non-Real Estate sectors amounts to €1.7 billion in Q1-Q3 2011. This is somewhat lower than the €6 billion in new lending to SMEs that the FMP pillar banks committed to<sup>11</sup> for 2011. This difference is explained by the fact that the lending figures quoted as part of the target include restructuring of old facilities, and money sanctioned but not drawn down. However, the figure of €1.6bn represents an accurate picture of the amount of new money entering the SME segment of the economy in 2011.

Figure 7b reports sector-specific figures for core SME sectors. All these sectors experienced net deleveraging, bar Education, Health and Community which experienced an expansion of over €500m in the first three quarters of 2011<sup>12</sup>. The fastest deleveraging in 2011 occurred in Hotels and Restaurants, followed closely by Wholesale and Retail (€-310m); Primary Industries (€-261m) and Business Administration (€-230m).

Figure 7: Cumulative Quarterly New Lending and Net Transactions, SME, 2011Q1-2011Q3



Source: Central Bank of Ireland (2011)

The desirability of these allocation choices requires an in depth analysis that is beyond the scope of this article. Intuitively, however, Figure 8a indicates<sup>13</sup> that those sectors with the largest credit exposures at the peak of the recent economic boom are also those undergoing the most significant deleveraging. The clear outlier to this trend is Construction, which given its high peak credit stock levels, would be expected to have large negative transaction numbers. The Construction anomaly aside, this pattern is to be expected in an economy undergoing a substantial contraction and reflects restructuring across the economy, where those sectors that experienced the largest booms will also experience the largest contractions. Figure 8b shows that sectors which had higher peak stock levels are in general also posting higher new lending figures in 2011. This simply reflects an industry size

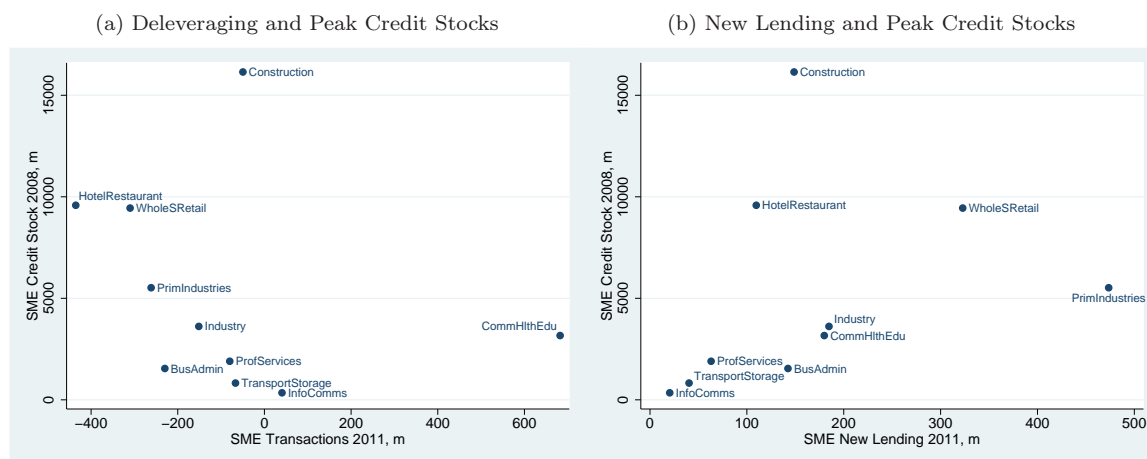
<sup>11</sup>Allied Irish Bank (2010); Bank of Ireland (2010); Moran (2011)

<sup>12</sup>See Figure A1b for the total private sector.

<sup>13</sup>See Figures A2 for the total private sector.

effect, where certain sectors will receive more lending than others, regardless of economic conditions. The telling pattern in Figure 8a is that despite increased new lending to these larger sectors, sectors associated with high levels of credit at the peak of the recent credit boom are still associated with higher net deleveraging.

Figure 8: *The Current Deleveraging and New Lending Plotted against Peak Credit Stock, SME*



Source: Central Bank of Ireland (2011)

Note: Estimated SME share 2008 using 2010-2011 shares.

The data presented here is confined to SME credit provision from banks operating in Ireland. Other external funding sources for SMEs traditionally include venture capital (an underdeveloped funding source for SMEs in Ireland), retained earnings, informal sources, micro-credit and even international sources, for example the European Investment Bank. Discussion of this is beyond the scope of the current article. To the extent that bank funding is generally the chief source of funding in Ireland, many important lessons can still be drawn from the data presented in this section. However, it is acknowledged that in order for a complete picture of the funding situation for Irish SMEs to be developed, trends in these alternative sources of funding would also need to be outlined.

## 5 Conclusion

This article depicts the significant structural changes undergone in the Irish economy in the build-up to the 2008 economic and financial crisis, along with the reallocation of resources that has accompanied the period of major economic adjustment since the initial impact of the crisis. The linking of data from a variety of sources allows new policy insights to be drawn for the Irish SME segment. The data show that SMEs account for over two thirds of private sector employment, and that there is a surprisingly small share of Irish private sector workers employed in the exporting sector. Smaller firms are also shown to be more dynamic, in both their job creation and job

destruction rates.

In the years leading up to 2008, employment and output had been reallocated dramatically towards non-tradable sectors. In particular, economic activity and bank credit became overly concentrated in a small number of sectors where asset values were most inflated such as the real estate, construction, and hotels and restaurants sector. This development involved a self-reinforcing feedback loop with bank lending. Data on bank lending from 2010 to 2012 suggest that Irish banks have reacted to this imbalance and begun the process of reallocating credit towards more productive sectors of the economy such as the agricultural, manufacturing and business services sectors, with parallel reductions in credit in those sectors that had experienced high levels of boom-era lending.

There is still much work to be done on establishing the optimal credit allocations across sectors in the Irish economy and similarly the optimal funding sources for SMEs, as opposed to households and larger firms. The recent experience of large-scale misallocation of credit to sectors with largely unsustainable growth rates motivates the need to understand bank credit allocation dynamics more fully. Data from the Central Bank of Ireland show a large expansion of credit to the private sector between 2005 and 2008 followed by a sharp contraction across all sectors to 2011. Transactions and new lending data for SMEs in 2011 show that deleveraging is occurring generally in proportion to the scale of boom-time credit accumulation. The sectoral composition of new lending also suggests that the post-Celtic Tiger era credit market will be characterised by a more balanced sectoral distribution of credit.

The key policy messages of this article relate to the link between the damaging structural changes driven by credit-fuelled economic growth and the difficulty in achieving employment growth in a post-crisis environment characterised by financial deleveraging by all sectors of the economy. The international evidence suggests that weak credit growth should be expected in the aftermath of a simultaneous banking and economic crisis and that, as a result, economic growth is likely to be weaker than it would be for countries recovering from more traditional "business cycle recessions". In addition, these findings indicate that improvements in GDP emanating from strong export flows, which are mainly driven by the largest firms, may have a relatively weak pass-through to the mainly domestically-orientated SME sector and hence to employment recovery.

Banks' natural tendency in such an environment is to restrict credit most to those sectors associated with the credit bubble. Such a tendency, however, may lead to an over-correction in economic activity and employment levels, as the incentives of the financial sector are often misaligned with those of economic policy makers. Policy must act in such circumstances to mitigate the effect of financial deleveraging on private sector employment, particularly in sectors where post-crisis bank lending is weakest. Further policy lessons must be drawn from the weak relationship between export volumes and employment, suggesting that GDP growth driven by exports may give policy makers a false sense of security that employment growth will follow.

The analysis here can provide important insights to policy makers dealing with the consequences of a banking crisis. Any such policy must take into account the negative effects of the deterioration of both bank and borrower balance sheets and a policy response that focuses solely on bank capital ratios may not result in the desired increase in lending. The unintended consequences of policy makers' actions, such as increased pressure to attract deposits and to deleverage balance sheets

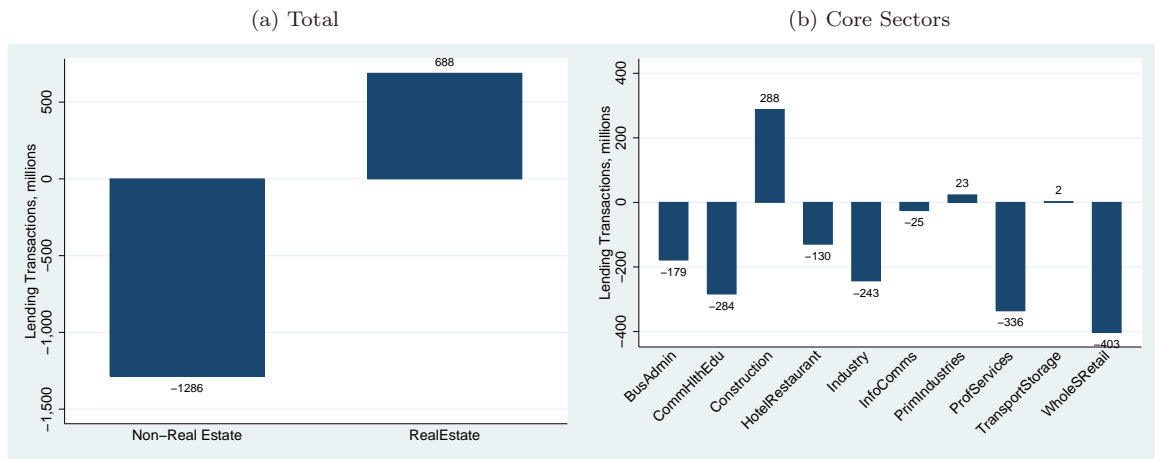
may undermine real economic activity and partially offset the benefits of increased stability in the financial sector. Such lessons appear particularly relevant in the current European context as countries attempt to restructure their financial sectors in the aftermath of the post-2008 crisis.

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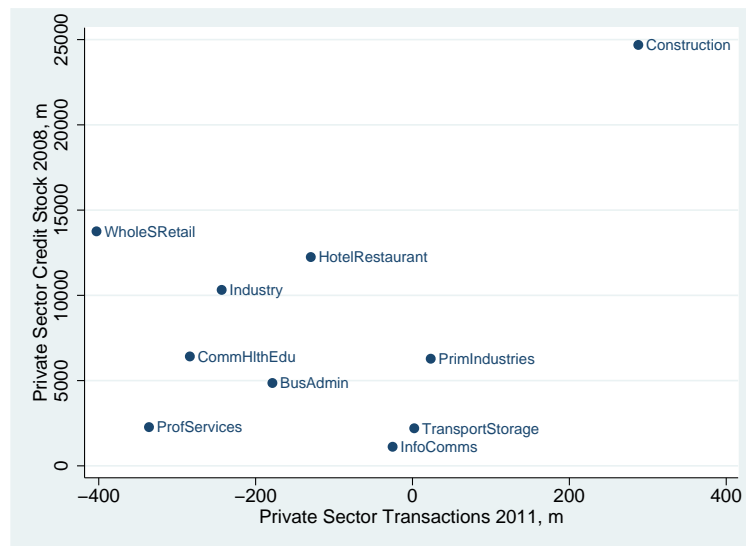
# A Appendix

Figure A1: Cumulative Quarterly Lending Transactions Total Private Sector Loans, 2011Q1-2011Q3



Source: Central Bank of Ireland (2011)

Figure A2: The Current Deleveraging Plotted against Peak Credit Stock, Private Sector



Source: Central Bank of Ireland (2011)