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UNIVERSITY *of* LIMERICK

OLLSCOIL LUIMNIGH

**Decades of Reform: An Economic Analysis of the Impact
of Commercialisation on the performance of State
Owned Enterprise's (SOEs) in Ireland.**

By *Catriona* Cahill

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of the requirements for the degree of

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Supervisors: Dr. Dónal Palcic and Prof. Eoin Reeves

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Abstract

State Owned Enterprises (SOEs) operating in strategically important sectors such as energy, communications and transport make a substantial contribution to the Irish economy. This thesis presents an original analysis of the performance of the nine largest non-financial SOEs that remain under state ownership as of 2016. The analysis is conducted over the 2002-2014 period in the context of changes faced by each company as they increased their commercial orientation and dealt with the challenges posed by greater product market competition and new regulatory institutions. Performance is measured in terms of financial indicators, labour productivity and total factor productivity. In this regard the analysis represents the first productivity based analysis of the SOE sector in Ireland. The analysis of all nine SOEs shows that, with the exception of the three public transport companies (bus and rail), SOEs were profitable over the period 2002-2014. The poor financial performance of the public transport companies can largely be attributed to reductions in the subvention received for fulfilling public service obligations. Productivity results, however, varied across companies. In most cases the productivity growth followed the wider business cycle with a general trend of efficiency gains recorded prior to the onset of the global and domestic economic crisis in 2008 and a reversal of this trend recorded thereafter. For the majority of companies where a decline in total factor productivity was measured this result was heavily influenced by substantial capital investment programmes that were undertaken. In order to gain a deeper understanding of the factors that influence SOE performance two case studies were conducted using a model of commercialisation that embraced changes to the company's capital market status (while under public ownership), competitive and regulatory settings and internal organisational environment. The case studies involved the Dublin Airport Authority (DAA) and An Post and in both cases the evidence shows that changes in performance were associated with measures of commercialisation as well as changes to regulatory institutions and/or the degree of market competition. The case of the DAA also highlighted the impact of lumpy capital investment on productivity levels in the short run. With regard to government policy the research shows how priorities have shifted over time and how the complex challenges involved in governing SOEs have, in some instances, led to inconsistencies in the conduct of policy.

Declaration

The work presented in this thesis is the sole work of the author except where duly recognised and referenced. It has not been submitted to any other university or higher education institution or for any other academic award.

Catriona Cahill

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Table of Contents

Research Motivation	1
Objectives of the Research	2
Structure of the Thesis	3
Chapter 1: Literature Review	6
1.0 Introduction	7
1.1 Definition of Public Enterprise	7
1.2 Origins of Public Enterprise	11
<i>1.2.1 Historical Development of Public Enterprise in Ireland</i>	14
1.3 Rationale for Public Enterprise	18
<i>1.3.1 Economic Motivations</i>	18
<i>1.3.2 Other Motivations</i>	19
1.4 Theoretical Perspectives on SOE Performance and Reform	21
<i>1.4.1 Property Rights Theory</i>	22
<i>1.4.2 Public Choice Theory</i>	23
1.5 Empirical Studies of SOE Performance	25
1.6 SOE Commercialisation and Performance	29
<i>1.6.1 Model of Organisational Status Change</i>	31
<i>1.6.2 Conceptual Model of Commercialisation</i>	33
1.7 Model of Commercialisation	40
1.8 Conclusion	42
Chapter 2: The SOE Sector in Ireland: An Overview	44
2.0 Introduction	45
2.1 Irish SOE Sector: Size and Contribution	46
2.2 Evolution of Irish SOE Policy	48
2.3 Policy Developments in Specific Sectors: Energy, Transport and Post	54
<i>2.3.1 Energy Sector</i>	54
<i>2.3.2 Transport Sector</i>	61
<i>2.3.3 Postal Sector</i>	67
2.4 Conclusion	68
Chapter 3: Methodology	70
3.0 Introduction	71
3.1 Methodological Approach: Quantitative vs Qualitative	71
3.2 Performance: Definition and Estimation	72

3.2.1	<i>Data Collection</i>	75
3.3	Measurement of Variables	76
3.3.1	<i>Output Measures</i>	76
3.3.2	<i>Input Measures</i>	78
3.4	Conclusion	80
	Chapter 4: An Economic Analysis of the Irish SOE Sector	82
4.0	Introduction	83
4.1	The Performance of Irish SOE's	83
4.1.1	<i>Bord Gáis</i>	84
4.1.2	<i>Electricity Supply Board (ESB)</i>	88
4.1.3	<i>Dublin Airport Authority (DAA)</i>	93
4.1.4	<i>Córas Iompar Éireann</i>	96
4.1.5	<i>An Post</i>	106
4.1.6	<i>Bord na Móna</i>	109
4.1.7	<i>Coillte</i>	113
4.2	Conclusion	116
	Chapter 5: The commercialisation of the DAA	121
5.0	Introduction	122
5.1	Review of Empirical Literature	123
5.2	Background of the DAA	124
5.3	Capital Market Status Change in the DAA	127
5.4	External Environment: Competition and Regulation	131
5.4.1	<i>Competition</i>	131
5.4.2	<i>Regulation</i>	133
5.5	Internal Environment: Organisational Change	136
5.6	Commercialisation and Performance	139
5.7	Conclusion	143
	Chapter 6: The Commercialisation of An Post	146
6.0	Introduction	147
6.1	Review of Empirical Literature	148
6.2	Background of An Post: History and current activities	149
6.3	Capital Market Status Change	152
6.4	External Environment: Competition and Regulation	156
6.4.1	<i>Competition</i>	157
6.4.2	<i>Regulation</i>	159

6.5 Internal Environment: Organisational Change	163
6.6 Commercialisation and Performance	166
6.7 Conclusion	168
Chapter 7: Conclusions	172
7.0 Introduction	173
7.1 Main findings	174
7.2 Implications of the Research	177
7.3 Limitation and Suggestions for Future Research	179
7.4 Conclusion	180
Bibliography	182
Appendix A: SOE Statutory Obligations and Public Missions	195
Appendix B: SOE Dividend Policy	196
Appendix C: Table of Financial Results for the DAA 1994-2014	199
Appendix D: Table of Financial Results for An Post 1984-2014	200

List of Tables

Table 1.1: Commercial SOEs Established in Ireland: 1927-89	16
Table 1.2: Main Findings of Empirical Studies on SOE performance	27
Table 2.1: SOE Financial Indicators 2015	46
Table 2.2: Privatised SOEs in Ireland and Exchequer Proceeds (1991-2006)	50
Table 2.3: Liberalisation Stages in the European Energy Sector	55
Table 2.4: Energy SOEs Capital Investment 2001 to 2015	56
Table 2.5: Energy SOE Borrowings 2015	57
Table 2.6: Value of PSO Levy Schemes in Energy Sector (€m)	60
Table 2.7: Transport SOEs Capital Investment 2001 to 2015	64
Table 2.8: Transport SOE Borrowings 2015	65
Table 2.9: Value of PSO Subvention in Transport Sector (€m)	66
Table 2.10: Liberalisation Directives for European Postal Market	67
Table 5.4.1 Ownership of Europe's Airports in 2016	122
Table 5.4.2: Maximum Charge per Passenger 2001-2014	135
Table 5.4.3: CEO Remuneration 2000 to 2014	137
Table 5.4.4: Changes in Composition of the Board of Directors 1994 to 2014	138
Table 6.6.1: Liberalisation Directives for European Postal Market	157
Table 6.6.2: Postal Tariff Increases (%) 1985 to 2014	161
Table 6.6.3: An Post's Quality of Service Results 2005 to 2014	162
Table 6.6.4: CEO Remuneration 1996 to 2014	165

List of Figures

Figure 1.1: Conceptual Model of Commercialisation	41
Figure 4.1: Bord Gáis Productivity Results 2002 to 2012.....	86
Figure 4.2: ESB Productivity Results 2002 to 2014.....	91
Figure 4.3: DAA Productivity Results 2002 to 2014	95
Figure 4.4: Bus Éireann Productivity Results 2002 to 2014	99
Figure 4.5: Dublin Bus Productivity Results 2002 to 2014.....	102
Figure 4.6: Irish Rail Productivity Results 2002 to 2014.....	104
Figure 4.7: An Post Productivity Results 2002 to 2014	108
Figure 4.8: Bord na Móna Productivity Results 2002 to 2014.....	111
Figure 4.9: Coillte Productivity Results 2002 to 2014	115
Figure 5.1: DAA Organisational Status Change	126
Figure 5.2: Market Share of Irish Airports 2006 to 2014.....	133
Figure 5.3: DAA Productivity Results 1994 to 2014	143
Figure 5.4 Model of Commercialisation applied to the DAA	144
Figure 6.1: An Post Business Divisions	151
Figure 6.2: An Post Productivity Results 1984 to 2014	167
Figure 6.3: Model of Commercialisation applied to An Post.....	169

List of Abbreviations

ACI	Airports Council International
ARI	Aer Rianta International
BOD	Board of Directors
CAA	Cork Airport Authority
CAPEX	Capital Expenditure
CAR	Commission for Aviation Regulation
CEO	Chief Executive Officer
CIÉ	Coras Íompair Éireann
CEN	European Standards Institute
CER	Commission for Energy Regulation
ComReg	Commission for Energy Regulation
DAA	Dublin Airport Authority
ESB	Electricity Supply Board
ESBI	Electricity Supply Board International
EC	European Commission
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GSHG	Great Southern Hotel Group
LCC	Low Cost Carrier
LP	Labour Productivity
NEEAP	National Energy Efficiency Action Plan
NESC	National Economic and Social Council
NIE	Northern Ireland Electricity
NIRF	New Institutional and Regulatory Framework
NPM	New Public Management
NTA	National Transport Authority
NTMA	National Treasury Management Agency
OCK	Opportunity Cost of Capital
OECD	Organisation for Economic Cooperation and Development
ODTR	Office of the Director of Telecommunications Regulation
OPEX	Operating Expenditure
PBITE	Profit Before Interest Tax and Exceptional Items
PSO	Public Service Obligation
REM	Regional Electricity Market
ROA	Return on Assets
ROCE	Return on Capital Employed (ROCE)
ROE	Return on Equity
ROS	Return on Sales
RSIP	Rail Safety Infrastructure Programme
SAA	Shannon Airport Authority
SEAI	Single Energy Authority of Ireland
SEM	Single Electricity Market
SOE	State Owned Enterprises
T21	Transport 21
TFP	Total Factor Productivity
USP	Universal Service Provider

Research Motivation

Despite decades of privatisation SOEs continue to play a substantial role in often strategically important industries in most industrialised economies. Recent estimates indicate that SOEs in OECD countries account for roughly \$2 trillion of assets and more than 6 million jobs (OECD 2011). These estimates are likely to be very conservative since they only include SOEs in majority public ownership and ignore companies where governments own a minority shareholding but still maintain a large degree of control (EC 2016).

Florio (2014) highlights a number of possible factors that explain the resilience of SOEs on the international stage. These include: 1) good performance in terms of standard financial indicators¹; 2) the reappearance of the emergency role of government ownership in the wake of the economic crisis; 3) disappointment with private providers in the areas of investment and sustainability; 4) lower prices under government ownership, particularly in the energy sectors of the EU-15; and 5) active participation in acquisition deals in their domestic markets and internationally.

The continuing prevalence of public ownership observed in OECD countries is also evident in Ireland. Although the precise composition and size of the Irish SOE sector has changed over time, SOEs are still major players in sectors such as energy, communications and transport. In 2015, the nine largest non-financial SOEs accounted for 2.9 per cent of GDP and 1.5 per cent of total national employment.²

A marked feature of the operation and performance of Irish SOEs over the last two decades has been their increased commercial orientation which has occurred in tandem with increased competition in their product markets following the implementation of EU directives on liberalisation. In addition, there have been a number of developments in the regulation of SOEs as traditional government regulation has given way to independent regulatory authorities resulting in increased regulatory oversight in the areas of pricing, investment and quality of service.

¹ Kowalski *et al.* (2013) in their analysis of the Forbes 2000 top corporations found that 10 per cent of SOEs performed better than their private counterparts.

² Authors' own calculation

Given the continuing importance of SOEs to the Irish economy and the changes faced by SOEs over the last thirty years, it is striking that there have been very few published studies covering their performance. The only other studies of SOE performance in Ireland date back to the 1990s (Sweeney 1990; Reeves and Ryan 1998). Although informative, these studies were subject to limitations as they focused entirely on financial performance. As SOEs are generally assigned a mix of objectives, both commercial and non-commercial, the measurement of performance in terms of economic efficiency is widely recognised as a more appropriate approach to measuring SOE performance.

Objectives of the Research

The above factors provide the motivation for the analysis conducted in this thesis which seeks to achieve the following objectives:

- To conduct an up-to-date analysis of the performance of the main non-financial SOEs operating in Ireland over the period 2002-2014.
- To analyse SOE performance in financial and economic terms. In addition to using profit-based measures of performance, the analysis utilises more sophisticated productivity-based indicators such as Labour Productivity (LP) and Total Factor Productivity (TFP). These indicators are consistent with economic theory and illuminate the performance of SOEs that are assigned multiple (often) conflicting objectives that are commercial and non-commercial in nature.
- To examine the association between the performance of Irish SOEs and changes to government policy with regard to commercialisation, market liberalisation and regulation. SOE performance is also examined in relation to the performance of the macro-economy that underwent a period of rapid economic growth followed by recession and a more recent period of renewed economic growth and recovery.
- To conduct an in-depth case study analysis of the economic performance of two Irish SOEs using a conceptual model of commercialisation that facilitates an examination of the impact of changes in commercial orientation, product market competition, regulation and the internal environment, on company performance over an extended period of time.

Structure of the Thesis

Chapter 1 – Literature Review

This chapter provides an overview of the theoretical and empirical literature on SOE performance. The chapter begins by examining the motivations, both economic and social, behind the creation of SOEs in Western European countries throughout the last century. The theoretical underpinning for SOE reform (i.e. theories of government failure) is then examined along with the main findings from the empirical literature on SOE performance. A conceptual model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991) is then presented. This model provides a framework for the analysis of the internal and external factors that influence a firm's performance, including changes in: capital market status (while still under public ownership), product market (competition), regulation, and the internal environment.

Chapter 2 – The SOE sector in Ireland: An overview

This chapter describes the Irish SOE sector in terms of its importance to the economy and the main SOE related policy developments to date. The chapter begins by examining the contribution of the nine main non-financial SOEs to the Irish economy in 2015. An overview of developments in both broad and sector-specific SOE policy over the last 10-15 years is then presented. To a large degree these developments reflect policy changes at a wider EU level in the areas of commercialisation, liberalisation and privatisation. Overall, this review provides context for the analysis of SOE performance conducted in subsequent chapters.

Chapter 3 – Methodology

This chapter describes the methodology used for the analysis of productivity in the Irish SOE sector. The data collection process in addition to the calculations used to estimate the labour productivity (LP) and total factor productivity (TFP) indicators are also described.

Chapter 4 – An Economic Analysis of the Irish SOE Sector

This chapter provides an analysis of Irish SOE performance for the period 2002-2014. The nine non-financial SOEs included in this study operate within the areas of energy, transport and post. Policy developments in recent years, particularly in the areas of competition and regulation, have transformed the commercial operations of these SOEs. Financial and economic performance is therefore analysed in light of these policy developments. This chapter also describes the methodology used to estimate the labour productivity (LP) and total factor productivity (TFP) indicators adopted for the analysis of economic performance.

Chapter 5 – SOE Commercialisation and Performance: The case of the DAA

This chapter presents an in-depth case study analysis of the economic performance of the DAA for the period 1994-2014. The DAA underwent significant change during the timeframe of analysis as it transformed from a company that acted merely as an agent in managing, developing and operating Ireland's three main airports to a fully independent commercial SOE. The historic development of the company is outlined and performance is then analysed using a conceptual model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991). The model allows for the examination of a number of factors that influence performance, such as changes in capital market status, product market (competition), regulation and the internal environment. Performance is measured using standard financial indicators as well as economic measures such as LP and TFP.

Chapter 6 – SOE Commercialisation and Performance: The case of An Post

This chapter presents an in-depth case study analysis of the economic performance of An Post. The case of An Post differs from that of the DAA as the available data permits an analysis of the company's entire historical development dating back to its corporatisation from the civil service in 1984 through to 2014. Since its corporatisation An Post has gone through an extended period of commercialisation, which has coincided with a period of significant change in its external environment involving full market liberalisation and the move from government to independent regulation. The impact of these changes on the performance and productivity of An Post is examined using the same conceptual model of commercialisation adopted in the previous chapter.

Chapter 7 – Conclusion

This chapter provides a summary discussion of the research presented in the thesis. The contribution of the thesis to the extant literature is firstly outlined. Following this, the main findings from the analyses chapters are summarised and the implications of these findings in relation to policy are considered.

Chapter 1: Literature Review

1.0 Introduction

Despite the wave of privatisation that occurred in Europe during the 1980/90s, SOEs continue to play a major role in “public services of general economic and social interest whose performance is perceived to be of great importance to broad segments of the population” (Florio 2014, p.3). Motivations for establishing SOEs have changed over time and vary across countries, however, these motivations can broadly be characterised as either economic or social.

In the latter part of the 20th Century the efficiency of public enterprise was increasingly called into question and a significant body of literature on public versus private performance began to emerge. Although the findings from these studies were largely ambiguous, governments in many Western European countries began to introduce policies of reform with the theoretical stimulus for this stemming from theories of government failure (i.e. public choice and property right). These theories provide direction in understanding the main issues associated with public ownership and the rationale for changes such as commercialisation, liberalisation and privatisation.

This chapter firstly outlines the historical development of public enterprise before discussing the economic and social motivations behind public ownership. Following this, the theoretical and empirical perspectives on SOE performance are examined. A conceptual model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991) is then presented. This model allows for an in-depth examination of the impact of change across several dimensions (capital market status, product market competition, regulation, and the internal environment) on performance and therefore is applied to the analysis of two individual SOEs in chapters 5 and 6.

1.1 Definition of Public Enterprise

In the public enterprise literature, ownership of enterprise “has been dichotomised to the extent that the behaviour – even the identity and culture – of enterprises are often reduced to whether they are publicly and privately owned” (Clifton et al. 2007, p.7). This dichotomy often results in the oversimplification of the enterprise structure. However, there are a range of organisational forms that exist between the two extremes of pure government and fully private. This idea was originally explored by

Seidman (1952, 1954) who devised a concept of public sector which was much broader than that of public service where central government is supported in its role by a range of institutions and agents that possess varying degrees of autonomy. These entities collectively form what Seidman refers to as ‘middle-ground’ between highly politicised government and highly commercial private corporation (Wettenhall 2001). Sturgess (1996) supports a modernist theory of virtual government that further advances the notion of increased autonomy. In this context, public services are provided through a network of private operators that are contracted with the state. However, Wettenhall (2001, p.22) notes that “others write fairly similarly about the ‘hollowing out of the state (e.g. Rhodes, 1994; Davis, 1997), the ‘building-down of the state’ (Campbell, 1997) or the ‘skeletal state’ (Wilson, 1995) and mostly do not much like what they see”.

This debate lies outside the often primary concern of ownership and instead focuses on the issue of company formation while under public ownership. These entities, although detached from core government, remain within the public sector and provide services that are both commercial and public/social in nature. Over time the form of these entities has evolved in both structure and function. In the 1930s the perceived inadequacy of the state to manage public enterprise resulted in the abandonment of excessive bureaucratic controls and the development of “the autonomous public enterprise” (public corporation) characterised by:

...new organisational arrangements and controls specially adapted to the peculiar requirements of business operations. While the public corporation...retains its operating and financial flexibility, it has been brought within the governmental framework [in appropriate ways that underline its public purpose].

(Seidman 1954 quoted by Wettenhall 2001, p.23)

In the UK Sir Arthur Salter noted that social progress would lie “in the growth and recognition of semi-autonomous bodies within the state, imbued with the idea of the public good, and therefore excluding from their actions motives of private undertaking” (Salter 1933, quoted Wettenhall 2001). The idea of a public corporation was further popularised by Herbert Morrison in his 1933 plan for London passenger transport. However, this format led to challenges in the area of management as a more commercial style than that prevalent in general public

services was required. In addition, it also presented a significant democratic challenge in relation to how best to operate a network of businesses in a socially constructive way that highlighted the public quality of national development policies (Wettenhall 1987). For example, Australia had a public sector that was characterised by the significant contribution of public enterprise to both the economy and society at large. Although managerial efficiency was to a degree achieved under the public corporation format there were issues regarding the effective implementation of government policy to serve the general public interest (Bland 1937).

Over time a situation was created where residues of bureaucratic hierarchical controls were combined with ownership relations and market mechanisms (Wettenhall 2003; Wettenhall and Thynne 2011). Public corporations created by special statute were the norm in many countries throughout the first half of the 20th Century. However, in the aftermath of WWII, public enterprises created under the Companies Act became more prevalent as they provided a number of additional benefits including: operational autonomy in the areas of labour and investment; ease of establishment in comparison to statutory corporations; clearer lines of accountability; and, the opportunity to diversify activities and acquire international assets (Wettenhall 2001).

The above discussion highlights the diversity in both the structure and functions of public enterprise and the consequent difficulties in defining and classifying them. O'Donovan (1950) acknowledged the problem of classification in his analysis of Irish SOEs and subsequently classified them based on type of work, however, this classification was too strict given the multitude of objectives assigned to SOEs.

The key issue that often arises is in determining how public enterprise differs from other entities in the public sector. The public sector is primarily concerned with delivering essential services to the public and these services can be categorised as either non-commercial or commercial. Although the focus of this research is commercial public enterprise, it is important to briefly note the difference between non-commercial and commercial entities. Bodies that are interchangeably referred to as non-departmental public bodies, quangos, hybrids or agencies are often the providers of non-commercial services. Over time, the presence of non-commercial agencies has grown considerably due to economic, political and social pressures.

These agencies cover a broad spectrum of areas and as such a defining characteristic of non-commercial agencies is their resistance to conceptual or formal classification (MacCarthaigh 2009). Services provided in this case encompass emergency response, schools, hospitals and courts.

Commercial enterprises in the public sector are more commonly referred to as SOEs, semi-states or public enterprises. Devlin (1969) defines commercial public enterprises as “bodies that sell goods or services and derive the major part of their revenue from such sales” (p.30), while Fitzgerald (1963) states that they must “have significant sources of revenue other than grants-in-aid from the state and local authorities” (p.7). It is clear from these definitions that the chief distinction between non-commercial and commercial bodies is drawn from their source of revenue. However, even within the commercial sphere some bodies are self-supporting while “others make losses because they are required to provide uneconomic services in the national interest and receive state subsidies directly and indirectly” (Review Group 1969, p.29).

Public enterprises are often assigned non-commercial objectives, and while these objectives can in some instances be compatible with the efficient operation of a commercial entity (Choksi 1979), the requirement to fulfil non-commercial objectives can also cause problems. For example, objectives assigned to promote employment and regional development can result in uneconomic decisions such as the employment of excess workers, artificially low prices and the continuing operation of unprofitable facilities (Shirley and Nellis 1991). In addition, public enterprises are often required to provide services of an unprofitable nature (e.g. rural bus routes) for which they receive state subsidies. However, situations can arise where these subsidies do not cover the cost of service provision and as a result hinder the profitability of the company. This in turn can give a misleading short-term outcome regarding the delivery of both commercial and non-commercial activities (Prizzia 2002). In terms of their function, public enterprises can be classified as trading agencies, however, this categorisation:

...disguises the extent to which many of them are involved in extensive non-trading activities. In addition to universal service obligations, adhering to and achieving environmental objectives and demonstrating corporate social

responsibility have moved up the agenda of SOE management teams and boards.

(MacCarthaigh 2011, p. 217)

In light of the above, a commercial public enterprise, for the purpose of this research, is more simply defined as an entity “in which the state has a majority or complete shareholding, and which is principally involved in commercial activity in a market environment” (MacCarthaigh 2009, p.5).

1.2 Origins of Public Enterprise

Before discussing the evolution of public enterprise, it is important to first reflect upon the state-building role of public enterprise. According to Rose (1979) the modern European state can be characterised by three stages of development: 1) where a state seeks to secure its own existence through the creation of institutions of government that can maintain its territorial integrity, internal order, and manage its finances; 2) where a state begins to control and mobilise its resources to gain wealth; 3) where a state begins to emphasise activities intended to provide social benefits for the sake of its citizens. Public enterprise contributes to state development within the second and third stage. The mobilisation of physical resources can be done effectively through public enterprise because:

the activities in question, such as building canals, roads and railways, or creating a postal and telegraph service, require action by some kind of formal organisation, whether public or private – and the state is normally the organisation with the greatest resources available to invest in the creation of additional wealth and power

(Rose 1979, p.258)

In the third stage of development the state shifts from a producer focus to a consumer focus where the well-being of citizens becomes a key priority. As the rights of citizens develop so too do their demands for government and this is reflected in the voting process which allows them to “use their influence to press politicians to use the resources that can now be mobilised to benefit themselves, by providing free education, safety at work, health care and full employment” (Rose 1979, p.258). Public enterprises are often used as a vehicle for government policy in the areas of employment, regional development and essential service provision.

It is commonly agreed that the role of the state is largely protectionist in nature, however, the issue of what the protective role should include is less clear. One argument is that the state should adopt a ‘night-watchman’ role in which it protects the country from foreign aggression while protecting individuals from coercion, fraud and theft. In other words, conditions for laissez-faire capitalism should be maintained (Mill 1859). Another argument is that the states protectionist role should be expanded to reflect the concept of a welfare state where issues pertaining to education, health and employment are at the forefront of government policy (Clarke 1991).

Arguments surrounding the role of the state are commonplace in the public sector literature. Support for public ownership of commercial enterprise throughout Europe has fluctuated over time. This is particularly evident in recent years as the general disenchantment with public ownership, underlying the wave of privatisation in the 1980/90s, gave way to a slower pace of privatisation in the 2000s followed by a nationalisation and privatisation revival in the wake of the global economic crisis in 2008.

The literature to date on the historical development of public enterprise is largely country based, however, some authors (Parris *et al.* 1987; Millward 2011) have attempted to discern patterns in origins and motives across countries. Reasons for the establishment of SOEs vary from country to country and as such can be complex to analyse. Public enterprises were often established for reasons outside of the primary assumption of market failure as they were sometimes:

...used as an instrument for the pursuit of distributional goals. The public enterprise may be used to create or preserve employment. It may be used as a counterweight to the concentration of private economic power, or to strengthen the economic position of particular ethnic groups or geographical regions.

(Hassard *et al.* 2007, p.19)

The increased role of the state in the economy is not a recent phenomenon and can be traced as far back as the 19th Century where, “the economic, political, and ideological premises of the changing relations between the state and the market and between the state and society – in other words, between public and private - should be sought” (Toninelli 2000, P.10). Although largely sporadic in nature, nationalisation during this period was focused in strategic sectors geared towards

national defence (i.e. metal and mining). There was a general consensus amongst several countries that were not as industrialised as Britain (i.e. Belgium, France and Germany) that the state had a primary role to play in advancing the industrialisation process. This led to a pattern of significant government intervention in production activities throughout Europe in the late 19th Century (Parris *et al.* 1987).

There was significant growth in public ownership in many European countries during the First World War (WWI) (1914-1918) as states sought to control key strategic assets. For example, there was a partial nationalisation of British Petroleum in 1914 to enable the British government to secure naval fuel supplies. State involvement in the post-WWI period can largely be explained by two motivations: industrial reconstruction and industrial rationalisation. For example, in the immediate aftermath of WWI, the German state began to take control of large public utilities (e.g. postal services and energy) in addition to reorganising the national railway system to form a more integrated network. Railways in both Italy and France were also nationalised for strategic reasons (Clapham 1921) and by the early years of the 20th Century, “all telegraph and telephone had been taken over and run from government departments” largely because of fears relating to security leakages (Millward 2010, p5). However, these nationalisation developments did not extend to Britain as there had been significant investment in the rail network by the private sector since the 1870s. Britain therefore had a rail network that was far superior to other powers and as such there was no need for government intervention to secure rail lines (Stevenson 1999; Dowd and Dobbin 2001).

In addition to post-WWI political and social tensions, the financial crash of 1929 led to increased state participation in the economy as there was a general consensus that “stronger government intervention in the form of state control of crucial sectors of the economy could resolve the problems of market failures and the excessive power of giant private corporations” (Toninelli 2000, p.16). This led to a wave of nationalisation throughout the 1930s in Western European countries most affected by the depression such as Italy, France and Britain (Clifton *et al.* 2003). According to Moore (1986), these industries were run with relative efficiency under public ownership and this resulted in increased support for further nationalisation of private industries. In the aftermath of WWII, nationalisation policies grew extensively as a

result of efforts to overcome the scarcity of raw materials and ensure continued service provision. Thus, SOEs played a major role in the reconstruction of industries throughout the 1950s (Parker 1998).

Support for public ownership, however, began to erode in the late 1960s as the performance of many SOEs began to deteriorate due to the increasing fiscal pressures experienced by most European countries from the 1970s onwards. In addition, the issue of the role of the state had come to the forefront of the political debate once again. This largely developed in opposition to two theories that had been prevalent on the left in the 1960s. The Marxist theory of State Monopoly was concerned with the connection between the state and monopoly power and was “based primarily on the argument that the socialisation of production, and the associated concentration and centralisation of capital has forced the state to take on many of the functions of capital, in an attempt to avert an economic crisis and to stabilise the class struggle” (Clarke 1991, p.3).

The social democratic theory on the other hand stressed the autonomy of the state as a political institution where production was separated from distribution. Despite the inadequacies of these two theories when applied to the political situation present in many Western European countries in the 1970s – for example, the growth of the welfare state in both the UK and Germany along with the election of social democratic governments undermined the Marxist theory while the limited impact of the welfare state on social issues such as poverty, ill health and rising unemployment was at odds with the social democratic theory supporting the distributional power of the state - support for a reduction in state intervention began to grow, thus leading to the introduction of policies relating to SOE reform or privatisation in the majority of Western European countries in the decades that followed.

1.2.1 Historical Development of Public Enterprise in Ireland

With the formation of the Irish Free State in 1922, the Irish people inherited a moderately developed economy and infrastructure (Lee 1989), and as such the goal was to pragmatically utilise public enterprise as a key tool of government policy. This is evident in the writings of Sean Lemass (former Taoiseach) who noted that “state financed industries have been set up only where considerations of national

policy were involved or where the projects were beyond the scope of, or unlikely to be undertaken by, private enterprise” (Lemass 1959, p.278). The introduction of the Shannon electrification project in the early 1920s marked the establishment of the first major commercial SOE, the Electricity Supply Board (ESB). The scheme was controversial in nature and opposed by several organisations including the Farmers Party, existing private electrical utilities, the engineering profession, and Chambers of Commerce. However, the reasons for this opposition varied in nature with the most explicit arguments centered on the issue of ownership, the fact that it was considered a “thoroughly socialist” government agenda and the fact that a German company, Siemens, was the main contractor (Sweeney 1990). Initial plans for the development of the electricity sector envisaged private ownership, however, following a period of consultation with international providers it was decided that the utility was too important to remain outside of public ownership.

The ESB ultimately played a key role in the development of policy in the area of employment (e.g. pay and working conditions) and thus provided a blueprint for the commercial SOEs that followed, with successive governments using SOEs as an instrument for securing economic development. In a similar manner to most Western European countries, the specific rationale for the establishment of SOEs varied from case to case but was primarily driven by the necessity for the needs of the new state to be satisfied through state efforts (Breen et al 1991).

The pragmatic approach towards the creation of SOEs was further highlighted with the establishment of the Dairy Disposal Company (DDC) and the Agricultural Credit Corporation (ACC) in 1927 to aid in developing the agricultural sector. The DCCs main objective was to acquire private creameries and other agriculture businesses and transfer them to co-operative societies, while the ACC was established to offer credit to farmers at reasonable rates. Although both were originally intended as temporary enterprises they remained active in the development of the agricultural sector for several decades before the DCC was dissolved in 1972 and the ACC was privatised in 2002.

Following the election of a Fianna Fáil government in 1932 under the direction of Taoiseach Éamon de Valera there was a movement towards policies promoting self-sufficiency and commercial SOEs were an important component of these

protectionist plans. The Irish Sugar Company was established in 1933 through the nationalisation of a private company and became a significant player in the Irish food industry until its privatisation in 1991. Following the success of the ACC, the Industrial Credit Corporation (ICC) was established in 1933 to address shortages in the availability of long-term credit for industry. Other SOEs established prior to WWII included the Turf Development Board in 1934 (which became Bord na Mona in 1947), Aer Rianta in 1937 and Ceimici Teo in 1939 (see table 1.1).

Table 1.1: Commercial SOEs Established in Ireland: 1927-89

SOE	Established	Sector	Current Status
The Dairy Disposal Company	1927	Business Development	Dissolved in 1972
Agricultural Credit Corporation	1927	Finance	Privatised in 2002
Electricity Supply Board	1927	Energy	Active
Industrial Credit Corporation	1933	Finance	Privatised in 2001
Irish Sugar	1933	Food	Privatised in 1991
Aer Lingus	1936	Air Transport	Privatised in 2006
Aer Rianta (now DAA)	1937	Air Transport	Active
Ceimici Teo	1939	Chemicals	Shut Down in 1986
Irish Life	1939	Insurance	Privatised in 1991
Irish Shipping	1941	Sea Transport	Shut Down in 1984
Córas Iompair Éireann	1944	Bus & Rail Transport	Active
Bord na Móna	1946	Energy	Active
Irish Steel	1946	Steel Production	Privatised in 1996
Irish National Stud	1946	Horse Breeding	Active
Arramara Teo	1949	Seaweed Processing	Privatised in 2014
Voluntary Health Insurance	1957	Insurance	Active
Radio Teilifís Éireann	1960	Broadcasting	Active
Nitrién Éireann Teo	1961	Fertiliser Production	Shut Down in 2002
B&I Line	1965	Sea Transport	Privatised in 1992
Foir Teo	1972	Banking	Shut Down in 1990
Bord Gáis Éireann	1976	Energy	Active
Irish National Petroleum	1979	Oil Refining and	Privatised in 2001
Bord Telecom Éireann	1984	Telecommunications	Privatised 1999
An Post	1984	Postal Services	Active
Coillte Teo	1989	Forestry & Energy	Active

Source: Irish State Administration Database

The government's protectionist policies continued out of necessity during, and in the immediate aftermath, of WWII. In 1941, Irish Shipping Ltd was established through

the nationalisation of a private company. Although it was initially considered a significant addition to the country's strategic shipping fleet, the company suffered significant financial losses in the 1970s and as a result in 1984 became the first SOE to be liquidated. The trend of nationalisation continued with the establishment of CIÉ (bus and rail transport) in 1944, Irish Steel in 1946 and Arramara Teo (seaweed company) in 1949.

No new commercial SOEs were established between 1949 and 1957 and this was primarily due to political upheaval from three changes in government. Fianna Fail were elected in 1957, however this government (once again led by de Valera) now supported economic policy geared towards outward looking development rather than the protectionist policies favoured in previous years. The government outlined their new economic policy of encouraging growth through foreign investment in the White Paper *Programme for Economic Expansion* in 1958.³ However, despite this shift in policy commercial SOE's continued to play an important role in the government's plans. The most significant commercial SOEs to be established after this point included: RTE (the national broadcasting agency) in 1960, Nitrigin Éireann Teo (chemicals company) in 1961, and B&I (ferry company) in 1965.

Ireland's economic, social and political progress in the 1960s and 1970s owed much to the rapid expansion of public enterprise during this time. However, support for public enterprise began to wane in the 1970s as a result of the global economic downturn. The resulting conservative argument noted that the excessive size of the public sector was crowding out the private market, restricting enterprise and taking too much in taxes (Sweeney 1990). This argument was further strengthened on the international stage with the election of conservatives in the UK (Margaret Thatcher) and in the US (Ronald Reagan). In the case of the UK, public enterprise had expanded into sunset industries (e.g. manufacturing) which experienced significant adverse effects during the recession and as a result required substantial financial support in the form of subsidies from government. This, in addition to the increased tax burden to pay for rising unemployment benefits, gave impetus to the wave of privatisation that occurred in the UK from the 1980s onwards.

³ This white paper was largely based upon the economic review document *Economic Development* (also called the Whitaker Report) published in 1958.

In contrast to the UK, Ireland did not implement a programme of privatisation until the 1990s with policy instead focusing on measures of commercialisation.⁴ Outside of the establishment of Bord Gáis Éireann in 1976, the 1980s were largely characterised by the corporatisation of civil service departments. These included Telecom Éireann and An Post in 1984 along with Coillte Teo (forest company) in 1989. By the end of the 1980s there were over 20 commercial SOEs operating in strategically important sectors of the economy such as telecommunications, energy, transport and banking (Sweeney 1990).

1.3 Rationale for Public Enterprise

In order to gain a comprehensive understanding of the role of the state in commercial enterprise, it is necessary to examine the rationale behind the creation of SOEs. Therefore, this section outlines the main motivations, both economic and social, that have been prevalent in Western European countries in the last century.

1.3.1 Economic Motivations

The most common economic argument advanced in support of public ownership is market failure. The presence of asymmetric information or negative externalities (both economic and social) can hinder the functionality of the free market and thus erode potential private profits (Nove 1973). The best example in this case is that of a natural monopoly where it is cheaper to produce goods by a monopoly rather than by many firms, and where any potential competitors are dissuaded from entering the market by non-predatory measures (Bös 1986). However, there is a risk that the market will be exploited by unregulated private enterprise, resulting in diseconomies of scale for consumers in the form of higher prices and lower quality of service. Public utilities, which provide an essential service to both consumers and other industries, often exhibit natural monopoly characteristics. Public ownership in this case is expected to ensure fairer prices and higher standards of service.

According to Parris *et al.* (1987), a public enterprise can also be established as a ‘fiscal monopoly’ with the purpose of collecting indirect taxes. The Swedish government established a tobacco monopoly in 1915 to raise Exchequer funds for a new pension scheme. The government argued that a state monopoly was the only

⁴ This is discussed in greater detail in chapter 3.

option as fiscal control could not be secured through private agreement. A similar option was chosen two years later with the establishment of the Wine and Spirit Company, however, the objective this time was to restrict the consumption of alcohol by eliminating the private profit motive from its supply by ensuring that profits would accrue to the State. This mode of operation remained active in Sweden until the 1970s after which point it was considered by the public and the government to be unjustifiably restrictive (Parris *et al.* 1987).

Public enterprise can also play an important role in economic growth. This has been particularly true in the case of countries emerging from colonial rule that sought to expand and improve the public sector. With the establishment of free states, “citizens wanted more access to education, health, water and public housing services, while emerging business interests wanted better electricity supplies, communications, transport, training and credit facilities” (Millward 2011, p.16). Via public ownership the state could stimulate growth in key strategic sectors where private initiative was lacking through a number of policies relating to the harnessing of natural resources (e.g. establishment of SOEs in the energy sector) and the construction of network based infrastructure (e.g. railways).

1.3.2 Other Motivations

SOEs often have the difficult task of reconciling potentially conflicting objectives. In addition to pursuing commercial viability, SOEs have multiple non-commercial objectives including the delivery of socially necessary but uneconomical services and job creation (Aharoni 1981). Moreover, the OECD’s Guidelines on Corporate Governance of State-Owned Enterprises recognise that SOEs are frequently “expected to fulfil special responsibilities and obligations for social and public policy purposes ... [that] may go beyond the generally accepted norm for commercial activities” (OECD 2005, p. 20).

Public service obligations are most commonly applied to public utilities (e.g. electricity, bus and rail) that are considered socially necessary. Certain components of these utilities (e.g. the electricity distribution network or rural bus routes) are unlikely to generate a profit, so private firms have little interest in operating these services. In this case, access to these markets is generally restricted to one supplier (i.e. the SOE) and operational losses are financed by the state. State support is

largely prohibited by the European Union in an effort to ensure competitive neutrality, however, state support can be provided in certain instances where a PSO is being discharged.

Public enterprise can be used as an instrument for realising policy objectives geared towards social change. The presence of public enterprise in key industries can minimise the concentration of wealth as the means of production is monitored. Monopoly power in private hands can lead to higher prices in the market thus representing exploitation of consumers. As such, public enterprise can ensure that essential commodities are delivered to customers at fair prices (Parris et al. 1987).

In addition, public enterprise can also play a significant role in the development of the welfare state through the promotion of better wages and greater employment opportunities. The best example of this can be found in the post-WWII era in countries such as France, Italy and Austria. The latter, in particular, resisted significant pressure to reduce employment in the 1960s and 1970s with the Chancellor at the time, Bruno Kreisky, famously stating during the 1979 general election that hundreds of thousands of unemployed people were of greater importance than a budget deficit of a few billion (Stiefel 2000).

Political ideology can also be useful in understanding the shift towards public ownership in the latter part of the 20th Century. Political and ideological beliefs in some instances underpinned the wave of nationalisation that occurred in the post WWII period as,

...nationalisation programmes were based on the belief that enlarging public properties and activities could open the way to a fundamental change in the distribution of power within society, thus engendering a new socioeconomic equilibrium based on the diminished power of private capital and the increased power of labour.

(Toninelli 2000, p.6)

Such motivation was particularly apparent in the case of Britain, France and the Netherlands where progressive parties were in power during this period. In the case of Austria, there were strong political reasons for nationalisation after WWII as neither of the main political parties wanted to give control of Austrian property to the Allies.

More recently public ownership has been used in the interest of social responsibility and to ensure ethical behaviour. For example, there are some countries (Austria, the Netherlands, Finland and Sweden) where only one entity is permitted to operate casinos and these entities are either wholly or largely owned by the state. However, it should be noted that the Netherlands recently decided to sell Holland Casino as “the cabinet’s opinion was that gambling is not a service that should be offered by the government and that public interests can better be served by laws and regulation, rather than state ownership” (OECD 2015, p.49). In addition, the fact that the state collected revenues from casinos was considered to be inconsistent with the government’s policy of gambling prevention. In the case of Sweden, Systembolaget is an alcohol retail chain owned by the Swedish government as part of its social policy objective to reduce the impact of alcohol abuse. In addition to ensuring the implementation of age-checks in stores, the company is also obligated to produce advertisements focused on the negative side effects of drinking.

1.4 Theoretical Perspectives on SOE Performance and Reform

It is evident that there have been a number of motivations throughout history for the establishment of SOEs, with the most prominent being a solution for market failure. However, in the 1970s public enterprises faced growing criticism for their perceived lack of efficiency in comparison to private enterprise and as a result policies geared towards reforming SOEs and privatisation began to dominate the public sector landscape. The general thrust of SOE reform was the adoption of policies aimed at increasing the commercial and market orientation of these companies. These policies included commercialisation (increased freedom from political interference and profit-orientation); increased competition (liberalisation and de-regulation); and increased levels of private ownership or private delivery of public services (forms of privatisation). To a large degree these reforms were influenced by theoretical developments that emphasised government failure. The term ‘government failure’ is not clearly defined, as there are a number of factors that supposedly constitute failure, these can include: inefficient government action (Friedman 1975; Kahn 1990), inadequate regulation (Bator 1958; McKean 1965), and even inaction (Bagley and Revesz 2006). In the context of this research, the two most relevant theories in relation to government failure are property rights and public choice, as both have

proved “important in shaping attitudes towards public and private ownership” (Martin and Parker 1997, p.10).

1.4.1 Property Rights Theory

Property rights theory explores the link that exists between property rights and economic performance. There are three basic types of property rights: the right to use a production factor, the returns on its use, and the right of transfer. Property rights theory focuses on the role of incentives. Managers, in the same way as individuals, respond to incentives and as a result, if individuals within a firm have no right to profits this can lead to inefficiencies. It is important to remember that it is the owner, not the manager, who incurs costs in contracting, negotiating and monitoring the management actions, and enforcing the owner’s property rights.

Property rights theory is often invoked in the debate regarding public sector efficiency. The property rights model (e.g. Alchian and Demsetz 1972; De Alessi 1969) contends that bureaucratic dysfunctions may arise in the absence of owner supervision. In a private firm, the owner will seek to achieve the most effective combination of inputs within the production process as the margin between input and price represents the owner’s profit margin, which in turn influences their economic wellbeing (Bozeman 2007). Therefore, the significant degree of separation between ownership and operations in the public sector gives rise to inefficiencies, as managers are less likely to be concerned about the future of a company in which they cannot capitalise. According to Bozeman (2007), “public organisations are viewed as inherently flawed, at least from a technical efficiency standpoint” and thus, the “property rights prescription is straightforward – put economic activity into the private sector if at all possible, through direct control, contract, or privatisation of public operations” (p. 56).

Private firms often face competition and it is argued that there will be an efficient allocation of risk in the presence of an efficient capital market (Fama 1980). In addition to this, managers will be concerned about their reputations within managerial labour markets and thus will be incentivised to perform. In the context of monitoring, it is believed that the identity of shareholders and the degree of shareholding is not important as the Board of Directors in addition to internal

decision making structures will create a sufficient monitoring system (Fama and Jensen 1983).

In contrast to Fama and Jensen (1983), Stiglitz's view of the private sector is much more pessimistic in that he believes that capital markets are not always efficient, reputation does not provide adequate incentive to perform and close relationships result in the Board of Directors being ineffective with regards to monitoring executives (1985). Similar doubts with regards to the efficiency of private firms have been articulated by Shleifer and Vishny (1997).

1.4.2 Public Choice Theory

Public choice theory also examines the role of incentives within the political system and explores how these incentives shape behaviour. Market failure is the most common economic argument offered in favour of expanding the role of government, however, public choice theory challenges this way of thinking by arguing that there is no practical value in identifying market imperfections and assuming (without concrete evidence) that some system of government intervention will put things right.

Buchanan (1984) identified a fundamental problem that he referred to as a bifocal view of human action. If the self-interest supposition is pursued, then it is necessary to pay attention to the way incentives condition this self-interest. If the presence of a self-interest motive can, under some conditions, lead to market failure then it is wrong to assume that government intervention will correct for these failures without first analysing what drives the behaviour of individuals within the political process. Buchanan (1984) argues that for a fair analysis of market failure, as opposed to government failure, we have to adopt a consistent model of human behaviour. We assume that individuals in the market are driven by self-interest and therefore, the same assumption must also be applied to individuals engaged in the political process (Pennington 2000). Many politicians seek power and status, therefore, it can be construed as misleading to characterise individuals within the political process as merely muted agents, whose only concern is to maximise public welfare. Politicians are concerned with winning votes as this effectively secures their job and, as a result, policies are often designed with this goal in mind.

The problem of asymmetric information is present in the public sector as civil servants and bureaucrats often have access to financial information that the general public do not (Olsen 1965). As a result, civil servants can use this information to lobby their budgets, with the intention of securing higher salaries. In contrast, the public very rarely seek to access the information necessary to monitor public spending, as the costs associated with this are higher than the benefits resulting from any change in policy (Martin and Parker 1997).

Public choice theory is also concerned with performance evaluation. If public organisations make information more readily available, then the “argument is that this will move power, in terms of the control of information, away from public service agents towards different principals such as politicians, academics, pressure groups and the public at large” (Kennett 2008, p.33).

Much of the literature concerning property rights and public choice theory assumes a sharp distinction between the public and private sector. Martin and Parker (1995) argue that this view is too simplistic as there are many organisational forms that can develop between that of a pure hierarchical government department and a fully private company. It is assumed that property rights are more clearly defined in the private sector. This may be true for sole proprietors and small companies, however, these are not suitable alternatives to public ownership. Public organisations are commonly replaced by public joint stock companies, where there are many shareholders and property rights can, once again, become diffused and uncertain. In the context of public choice theory, the overarching assumption that state employees pursue their own individual interests at the cost of the collective interest is not easily proven. Maslow (1964) argues that individuals are much more complex and as a result may choose to promote the collective interest in an attempt to satisfy any number of unrecognised psychological needs that can include safety, love, esteem and self-actualisation. Posner and Schmidt (1984) recognises that public sector managers are often recruited from the private sector and as such may be concerned with protecting their reputation in case they should decide to return to the private sector at a later stage. As a result, these managers, while attempting to protect their reputation, will inevitably make decisions that satisfy the organisation’s objectives and by extension the collective interest.

Property rights and public choice literature is often criticised for its lack of empirical validity. The next section, therefore, provides an overview of the empirical literature on SOE performance to date.

1.5 Empirical Studies of SOE Performance

The empirical studies reviewed in this section examine the performance of SOEs that remain under public ownership. In some cases, these studies analyse a sample of country specific SOEs over time, in others they study samples of SOEs in different countries, while others compare public and private performance. There is a significant body of literature on the impact of privatisation on company performance, however, these studies are not reviewed here as the focus of this thesis is on companies that remain under public ownership.

Caves and Christensen (1980) used total factor productivity (TFP) analysis to measure the performance of two Canadian rail companies (one public and one private) for the period 1963 to 1975. The authors found that both companies had performed well in the competitive market for transportation services with the TFP of both increasing “at a rapid rate” (p.974). Thus, the authors concluded that, “public ownership is not inherently less efficient than private ownership – that the oft noted inefficiency of government enterprises stems from their isolation from effective competition rather than their public ownership per se” (p.974). In a subsequent study, Caves and Christensen (1981) used TFP once again to conduct a comparative analysis of the performance of US and Canadian railways between 1955 and 1974. In this case, they found that economic regulation had a stronger effect on performance than ownership as “during the period in which the economic performance of Canadian railroads dominated that of US railroads, the only major differential change in their environments has been the divergence in regulatory policies” (p.579).

Pryke (1981) analysed the performance of UK nationalised industry during the period 1968 to 1978 and found that performance was “third rate, though with some evidence here and there of first class standards” (p.7). The publication of this study came at a time preceding significant change in public enterprise policy, which served to “assert the primacy of overall financial controls, at the possible expense of the pricing and investment rules suggested by the economic literature and at the

expense also of industries' non-commercial objectives" (Molyneux and Thompson 1987, P.52). As a result, Molyneux and Thompson (1987) analysed the performance of the same ten companies using TFP and LP measurements for the period 1978 to 1985. Although the authors found evidence of improved performance from 1978 onwards, they highlighted that the new regulatory framework had largely failed in terms of efficient pricing policy and that it was only "where reforms have extended to the introduction of competition with the state (or newly privatised) monopolies, can significant improvement be identified over the last six years" (Molyneux and Thompson 1987, p.78).

The most comprehensive international analysis of SOE performance is perhaps that of Perelman and Pestieau (1988). The authors constructed a translog frontier production function using the corrected Ordinary Least Squares method to measure the performance of 19 international (non-US) rail SOEs and 22 postal SOEs for the period 1970 to 1983. In the case of the rail and postal companies there was an average annual increase in productivity of 1.03 per cent and 0.68 per cent respectively.

Table 1.2: Main Findings of Empirical Studies on SOE performance

Study	Country	Industry	No. of Firms	Summary
Caves and Christensen (1980; 1982)	Canada US	Rail	2 (1980) 4 (1982)	<ul style="list-style-type: none"> Analyses economic performance. Found no evidence that public ownership was less efficient than private. Any inefficiency is instead related to lack of competitive environment rather than ownership. Regulatory policy influenced productivity.
Molyneux and Thompson (1987)	UK	Various	10	<ul style="list-style-type: none"> Analyses economic performance. Improvement in the performance of SOEs between 1978 and 1985. Significant improvements with the introduction of competition.
Boardman and Vining (1989)	International (Non-US)	Various	500	<ul style="list-style-type: none"> Analyses economic performance. Public and mixed ownership less efficient than private in competitive markets.
Perelman and Pestieau (1988)	International (Non-US)	Postal Rail	19	<ul style="list-style-type: none"> Analyses economic performance. Minimal improvements in productivity of rail and postal SOEs during period of analysis.
Sweeney (1990; 1998)	Ireland	Various	23 (1990) 10 (1998)	<ul style="list-style-type: none"> Analyses financial performance. Results showed improved financial performance during period of analysis.
Reeves and Ryan (1998)	Ireland	Various	12	<ul style="list-style-type: none"> Analyses financial performance. Irish SOEs inefficient in comparison to private UK counterparts.
Bozec and Breton (2003)	Canada	Various	25	<ul style="list-style-type: none"> Analyses financial performance. Corporatisation had a positive effect of profitability. Results showed no clear relationship between performance and competition.
Bilodeau <i>et al.</i> (2007)	Canada	Various	11	<ul style="list-style-type: none"> Analyses financial performance. Results showed performance improved following corporatisation.

Most empirical studies that examine the relationship between ownership and performance are confined to companies that operate as monopolies or duopolies. To extend the literature in this regard, Boardman and Vining (1989) measured the performance of 500 private, mixed and state owned enterprises in a competitive environment while controlling for a number of factors including country and industry. Using basic financial (the rate of return of equity (ROE); return on assets (ROA); return on sales (ROS); net income) and efficiency (turnover per employee; turnover per assets) indicators, the authors found that "the consistency and

magnitude of the estimates across all equations provides robust evidence that state enterprise and mixed enterprises are less profitable than private corporations" (p.17). Overall, the authors argue that the case for privatisation does not apply to natural monopolies or heavily regulated industries and is instead confined to sectors characterised by competition. It should be noted, however, that the sample was somewhat biased towards private ownership as 409 of the companies included in the study were privately owned.

It is important to acknowledge that changes in ownership are represented by steps along a continuum of organisational change, ranging from a hierarchical government department to a private firm. In this context, Bozec and Breton (2003) examined the effect of corporatisation on the performance of twenty-five Canadian SOEs for the period 1976 to 1996. Performance is measured using a multi-criteria approach encompassing both profitability (ROS; ROA) and productivity indicators (sales efficiency; net income efficiency; assets turnover). After controlling for a number of factors including size and the external economic environment, the authors found that the corporatisation process had a positive impact on the profitability and productivity of the SOEs. In addition, there was no clear relationship between competition and performance, and the authors note that this is "probably because, in these sectors, no level of competition is really sufficient to counterbalance the oligopolistic weight" (p.43). Using a similar approach, Bilodeau *et al.* (2007) tested the impact of corporatisation on the performance of eleven Canadian agencies. The authors conducted a three year pre and post analysis and found that, following corporatisation output and revenue increased, the revenue-to-expenditure coverage gap narrowed, and cost efficiency and employee productivity improved. However, it should be noted that the analysis undertaken in this study did not control for other changes that might occur during the transition period.

In an Irish context, Sweeney (1990, 1998) used basic financial indicators such as PBITE and net profit to analyse the performance of the Irish SOE sector throughout the 1980s and early 1990s and concluded that:

...state-owned companies, including the monopolies have been commercialised. Several of them had been unprofitable, poorly managed, and some made poor investments. All shifted into a far more commercial mode in the period under review (1987-96). Most are now profitable.

(Sweeney 1998, p. 96)

Reeves and Ryan (1998) conducted a comparative analysis of the performance of 12 Irish SOEs against their private UK counterparts for the period 1988 to 1992. Using basic performance indicators (ROCE; labour productivity; technology mix; employment and turnover growth), the authors found that the average profitability of Irish SOEs during the period of analysis “was significantly lower than for UK firms but the difference in mean labour productivity was found to be modest” (p.1596). Overall, the authors concluded that the low rates of profitability in Irish SOEs could be attributable to a number of factors including the non-separation of commercial and social objectives and the intensity of capital usage.

The extant studies of SOE performance vary in terms of country, time frame and performance indicators used. Although these studies differ with respect to results and conclusions, it is possible to make some generalisations. For example, a number of studies use financial indicators which, although informative, are not necessarily appropriate where SOEs are assigned non-commercial objectives. Bearing this in mind, the extant literature suggests that private companies tend to perform better than SOEs in financial terms but this depends on factors such as market structure and liberalisation. Productivity based analyses showed mixed results. Where studies focus specifically on the impact of change (especially corporatisation) while companies remain under public ownership, there is evidence of improved performance over time. This points to the scope for developing more insights into the relationship between different types of change and performance under public ownership. The following section reviews studies that have examined this question.

1.6 SOE Commercialisation and Performance

Many of the changes faced by state-owned enterprise over the last forty years fall under the rubric of New Public Management (NPM). In broad terms NPM is a reform agenda that involves reconfiguring the boundaries of government agencies (Bilodeau *et al.*, 2006). NPM has a “hybrid theoretical background that combines economic organisation theory emphasising centralisation and contractualism and management theory emphasising devolution and managerialism (Christensen and Laegreid 1999, p.170).⁵ NPM reforms are mainly directed at increasing the market-orientation of government agencies. They encompass a range of organisational

⁵ For a more detailed review of the process of NPM reform see Campbell and Halligan (1992) and Christensen and Laegreid (1998a).

changes including radical measures such as (i) privatisation, either in the form of full divestiture or the introduction of hybrid arrangements such as operational concessions and/or the contracting out of certain services to private companies, (ii) the exposure of government agencies to competition (liberalisation), and (iii) the adoption of an increased focus on profits and commercial performance (commercialisation). Whereas NPM measures such as privatisation have commanded considerable attention in the theoretical and empirical literature, the question of commercialisation in the context of continued public ownership has been covered less extensively.

There is no strict definition of 'commercialisation' in the literature on public enterprise. Much of the extant literature related to commercialisation and performance effectively treats the term 'commercialisation' as meaning 'corporatisation' or as a form of partial privatisation (e.g. Oum *et al.* 2006). Other studies such as Bilodeau *et al.* (2006) focus on the impact of corporatisation on company performance and define corporatisation as a process involving the transfer of the delivery of certain public services from a Government department to a separate agency in order to bring a more 'businesslike' approach to service delivery.

As this research covers changes faced by SOEs beyond the stage of corporatisation, commercialisation is defined here as, where following corporatisation, SOEs move towards a more arms-length relationship with government. The enterprise becomes more focused on commercial objectives such as reducing costs and increasing profits. Government requires the enterprise to cover all operational expenses and to raise funds from the capital market. As the degree of commercialisation intensifies the requirement for government grants and guarantees on finance investments diminishes.

In addition to the changes that occur in the internal environment under the commercialisation process, SOEs are exposed to a number of changes in the competitive and regulatory environments in which they operate. These changes are generally characterised by a gradual liberalisation process within the SOEs core market in addition to the establishment of independent regulatory bodies to replace traditional government regulation. Therefore, any analysis of the determinants that impact a firms performance is made complex by the fact that commercialisation

often coincides with changes in the external environment. Thus, to disentangle the various factors impacting on SOE performance a suitable framework for analysis is required. In this context, this research uses an adapted version of Dunsire *et al.*'s (1988, 1991) model of organisational status change to develop a model of commercialisation. Although the original Dunsire *et al.* model was used to examine the relationship between performance and privatisation, the benefit of this model is that it can also be used to examine the relationship between performance and less extreme cases of reform (i.e. corporatisation or commercialisation). Furthermore, the model can easily be adapted to include additional dimensions within the external environment. As such, there was no alternative model that allowed for a more in-depth analysis of the commercialisation process as described in this research. A description of the original model and subsequent related empirical studies is provided in the next section.

1.6.1 Model of Organisational Status Change

The original Dunsire *et al.* (1988, 1991) model was a three-dimensional model of organisational change developed to examine privatisation across three distinct dimensions: the capital market, the product market and internal organisational structure. The first dimension (capital market status) represents a change ranging from a hierarchical structure directly controlled by government to a private enterprise where rights to profits are clearly defined. The second dimension is concerned with the competitive environment ranging from monopoly to perfect competition, while the third dimension examines change in the internal management structure ranging from a pure hierarchy to a decentralised holding company.

The authors derived a number of workable hypotheses in order to examine how changes across the three dimensions were associated with changes in organisational performance. The three main hypotheses were:

- 1) improvement in enterprise performance is associated with a change in *capital market*, marked by a shift in status in a west to east direction (the 'central hypothesis');
- 2) improvement in enterprise performance is associated with a change in the *product market* or degree of competition encountered; and

- 3) improvement in enterprise performance is associated with a change in *internal management structure* marked by movement away from command-orientation towards results-orientation.

Two subsidiary hypotheses were also tested concerning “propositions that;

- 4) a management change from command-orientation towards results-orientation is associated with an increase in competition; and
- 5) change in internal management structure is associated with change in capital market or in status”. (1991, p.23)

The authors originally applied the framework to ten UK companies that were privatised during the 1980s and found only limited support for the central hypothesis that changes towards private ownership were associated with improved performance. Three sets of indicators were used when testing the central hypothesis, these included: 1) productivity measures (i.e. LP and TFP); 2) changes in employment levels; and, 3) financial ratios (i.e. stock/sale, debtors/sales and sales/fixed assets). The authors concluded that, “although a substantial number of organisations provided partial support, fewer than half of those studied provided completely convincing support for the hypothesis that improvement in performance is associated with status change away from public towards private ownership” (1991, p.29).

Hartley *et al.* (1991) adopted the Dunsire *et al.* model in their examination of the effect of organisational change on ten UK firms. Utilising LP and TFP measures, the authors found that in most cases the results “provide some support for the UK Government’s programmes of setting up agencies at ‘arm’s length’ from direct political control and for privatising state industries. Improved performance, however, is not guaranteed” (p.59).

Parker and Hartley (1991a) examined the impact of organisational reform on ten UK organisations using financial ratios (i.e. Turnover/Average Net Fixed Assets, Stocks/Turnover, Debtors/Turnover, Wages/Expenditure, ROCE and Value-added per employee). Overall the authors concluded that “organisational status changes in the direction of privatisation do not appear ... to *guarantee* improved performance nor does nationalization necessarily worsen performance in terms of the financial

ratios studied” (p.640). However, they do acknowledge that a shortcoming with the study is the use of financial ratios and as such the results should be interpreted with care.

More recently, Palcic and Reeves (2010) applied the Dunsire *et al.* model to their analysis of the Irish telecommunications operator, Telecom Éireann. Using TFP and LP measures the authors analyse the impact of commercialisation and privatisation on performance for the period 1985 to 2001. The authors found no clear evidence that a change in ownership influenced performance and instead noted that improvements in performance were associated with competition and changes in the internal organisational structure of the firm.

The findings of empirical studies adopting the framework are by no means unequivocal and highlight the complex nature of organisational performance. However, the model devised by Dunsire *et al.* (1988, 1991) does offer a systematic framework for examining SOE performance. The complexity associated with analysing commercialisation arises from the fact that it is a dynamic rather than static process where all of the dimensions (capital market status, competition, regulation and the internal environment) influence one another to a certain degree. Therefore, in order to disentangle the complex elements of commercialisation that impact a firm’s performance this thesis utilises an adapted version of the Dunsire *et al.* model.

1.6.2 Conceptual Model of Commercialisation

Before presenting the adapted version of the Dunsire *et al.* model utilised in this research, this section will first describe the theoretical elements of the models three dimensions: 1) capital market status; 2) product market/regulatory environment; and 3) the internal environment.

1.6.2.1 Capital Market Status Change

Traditionally, commercial public enterprises in most Western European countries were operated and financed in a similar fashion to government departments. This was considered by government as a safe option of control; however, the development and growth of the enterprise was inhibited by a lack of operational autonomy (Seidman 1954). In the period immediately following the war, an overreliance on the public sector led to increased pressures upon the managerial

capabilities of both bureaucrats and public servants, so a programme of greater autonomy for public enterprise was introduced in many countries. This involved the formation of statutory corporations which represented a movement away from bureaucratic restrictions (Seidman 1954).

Public enterprise, in its new form, began to pursue economic objectives in addition to its traditional social objectives. However, further development was needed in relation to the legal form of these state companies, as the statutory company form resulted in increased 'red tape' due to the requirement for new amending legislation in the application of any changes to the company (MacCarthaigh 2009). In the case of a statutory corporation the body is established by statute and its powers, duties and functions are explicitly laid out:

...in general, [the statutes] provide for the appointment by the appropriate Minister of the Board and the Chairman, for the approval of the form of the annual accounts, for the appointment of the Auditor and for the furnishing of such information as the Minister requires. The raising of capital, whether by way of issue of shares, by borrowing or by issues from the Central Fund is also provided for; in many ways parliamentary control is secured by fixing the limits on capital and borrowing in such amounts as will require a further approach for an increase within a period of years. (MacCarthaigh 2009, p.8)

This difficulty with the corporation form led to the establishment of limited companies in which Ministers acted as the sole shareholder. Under this new format, public enterprises were allowed greater freedom and flexibility, as they had very wide powers derived from the body of company law (in addition to those from its specific Act).

1.6.2.2 Product Market (Competition) and the Regulatory Environment

A major aspect of change faced by SOEs in recent years has been the increasing exposure of SOEs to competition due to market liberalisation. Liberalisation can be defined as "the introduction of market incentives into industries where state ownership and/or legislation had limited private ownership and new entry" (Pollitt 1999, p.1). The main purpose of liberalisation is to build competitive market structures, where firms can compete against one another within an easily accessible environment. Traditionally, certain services were exclusively provided by the state and this resulted in a lack of choice for consumers. Therefore, the main proposed advantage of liberalisation is that consumers can now choose from a variety of providers whilst benefiting from attractive prices brought about by increased

competition. To survive in these changing environments, it has been necessary for SOEs to adopt an increasingly commercial agenda.

It is generally accepted that the presence of competitive forces in a market will improve allocative efficiency as prices will move towards marginal cost. In the absence of competition, producers will increase prices and decrease production. This is true for both public and private firms (Peltzman 1971; Cremer *et al.* 1987) and this raises important questions about the importance of competition over ownership. According to Hayek (1945) and Leibenstein (1966), the impact of competition on operational efficiency can be broken down into two categories: incentive effects and information effects. The threat of a reduction in market share under competition will incentivise managers to become more efficient. Matchlup (1967) argues that this is due to the absence of supernormal profits in perfectly competitive markets, while Winter (1971) believes that competition is simply a natural selection process that makes adaptation necessary for survival. In the context of the information effect, Holmstrom (1982) and Yarrow (1986) argue that competition provides principals with additional information on cost and agent performance, thus allowing for the application of a more effective incentive system.

Supporters of the liberalisation approach to public sector reform argue that market competition is closely linked with SOE performance. The classical economists (Smith 1776; Ricardo 1817) believed that competition is a process characterised by the free mobility of capital and labour, while the neoclassical economists (Knight 1946; Bain 1951) viewed competition as a state rather than a process that existed due to the free entry and exit of firms. The intensity of competition depends on the number of buyers and sellers within the market. If competition is considered as a process then, according to Schumpeter (1942), it is not price competition that counts but rather the competition from new products, new technology, new sources of supply and new types of organisations. The benefits of market competition can extend to public firms. According to Vickers and Yarrow (1988), government departments seek to maximise economic welfare, and thus:

...given a welfare-maximising government, and assuming for the moment that monitoring of management is equally effective under both types (public and private) of ownership, it is immediately obvious that public ownership has some potential

advantages over the private alternative. In particular, it provides government with additional policy instruments to correct any deviations between social and private returns that arise from failures in goods and factor markets.

(p.28)

Therefore, Vickers and Yarrow (1988) argue that public enterprises are not always less efficient than private enterprises within a competitive environment and as a result, market liberalisation can have far reaching benefits.

Market liberalisation has been a significant development for many SOEs where commercial performance has been negatively impacted by the fact they: operated in non-competitive environments; were encumbered by non-commercial objectives; were managed in a bureaucratic style rather than an entrepreneurial style; were impeded by government intervention; lacked incentives to improve performance; and had no accountability for results (Shirley and Nellis 1991). However, it should be recognised that even with full liberalisation, competition can be slow to develop in certain markets. This is often the case for key network industries such as transport, post, gas and electricity, and this often necessitates the presence of a regulatory body.

Regulatory mechanisms play an important role in determining price, quality of service and other competitive conditions. Traditionally, public enterprises in many European countries were regulated at Ministerial level, however, the number of independent regulatory bodies has increased since the mid-1990s. Gilardi (2005) suggests a number of reasons for the international growth in independent regulatory bodies, these include: 1) similar challenges experienced by countries at the same time that necessitated the same response; 2) international organisations may have been willing and able to promote or impose the establishment of independent regulation; and 3) increasing interdependence between countries institutions required common regulatory structures (e.g. Levi-Faur (2004) highlights the important ‘net impact’ of Europeanisation on regulatory reform). The scope “of economic regulation is largely confined to activities that are, by and large, in the non-traded sector and hence not subject to competition from producers located elsewhere in the EU and beyond” (Gorecki 2011, p.180). In addition, key elements of these regulated sectors are classified as natural monopolies (e.g. electricity distribution and

transmission network) or oligopolistic with high barriers to entry (e.g. electricity generation).

The role of the regulator is to advance the interests of the collective; however, it is argued that the government (in its role as majority shareholder) may be inclined to promote the interests of the SOE over those of the collective (Stigler 1971; Posner 1974; Peltzman 1976). According to Parker (2002), a prerequisite for efficient and effective regulation is a political system with a commitment to arm's length or independent regulation. In an Irish context, the benefits of independent regulation over Ministerial regulation are outlined by Gorecki (2011) and include reductions in conflicts of interest and regulatory capture. Conflicts of interest in the case of Ministerial regulation can often lead to distorted pricing and investment decisions and generally arise within four areas: 1) political considerations where the Minister's decisions can be influenced by short-term electoral factors; 2) regulatory considerations where the Minister's decision can be influenced by the regulated entity due to a possible lack of expertise within the Department; 3) ownership considerations where the Minister is concerned with maintaining the value of the SOE and as a result may make decisions that cannot be justified, and 4) policy preference where the Minister may make decisions based on the accommodation of policy preferences by the regulated entity. In contrast, it is unlikely that an independent regulator would be subject to such conflict as:

...the regulatory agency's decisions are concerned with meeting its statutory objectives and in making decisions in accordance with these objectives it does so within the appropriate time horizon, with its reasoning presented in a published decision. This is more likely to be conducive to regulatory certainty and predictability than regulation by the Minister.

(Gorecki 2011, p.184)

Regulatory capture is where the regulator acts in the interest of the regulated entity. In this case "a low evidentiary threshold is likely to be set for price increases; the entry of new firms is likely to be refused or made difficult; and, other regulatory decisions are likely to benefit the incumbent regulated firm(s)" (Gorecki 2011, p.186). Regulatory capture can occur in both Ministerial and independent regulatory regimes. However, it is argued that it is Ministerial regulation that is more susceptible to capture as there is often close interaction between the regulated entity and the Minister (as owner) and this can sometimes result in the interests of the firm

becoming identifiable with government policy. In contrast the independent regulatory body has no interest as a shareholder and so decisions will be made in the interest of the public. In addition, processes under an independent regulatory regime are generally significantly more transparent, making any decisions subject to increased scrutiny by consumers and stakeholders. Thus, the presence of an independent regulator significantly reduces the risk of regulatory capture and ensures that consumers benefit from quality services at affordable prices.

1.6.2.3 Internal Environment

Within the commercialisation process there are a number of complex elements that change within the internal setting of the organisation and as such the performance of the SOE is contingent on this “complex set of factors interacting with the external environment” (Parker 1995). Expanding on the work of Dunsire *et al.* (1988, 1991), Parker (1995) argues that while an organisational status change (such as commercialisation) affects performance, this acknowledgement itself sheds no light on the mechanisms which affect performance. Instead it is necessary to examine changes in a number of elements of the internal environment and Parker (1995) asserts that “the effectiveness of an organisation is contingent on a degree of match between its external environment and its internal characteristics” (p.32). An SOE’s response to a changing external environment is best reflected in changes to the company’s internal characteristics as highlighted by Parker (1995). These include: company objectives; nature and location of the business; organisational structures; and, management structures.

Within the commercialisation process, the organisation will adapt its objectives to complement the external environment in which it is now operating. This change is often explicitly stated in a company’s new mission statement, which will more than likely promote a more customer-focused, cost aware and profit-orientated approach for future operations (Shirley and Nellis 1991).

In response to challenges such as limitations on current operating scope, mature or over-mature markets and the threat of competition, SOEs will seek opportunities to expand into related areas of activity. In the case of commercial SOEs, expansion will generally occur through the development of existing activities or diversification into areas outside of its core activities. This allows the enterprise to expand its revenue

making potential by utilising experience and skills that already exist within the confines of the organisation.

A main part of the corporatisation and commercialisation process is a change in the organisational structure, which encompasses a move from a hierarchical environment to a more autonomous and decentralised structure. This re-organisation may lead to the establishment of several different divisions within the company each with a specific focus (e.g. finance, marketing, sales and customer service). This change also affords the company the opportunity to reduce costs by outsourcing certain activities.

SOEs tend to have similar management structures often popularised by multi-lateral organisations like the OECD (Bernier 2015). In the case of top management, Parker (1995a,b) argues that, in general, public sector managers (who are often political appointees) may not have the required skills or experience to implement major internal changes in response to a significant change in organisational goals or the external environment. It is therefore often necessary to import “new management which does not carry the baggage of the past” in order to bring about significant internal restructuring and change. The structure of public enterprise can allow for the manifestation of entrepreneurship. Entrepreneurship is often perceived to be incompatible with general public sector organisations that are characterised by social and political goals. These organisations are not exposed to market conditions that require cost efficiency and as such constrain the development of entrepreneurial skills. However, the complexity of these organisations allows for the potential development of new organisations, services and processes (Bernier and Hafsi 2007). This should be true in the case of “public enterprises where financial resources are more easily obtained than elsewhere in the public sector and, thus, where slack is greater” (Bernier 2014, p. 258). Parker (1995b) also highlights the corresponding importance of changes at the Board level, both in terms of its membership and its activities where it may be expected to become more concerned with strategy than with day-to-day operational matters as the company continues to commercialise.

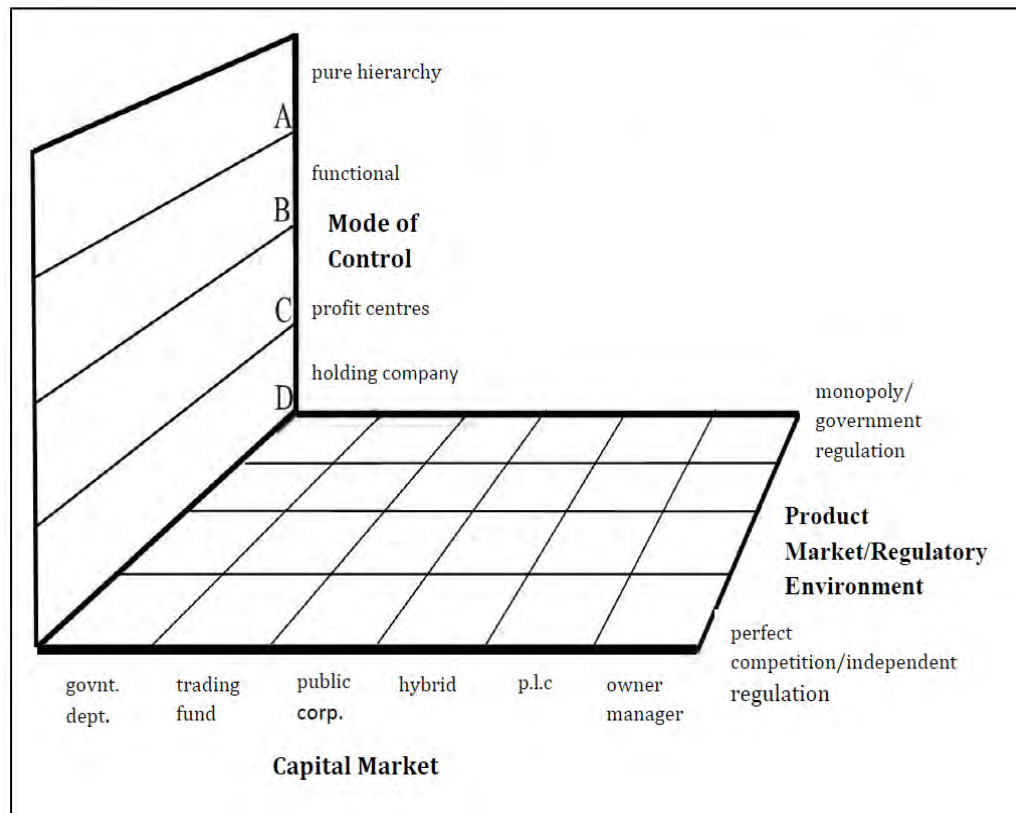
This section has described the main theory underpinning the three dimensions of change (capital market status, product market/regulation and the internal

environment) that together provide a useful framework for the analysis of commercialisation and performance of SOEs. The next sub-section presents the conceptual model of commercialisation adapted from the work of Dunsire *et al.* that is used for the company analyses in chapter 4 and 5.

1.7 Model of Commercialisation

The first dimension of the model – capital market status (shown along the horizontal axis in figure 1.1) – covers a continuum of statuses ranging from a hierarchical government department characterised by direct Ministerial control (most westerly point) to the owner-manager firm with clearly defined rights to profits (most easterly point). This change is not characterised by an immediate transformation from government department to a privatised company but rather by steps on a continuum representing various degrees between these two extremes. Non-commercial entities become increasingly focused on commercial objectives as they move along this continuum and it is expected that this will have a positive impact on performance. As the organisation moves along this continuum it becomes more ‘commercial’. An early change in this context can be corporatisation, which involves a transition from government department to a separate commercial entity (SOE). These entities are autonomous with regards to management, however, the shareholders (i.e. the government) expect these enterprises to adhere to financial and regulatory conditions.

Figure 1.1: Conceptual Model of Commercialisation



Source: Authors' adaption of the original organisational status model presented in Dunsire *et al.* (1991, p. 22).

The second dimension of the original model captures changes in product market competition faced by organisations. This product market dimension covers a continuum based on different levels of competition ranging from perfect competition to monopoly. In the context of SOEs this dimension captures the forces of market liberalisation and the changes experienced by once dominant state-owned monopolies as they are exposed to higher levels of market competition. It is expected that increases in competition are associated with an improvement in performance. For the purpose of this research, this dimension is adapted to also include changes in the regulatory environment. The degree of competition/regulation present in the market is an important determinant of a SOEs performance as it is necessary for the enterprise to either improve efficiency in order to survive in an increasingly competitive environment or operate within certain constraints in a heavily regulated environment. It is expected that an increase in competition and a movement from government regulation to independent regulation is associated with an improvement in performance.

The third dimension of the model covers changes to the structure and internal governance of the organisation. The statuses captured by this dimension range from pure hierarchy to a holding company:

Pure hierarchy is characterised by: ‘Orders of the day’, ‘Daily Duties List, Daily Posting etc. for the whole organisation, Large manuals of procedure, Itemised release of funds – few internal budgets. Upward referral of all problems expected. High visibility of rank and status. Salary scales by rank and seniority.

Holding company is characterised by very small corporate HQ, with some arm’s length financial monitoring but no staff or production performance monitoring. Congeries of distinct subsidiary companies, each with own boards of directors, accounts, markets etc. No corporate salary structure except for HQ personnel.

(Dunsire et al. 1991, p.30)

It is important to note that a movement in the capital market status dimension (west to east) does not necessarily result in a movement within the mode of control dimension (A to D) as decentralisation “may not necessarily and always be a ‘good thing’ in itself for a particular organisation at a particular time. The organisational design literature agrees that there are contingencies for which any particular structure will be most appropriate” (Dunsire et al. 1991, p.31). It is assumed that performance improves as the organisation moves away from a hierarchical structure that often characterises public organisations (a movement away from point A towards point D in figure 1.1). This dimension of the model is adapted to include internal characteristics as described by Parker (1995). These include: company objectives; nature and location of the business; organisational structures; and, management structures (BOD and top management). A change in any of these characteristics will influence a movement away from a hierarchical structure and it is expected that this will be associated with an improvement in performance.

1.8 Conclusion

This chapter reviews the literature on public enterprise relating to its evolution, performance and reform. The theoretical and empirical literature presented here provides a context for the analysis of commercialisation of Irish SOEs in subsequent chapters. There have been a number of motivations, both economic and social, for the creation of SOEs. These range from providing a solution to market failure, to

promoting regional growth through job creation, to providing uneconomic but socially necessary services. SOEs were at the forefront of service provision in many Western European countries for the first half of the 20th century, however, deterioration in SOE performance in the 1950s and 1960s led to the introduction of programmes for reform and privatisation. This chapter outlines the theoretical underpinning (i.e. theories of government failure) of these reforms.

This chapter also reviews empirical studies on SOE performance. These studies vary in terms of scope and time frame, with some focusing on a single country analysis and others on cross-country. The ambiguous nature of the evidence presented indicates that there is no clear consensus on the impact of ownership (i.e. public versus private) on the performance of a firm with some studies highlighting the superseding importance of other factors such as competition and regulation. In the case of Ireland, there are a limited number of studies on the performance of Irish SOEs. These studies focus only on standard financial measures and as such provide impetus for the economic analysis undertaken in this thesis.

This chapter presents a conceptual model of commercialisation adapted from Dunsire *et al.*'s (1988, 1991) model of organisational status change. In addition to outlining the key components of the Dunsire *et al.* model, a brief review of the use of this model in the empirical literature was provided. Following this, the dimensions of the adapted commercialisation model (capital market, product market, regulation and the internal environment) were described in detail in terms of their theoretical underpinning and relevancy regarding SOE performance. This model of commercialisation allows for a more in-depth analysis of the factors that impact performance and is applied to the two case-based analyses in chapters 4 and 5.

Before examining the commercialisation and performance of Irish SOEs it is necessary to take stock of the environment in which they operate. As such the next chapter provides an overview of the Irish SOE sector in terms of its size and contribution to the Irish economy. In addition, policy developments in relation to the SOE sector at both a broad and sector-specific level are discussed.

Chapter 2: The SOE Sector in Ireland: An Overview

2.0 Introduction

Public enterprise has played a major role in the economic development of the Irish State and continues to have a major presence in sectors that are critical in terms of economic performance and the welfare of all citizens (Sweeney 1990, 2004; Forfás 2010; Palcic and Reeves 2011). Over time, the composition of the SOE sector, the market structures in which they operate, their objectives and their performance have been subject to change as government policy has shifted and companies have responded to new challenges that have altered the environment in which they operate.

The last 15-20 years, which command the focus of this thesis, has been a period in which Irish SOEs have sought to adjust to many new challenges. SOEs have operated in a turbulent domestic economic environment that has gone from boom to bust, and now shows real signs of recovery after a period of unprecedented fiscal austerity. A number of public policy measures have resulted in the formation of new SOEs (Irish Water and the National Asset Management Agency), the nationalisation of the domestic banking sector and the privatisation of a small number of enterprises, which have resulted in changes to the composition of the SOE sector and the nature of their presence in some sectors. The competitive environments in which some SOEs operate have been characterised by an intensification of competitive pressures, while government policy continues to constrain SOEs by assigning public missions that undermine the prospects of achieving financial viability.

Against this backdrop, this chapter sets the scene for later chapters which focus on the question of company performance in the context of the changes faced by SOEs over the last 15-20 years. The purpose of this chapter is to take stock of the Irish SOE sector (as of 2015) in terms of its size and contribution to the Irish economy. It proceeds to review the principal policy developments in relation to the SOE sector over the last 15-20 years. These developments include changes to government policy that have impacted the entire SOE sector (e.g. commercialisation, privatisation and liberalisation) as well as sector-specific policies in relation to aspects such as competition, investment and financing. This review of the policy environment in

which SOEs have operated provides a context for the analysis of SOE performance that is conducted in later chapters.

2.1 Irish SOE Sector: Size and Contribution

State Owned Enterprises (SOEs) have made a vital and significant contribution to Ireland's economic and social development. MacCarthaigh (2009) estimates that a total of 69 SOEs have been established since the formation of the Irish Free State in 1922. By the 1980s there were over 20 commercial SOEs operating in strategically important sectors of the economy such as telecommunications, energy, transport and banking. Sweeney (1990) estimates that in 1987, the non-financial commercial public enterprise sector accounted for 6.3 per cent of GNP, over 18 per cent of gross domestic capital formation and 6.1 per cent of employment.

Table 2.1: SOE Financial Indicators 2015

Sector	SOE	Turnover (€000)	Employee No.	Operating Profit (€000)	ROS (%)	ROCE (%)
Energy	Bord Gáis	491,108	1,404	182,197	37.1	7.2
	Bord na Móna	432,820	1,937	58,599	13.5	9.3
	Coillte	282,909	897	78,892	27.9	5.2
	ESB	3,335,401	7,305	635,367	19.0	4.3
Transport	Bus Éireann	340,766	2,487	2,028	0.6	-4.3
	Dublin Bus	286,226	3,313	20,332	7.1	7.6
	Irish Rail	445,041	3,793	29,538	6.6	-0.2
	DAA	679,758	3,300	157,690	23.2	6.9
Other	An Post	826,069	9,862	5,162	0.6	0.6
Total		7,120,098	34,298			

Source: Company annual reports for 2015. Note: Bord na Móna figures are reported as of the 12 months to March 2013. All other companies are reported as of the 12 months to December 2013.

Although 11 SOEs have been privatised since 1991, the SOE sector in Ireland today continues to have a major presence in sectors such as energy, communications and transport. Table 2.1 provides information on the size and profitability of the nine largest non-financial SOEs.⁶ It shows that in 2015 the total turnover of the SOEs included in this analysis amounted to 2.9 per cent of GDP, while the total number of employees represented 1.5 per cent of total national employment.

⁶ As a result of the Irish banking crisis in 2008-09, the government was forced to fully or partially nationalise a number of the main banks in Ireland. These banks are excluded from the analysis as they are likely to be returned to the private sector as soon as possible. In addition, a number of SOEs including VHI and RTÉ were excluded from the analysis due to inconsistencies in the data collected.

Table 2.1 also shows that SOEs operating in the energy sector account for most of the profits generated in the SOE sector. The largest and most profitable SOE is the ESB (Electricity Supply Board), which owns the electricity transmission and distribution network in both the Republic of Ireland and Northern Ireland. Bord Gáis (now known as Ervia) is the next most profitable company, and is the owner of the national gas network (as well as the newly established national water utility, Irish Water). Bord na Móna (an integrated utility involved in peat production, waste management and power generation) and Coillte (forestry and renewable energy) are both relatively smaller players in the energy market but nonetheless make significant profits and contribute much to non-commercial goals such as regional development and employment.

The Dublin Airport Authority (DAA) is the most profitable of the transport companies included in this study. The DAA manages both Dublin and Cork airports and has established itself as a key player in the international airport retail sector. The company reported healthy profits in 2015, reflecting the increase in passenger numbers experienced by both Dublin and Cork airports as the Irish economy began to recover post-crisis. Although table 2.1 shows that An Post achieved the second highest turnover of the SOEs included in this study, the company's operating profit was the third lowest. This is primarily due to the labour intensive nature of the company's activities (employee numbers are 35 per cent higher in comparison to the ESB) and a decline in general postal volumes in recent years.

The commercial enterprises that remain under government ownership continue to fulfil a number of important public policy objectives in that they: 1) provide services that are essential to the functioning of the Irish economy and society including energy, transport and communication services; 2) serve as instruments of government policy by providing goods and services in sectors characterised by market failures (e.g. network industries where economies of scale apply); 3) fulfil public missions by providing public goods that have appreciable societal value but cannot be provided on a commercial basis (e.g. rural post and transport); and 4) serve as conduits for public investment in critical infrastructure in sectors such as gas, electricity and transport. In this context, the objectives of SOEs and the

strategies and actions they adopt are largely dictated by government policy. The objective of this chapter is to identify the main thrust of government policy on SOEs in Ireland. As the case study analysis in later chapters covers a time period that dates back to the 1980s, this analysis of policy take a historical perspective and seeks to identify how the main policy objectives have shifted over time. Shedding light on changes to the broad thrust of government policy on SOEs provides an important context for the performance analysis presented in later chapters.

2.2 Evolution of Irish SOE Policy

Historically, government policy on Irish SOEs has gone through a number of different stages where policy was shaped by prevailing priorities that often depended on wider economic circumstances and changes to national and international (mainly European) institutions and regulations. The traditional approach of Irish government to its SOEs has never been elaborated beyond creating ‘public value’ and as such the “defining feature government policy towards Irish SOEs has been the relative absence of strong ideological views over state intervention” (MacCarthaigh 2011, p.221).

Prior to the 1960s, the financial or economic performance of Irish SOEs received little coverage in terms of analysis by academics or policymakers. Bristow (1972) notes contributions by former Taoisigh (Prime Ministers) Seán Lemass (1959) and Garrett Fitzgerald (1961) which were largely concerned with organisational issues such as the relationship between Ministers and Boards and the limits of parliamentary power in regard to these bodies. Bristow posits that the lack of attention to SOE performance was attributable to the fact that these enterprises were originally established for reasons that were specific to individual cases. There were, therefore, no overall policy objectives that could be given operational significance that would serve the basis for monitoring performance. In addition, as SOEs did not create financial difficulties for government at the time (the vast majority at least broke even) “the prevailing view was that efficiency required the minimum interference with the operations of these enterprises (Bristow 1972, p.169).

The economic turbulence of the post-oil crisis period in the early 1970s gave rise to a new era in which SOE performance became the subject of significant scrutiny and

concern. The primary reasons for these developments were (a) the contribution of SOEs to the increasing level of national debt; (b) cost overruns on capital investments by some companies; and (c) the poor financial performance of many individual companies (Reeves 1997). These problems led to the ushering in of a new era in which the overarching emphasis of SOE policy was based on improving their financial performance and increasing the commercial orientation of their operations. The need to improve the financial performance of the SOE sector was the dominant theme of a number of reports published in the early 1980s all of which recommended that 'primary emphasis [...] be placed on commercial viability and profits' (*Building on Reality*, 1984, p.67). Most SOEs adopted an increased business focus from the mid-1980s onwards. Sweeney (1990, 1998) analysed the financial performance of the SOE sector since the early 1980s and concluded that:

...state-owned companies, including the monopolies have been commercialised. Several of them had been unprofitable, poorly managed, and some made poor investments. All shifted into a far more commercial mode in the period under review (1987-96). Most are now profitable

(Sweeney, 1998, p.96)

Whereas SOE policy in the late 1970s and 1980s was largely characterised by an identifiable broad thrust aimed at the commercialisation of all companies, the increasing integration of the European Union raised new challenges that altered the approach to SOE policy from the late 1980s onwards. The introduction of market liberalisation (which was rolled out at different speeds in many of the sectors in which SOEs operated) as well as EU restrictions on state aid to SOEs, meant that SOE policy (as set by government, the officials and Ministers of sponsoring departments, and company boards and management) became more focused on individual companies and sectors (for example, electricity, telecommunications and transport). A wave of privatisation began to spread throughout Europe in 1980s, however, Barrington noted that by 1985 the sale of state enterprise had not arisen in Ireland (Barrington 1985, p.287).

Table 2.2: Privatised SOEs in Ireland and Exchequer Proceeds (1991-2006)

Company	Sector	Year of Sale	Exchequer Proceeds (€000)
Irish Sugar	Agri-Food	1991	210,650.8
Irish Life	Insurance	1991	601,930.8
B&I Line	Sea Transport	1992	10,792.8
Irish Steel	Manufacturing	1996	0
Telecom Éireann	Telecommunications	1999	6,399,907.9
Industrial Credit Corporation	Banking	2001	322,274.8
Trustee Savings Bank	Banking	2001	408,350.3
Irish National Petroleum Corporation	Energy	2001	20,000.0
Agricultural Credit Corporation	Banking	2002	154,603.0
Aer Lingus	Air Transport	2006	240,902.3
Total			8,369,412.7

Source: Palcic and Reeves (2011).

The 1990s heralded an era of significant change in relation to SOE policy, particularly in relation to ownership and competition. In 1991 the Irish government completed the first privatisation of an SOE with the Irish Sugar company floated on the stock exchange. This was the first of a number of sales between 1991 and 2006 (see table 2.2) that resulted in the exchequer accruing revenues of over €8.3 billion (see Palcic and Reeves 2011). Whereas the precise set of rationales for privatisation differed from case to case, the impact of the EU liberalisation agenda was an important driver of the decision to privatise SOEs in sectors including telecommunications, air and sea transport, steel production and banking (Palcic and Reeves 2011).

Despite a significant level of privatisation prior to the economic crisis, SOEs remained active, and in many cases dominant, in sectors of huge importance to the economy and society such as electricity, gas, rail and postal services. In policy terms, there were no official statements or reports that set out policy objectives for the SOE sector as a whole. Instead, SOE policy in the pre-crisis era (1992-2008) was largely focused on individual companies and sectors and covered issues related to privatisation, liberalisation and regulation. Post-crisis, however, a more wide-ranging approach to policy on SOEs emerged. The fiscal crisis prompted the establishment of a Review Group on State Assets and Liabilities that examined the

activities and broad financial performance of the Irish SOE sector. The report of the Review Group, published in April 2011, covered a wide range of issues relating to public enterprise governance, sectoral regulation and the restructuring of certain companies. Based on its review the report recommended the privatisation of the majority of commercial SOEs in operation. Ireland's entry into a bailout programme of support from the Troika (ECB, EC and IMF) in December 2010 significantly altered the decision-making context around any potential divestitures with privatisation targets included in a number of the MoUs agreed between the Irish government and the troika over the course of the bailout programme (see Palcic and Reeves 2013).

The emergence of a policy agenda covering the whole SOE sector was given momentum in the run-up to the general election in March 2011, when Fine Gael (the lead party in the current coalition government), articulated a clear and specific plan for the SOE sector in terms of key aspects of policy including ownership, governance and investment. Their *NewERA* plan articulated a vision for investment in vital infrastructure in sectors such as energy, communications and water infrastructure that was largely based on public ownership of key utilities in these sectors (with the exception of telecommunications). The principal features of the plan included:

- the establishment of five new SOEs – Smart Grid, Gaslink, Broadband 21, Irish Water, and Bio-energy & Forestry Ireland – using existing SOE assets for the principal purpose of addressing Ireland's deficit of critical infrastructure;
- the establishment of structures (including a strategic investment bank) for providing SOEs with the funding required for large-scale investment in infrastructure, with envisaged sources of funding being Ireland's sovereign wealth fund (the National Pension Reserve Fund (NPRF)), revenues from the privatisation of "non-strategic" assets. and the European Investment Bank; and
- provisions to alter the governance structure of SOEs with the establishment of a holding company (called NewERA) to hold shares in the relevant

commercial SOEs and have discretion on raising finance for relevant SOEs (Fine Gael 2010).

The NewERA plan was initially driven by the collapse of investment levels in the Irish economy after the crisis and the identification of public enterprise as an important conduit of investment in the post-crisis period. NewERA, as originally envisaged, constituted a plan for a significant re-structuring of the ownership, governance and financing of the Irish SOE sector. It was based on a degree of privatisation which was confined to non-strategic assets, but it placed public ownership of network companies (and a renewable energy company) at the centre of plans for infrastructural investment in the Irish economy.

Since its launch there has only been a modest degree of progress towards implementing the NewERA plan. A junior Ministerial position responsible for NewERA was created in 2011 but was discontinued in 2014 after a cabinet reshuffle. In September 2011, NewERA was established on a non-statutory basis within the NTMA as a corporate advisor and centre of excellence for the management of SOEs within its remit.⁷ Under the centre for excellence agenda NewEra has developed a Shareholder Expectations Framework that is “intended to provide clarity and guidance for each of the commercial State bodies within its core remit in relation to Government’s strategic priorities, policy objectives, financial performance and reporting requirements for each body” (NTMA 2015). NewERA was put on a statutory footing in an advisory capacity in 2014. At the same time a new Irish Strategic Investment Fund (ISIF) was established and granted the remit for investing in projects including infrastructure projects that may involve lending to existing SOEs.

In terms of government plans for the network companies in State ownership, there has been only limited progress in establishing newly constituted network-based SOEs. A new Irish Water utility has been established and the gas utility has been broken up with the sale of its retail division in 2014 leaving the gas network under public ownership. There has been no progress with separating out the network

⁷ The National Treasury Management Agency (NTMA) is the agency responsible for managing the assets and liabilities of the Irish Government. The SOEs within NewERA’s remit include ESB, Bord Gáis, Eirgrid, Bord na Móna Coillte and Irish Water. Irish Water has only been in operation since 2013 and therefore not enough time has elapsed to allow for its inclusion in the analysis.

business of the ESB's operations to create 'Smartgrid', with the ESB remaining as an integrated electricity utility. There has also been no obvious progress on the development of a new national broadband network company through the amalgamation of various State-owned telecoms assets (to create 'Broadband 21') and no move to merge Bord na Móna and Coillte to create a new integrated utility (BioEnergy Ireland).

Originally drafted plans around privatisation have been only part-realised. The largest sale has been that of the retail division of the gas utility (formerly Bord Gáis Éireann) which was sold (along with other assets including electricity generating plants) for approximately €1.04 billion. In addition, the government raised €405 million from the sale of the licence to operate the National Lottery. In 2013, the planned sale of harvesting rights owned by the national forestry company (Coillte) was abandoned in the face of public opposition. Following an extended period of negotiation, the government also sold its remaining 25 per cent shareholding in the national airline, Aer Lingus, to the International Airlines Group (IAG) for approximately €1.4 billion in 2015.

The cautious approach adopted by government in selling its remaining stake in Aer Lingus can be explained by concerns around public interest issues such as employment and possible implications for the connectivity of Ireland's island economy (and its regions) with external markets and trading partners. The government's caution was also explained by uncertainty about the political impact of any sale of its remaining shareholding and the fact that public opinion around the potential sale was quite divided.

The controversy surrounding the newly established Irish Water utility has also highlighted widespread concern about the potential privatisation of vital public services. The new publicly owned utility was established in 2013 and has assumed responsibility for all aspects of the water services sector which had hitherto been the responsibility by individual local authorities. The establishment of Irish Water has been met by enormous levels of public opposition that are largely focused on the introduction of domestic water charges but also based on concerns around the potential privatisation of the company. To date the government has given assurances that the new utility will remain in State hands. It has however stopped short of

meeting demands for a change in the constitution to secure Irish Water in state ownership.

The cases of both Irish Water and Aer Lingus illuminate the political sensitivity that surrounds the potential privatisation of some SOEs and the significant public support for state ownership of such companies in the post-crisis era. Apart from these largely ownership-related issues, and the limited progress in relation to the NewERA plan, most of the policy developments impacting on SOEs over the past two decades have been at the sectoral level. The next sections therefore examine the main policy changes that have occurred in the energy, transport and postal sectors and how they have impacted on the commercial SOEs operating in these sectors.

2.3 Policy Developments in Specific Sectors: Energy, Transport and Post

The adoption of privatisation and liberalisation measures from the early 1990s brought about a discernible shift in government policy on SOEs whereby increased emphasis was placed on individual companies and specific sectors. This shift in policy emphasis has been particularly evident in sectors where SOEs held monopolistic or dominant positions such as postal services, gas and electricity, and transport. The objective of this section is to describe policy developments in these sectors and to provide a context for subsequent chapters which focus on the SOE performance.

2.3.1 Energy Sector

The government has always played a major role in the development and management of key elements of the Irish energy sector. Given the importance of the energy sector to the Irish economy the government has implemented a number of policy initiatives within areas such as: 1) competition and regulation; 2) investment; 3) sustainability, security of supply and competitiveness; and 4) financing.

Competition & Regulation

There was significant change in the energy sector in 1999 with the enactment of the *Electricity Regulation Act*. In addition to providing the legislative foundation for the liberalisation of the Electricity market, the 1999 Act established the Commission for

Energy Regulation (CER) as the regulatory authority responsible for overseeing the liberalisation process in the Irish energy market.

Table 2.3: Liberalisation Stages in the European Energy Sector

Liberalisation Directives for European Electricity Market	
1996 (96/92/EC)	<ul style="list-style-type: none"> • Set minimum requirements to open electricity market to allow large volume consumers (i.e. industrial consumers) access to competing suppliers. • Set basic requirements for negotiated and regulated access to network. • Ireland required to implement Directive by 2000
2003 (2003/54/EC)	<ul style="list-style-type: none"> • Enabled new electricity suppliers to enter member states' markets. • Enabled consumers (industrial from 2004 and residential from 2007) to choose their own electricity supplier. • Ireland required to implement Directive by 2005
2009 (2009/72/EC) Ireland: 2010	<ul style="list-style-type: none"> • Regulated transmission network by separating supply and production activities.
Liberalisation Directives for European Gas Market	
1998 (98/30/EC)	<ul style="list-style-type: none"> • Set minimum requirements to open electricity market to allow large volume consumers (i.e. industrial consumers) access to competing suppliers. • Set basic requirements for negotiated and regulated access to network. • Ireland required to implement Directive by 2000
2003 (2003/55/EC)	<ul style="list-style-type: none"> • Enabled new electricity suppliers to enter member states' markets. • Enabled consumers (industrial from 2004 and residential from 2007) to choose their own electricity supplier. • Ireland required to implement Directive by 2005
2009 (2009/73/EC)	<ul style="list-style-type: none"> • Regulated transmission network by separating supply and production activities.

Source: European Commission (1996-2009)

Prior to the introduction of the liberalisation directives outlined in table 2.3, the ESB and Bord Gáis held a monopoly position within the electricity and gas sector. Competition within both sectors has developed significantly over the last decade. In 2015, there were eight suppliers in the retail domestic and business electricity market and seven in the gas market. Overall, non-incumbent suppliers accounted for 45 per cent of the domestic electricity market and just over 48 per cent of the domestic gas market (CER 2015).

Investment

While the degree of involvement in the provision of infrastructure can vary across industries, the energy SOEs included in this study have a statutory obligation (see Appendix A) to both provide and maintain the infrastructure necessary for the successful provision of its core service.

Table 2.4: Energy SOEs Capital Investment 2001 to 2015

SOE	2001-05	2006-10	2011-15	Total
Bord Gáis*	1,353.5	1,838.8	791.4	3,983.7
Bord na Móna	79.8	215.4	108.8	404
Coillte	239.2	310.2	223.9	773.3
ESB*	4,723.7	6,482.6	3,734.3	14,940.6
Total	6396.2	8847.0	4185.8	20,101.6
% of GFCF	3.4	4.2	3.1	3.7

Source: Authors' calculations from capital expenditure figures reported in company annual reports and Gross Fixed Capital Formation (GFCF) figures for the Irish economy sourced from the Central Statistics Office. Note: *denotes a network company.

Table 2.4 shows that, the capital investment of energy SOEs over the period 2001 to 2015 has been cyclical, with just over €20 billion in total invested, accounting for close to 3.7 per cent of Ireland's gross fixed capital formation. The ESB accounted for just over 74 per cent of investment carried out over the period, with much of this spent on upgrading and extending Ireland's electricity transmission and distribution network. In the gas sector, Bord Gáis more than doubled the size of its pipeline network between 2001 and 2015, investing approximately €4 billion over the period (19.8 per cent of total investment).

Public investment in SOEs has traditionally been justified on the basis of their contribution to a country's economic and social development. However, fiscal constraints have limited the scope for exchequer funding of capital investment by SOEs. It is therefore noteworthy that in the Irish case all of the energy SOEs included in this study fund their investment through a combination of revenues and borrowings. Table 2.5 shows that the ESB and Bord Gáis had the highest levels of borrowings as of 2015, with both companies successfully accessing international debt markets. It should, however, be noted that each SOE included in table 2.5 is required to operate within the confines of a statutory borrowing limit, unless it has received prior approval from the relevant Ministers.

Table 2.5: Energy SOE Borrowings 2015

	Net Debt (€m)	Short Term Debt (€m)	Long Term Debt (€m)	Debt/Equity (%)	Statutory Borrowing Limit (€m)
ESB	4,975	419	4,690	132.4	6,000
Bord Gáis	1,912	152	1,024	103.2	3,000
Bord na Móna	133	26	203	103.2	400
Coillte	171	1	188	23.8	400

Source: company annual reports. Notes: (1) short term debt is made up of borrowings reported as current liabilities (falling due within one year), whereas long term debt includes borrowings reported as non-current liabilities (falling due after one year); (2) Debt/Equity is calculated as total borrowings (current and non-current) divided by total equity.

Sustainability, Security of Supply and Competitiveness

While the environment within which policy must operate has changed in the last two decades, the key objectives have remained the same. These objectives were formerly outlined in the 2007 White Paper on Energy Policy and restated in the governments most recent white paper on *Ireland's Transition to a Low Carbon Energy Future* published in 2015. Ireland's energy policy addresses three core objectives: sustainability, security of supply and competitiveness. It also addresses the need for affordable energy for domestic and business consumers. While these objectives are largely influenced by EU Directives governing energy policy, it should be noted that national social, economic and employment issues are also of importance.

In the last decade, the issue of climate change has become a global concern and as such every country, including Ireland, has a responsibility to ensure that effective policy is in place to reduce carbon emissions. Under the United Nations Framework Convention and the Kyoto Protocol, EU countries must reduce gas emission by between 40 and 70 per cent by 2050 with an interim target of 20 per cent by 2020. Since the publication of the 2007 White Paper, Ireland has significantly increased its energy efficiency and sustainability through renewable energy generation and use. In 2014, renewable energy sources (wind, hydro, landfill gas, biomass and biogas) accounted for approximately 23 per cent of Ireland's electricity consumption (representing roughly 9 per cent of its 2020 target) and CO₂ emissions were reduced by 2.6 million tonnes (White Paper 2015). This was largely achieved through the implementation of two National Energy Efficiency Action Plans (NEEAP) in 2009 and 2013, which delivered carbon and energy costs saving for the economy through a number of programmes. The main elements of the 2015 White Paper in relation to

renewable energy are focused on the areas of electricity, housing and transport, and include: updates to building regulations, new generation support schemes, bio-energy plans, a national smart-drive programme, and a biofuels obligation scheme.

Ireland's energy policy in relation to security of supply is focused on maintaining the security of the energy system in the most cost effective manner. It is necessary to ensure that operational measures are in place to mitigate risk and recover from potential disruptions as an interrupted supply of energy could have significant consequences for the country's economy. This is particularly true in the case of Ireland's gas supply as approximately 50 per cent of Ireland's electricity generation is dependent on gas (White Paper 2015). Therefore, the development, maintenance and upgrade of the electricity and gas network is essential. The 2015 White paper outlines a number of measures to be implemented to enhance security of supply, these include: diversifying the energy supply to include more renewables and reduce reliance on imported fuel,; greater deployment of sustainable technology, and the enhancement of energy storage.

Another important element of Ireland's energy policy is the assurance of a competitively priced energy supply and competition in the market. Energy prices in Ireland, particularly with regards to electricity, were traditionally high as a result of higher input costs, low availability of power generation plants and an overreliance on imported fossil fuels. Since 1992, the drive towards a single European market has resulted in the application of regulatory policy across all sectors promoting the enhancement of trade between different national markets. The establishment of the Single Electricity Market (SEM) between Ireland and the UK in 2007 transformed the competitive environment in which electricity companies operate. Under the 2007 White Paper the government committed to implementing "the structural change needed to reinforce the benefits of the SEM" (p.7) through the continued liberalisation of the energy sector in addition to unbundling of the transmission and distribution from the supply of gas. Competitiveness remains a key cornerstone of energy policy as:

...companies exporting to international markets from Ireland (both foreign owned and Irish owned) compete with those from other countries. Relative cost competitiveness, therefore, plays an important role in determining an enterprise's ability to compete in international markets. Relative cost competitiveness (as distinct from low or affordable cost) also continues to be a key factor for foreign owned

entities when making decisions on where to invest – even in circumstances where the primary driver is innovation and/or talent.

(White Paper 2015, p.87)

Therefore, in order to ensure viability it will be necessary for energy SOEs, and the ESB in particular, to increase their scale and cost competitiveness, and they must continue to do this as plans for a Regional Electricity Market (REM) encompassing Ireland, Britain and France are progressing. Once the REM is officially established the ESB will no longer be a key player in a small Irish market but rather a small player in an increasingly competitive European market.

Irish SOEs have adapted their objectives to reflect their increased interest in sustainability, security of supply and competitiveness in the context of a low carbon environment. Under its corporate strategy, the ESB aims to more than double its current renewable generation capacity of 12 per cent. The group has been involved in the development of wind farms for several years both in Ireland and abroad. ESB International (ESBI) provides a variety of environmental services to the renewable energy sector, with the most significant being the preparation of national studies on the potential of wind, hydro and tidal resources. At the end of 2013, the energy division of Bord Gáis had increased its operational fleet of wind turbines by 37, thus increasing the overall installed capacity from 240MW to 326.5MW. This part of BGEs operations was privatised in 2014. Bord na Móna's objectives have extended outside of its core activity of peat production as the company strives to become one of the leading suppliers of renewable energy in Ireland. The company currently operates a number of wind farms in addition to a biomass generation station, with the overall goal of ensuring that by 2020 over 50 per cent of installed capacity will be based on renewable technologies.

However, in the case of the ESB, it worthwhile noting that the company's efforts to fulfil its sustainability objective are hindered by government policy with regards to purchase directives. In the 1950s the ESB were directed by the government to enter into a purchase agreement with Bord na Móna for the purchase of peat. This agreement is still in existence today despite the increased emphasis placed on reducing carbon emissions at EU level. Despite closing six of its peat generation plants over the last two decades, the ESB opened two new plants in 2005 and renewed its purchase agreement with Bord na Móna until 2019. The opening of

these two new plants was heavily criticised as, in addition to being an expensive means of electricity generation, it was also considered a contradiction to the government's policy on reducing carbon emissions. In 2015, the ESB announced that it was planning to retain its two peat-fired generation plants beyond 2019. According to Bord na Mona the renewal of the supply deal with the ESB "was absolutely critical" as a "significant number of its 2,200 employees were dependent on the sale of turf to the ESB for use in the power plants".⁸ However, environmental activists argued that the continuation of the plants would hinder Ireland's efforts in achieving its EU greenhouse gas targets for 2020.

Financing

There are several subsidy schemes in place to support the government's national policy objectives in relation to renewable energy and security of supply. The PSO subsidy covers the additional costs associated with electricity generation that are not recouped in the electricity market. The details of the PSO levy are decided by the government, and the Commission for Energy Regulation (CER) holds the responsibility for the calculation of the levy and monitoring of its application. The PSO levy is charged to all electricity customers in Ireland.

Table 2.6: Value of PSO Levy Schemes in Energy Sector (€m)

Category	Proposed PSO
Renewables	277.6
Peat	115.4
Other	1.2
Total	394.2

Source: CER Publication (2015)

Table 2.6 shows that the proposed levy for 2016/17 will amount to €394.1 million which is 21 per cent higher than the level set in the previous period. This increase is attributable to the decrease in wholesale prices which results in the PSO plant requiring higher revenue to cover allowed costs.

⁸ O'Brien, T. "ESB to retain two major turf-fired power plants", *Irish Times*, 14 May 2015. Available at: <http://www.irishtimes.com/news/ireland/irish-news/esb-to-retain-two-major-turf-fired-power-plants-1.2212922>

2.3.2 *Transport Sector*

Irish transport policy throughout the 1990s and 2000s focused primarily on facilitating increased use of private transport (i.e. cars). Demand for transport (both public and private) increased significantly during this period as a result of strong growth in the economy which led to an increase in the number of people travelling to work. Policy developments during this time were largely focused on: 1) competition and regulation; 2) investment; 3) sustainability; and 4) financing.

Competition and Regulation

The 1985 Green Paper on Transport Policy outlined arguments for and against liberalisation of the bus market. Reduced fares along with better quality and frequency of service were considered to be the main advantages for competition, while disadvantages included reductions in safety standards, gaps in service and the loss of CIÉ jobs. The potential reduction in revenue for CIÉ was a contentious point within the liberalisation argument and ultimately no changes in legislation came about as a result of the publication of the Green paper. Although briefly discussed in National Development Plans, regulatory reform of the bus sector was not adequately addressed until the publication of *A New Institutional and Regulatory Framework for Public Transport (NIRF)* in 2000. The report recognised the fact that very little institutional change had occurred since the establishment of CIÉ and as such, development was needed in the areas of competition and regulation. It was evident from changes in the aviation and telecommunications industry that activities, which the government “previously assumed could only be carried out successfully on a monopoly basis”, were “shown to improve very substantially – both in terms of lower cost and better service – when exposed to competition” (p. 9). The two new institutional arrangements proposed for the bus sector were: (1) the removal of geographical restriction on Dublin Bus and Bus Éireann so that both companies could compete to provide bus services throughout the state; and (2) the divestiture of one of the companies by the State (most likely Dublin Bus). Although the NIRF proposal was a positive step forwards with regards to liberalisation of the bus sector, Barrett (2001) believed that the proposal was weak from a consumer viewpoint. The NIRF only focused on Dublin and Galway routes, thus denying consumers “the normal gain from having a choice of supplier or services such as price and service

competition” on other routes (Barrett 2001, p.9). Following a cabinet reshuffle in 2004, the NIRF proposals were shelved indefinitely.

The most recent change in the regulatory structure of the bus industry came with the establishment of the National Transport Authority (NTA) under the Public Transport Regulation Act, 2009. The NTA currently controls licensing of all commercial bus operators and, with the exception of Bus Éireann and Dublin Bus, has issued licences for public bus passenger service to 162 independent companies. A public bus passenger service is defined as a service where: each journey is open to use by any member of the public; a charge or charges are paid in respect of each passenger; and, except where the NTA otherwise determines, the service is provided between specified terminal points or along a specified route or otherwise in accordance with a published timetable (NTA 2017). Due to a lack of available information it is difficult to determine the true size of the private bus industry.

In 2013, the NTA put forward a proposal to the Minister for Transport recommending that private bus operators be allowed to compete for 10 per cent of the market. Ultimately, the NTA believes that the majority of PSO routes should continue to be serviced by Bus Éireann and Dublin Bus, however, “tendering in the order of 10 per cent of the services would be of a scale that would encourage good competition and provide a satisfactory-sized operation against which to benchmark the existing operators”⁹. Dublin Bus routes that are being proposed for tender include a small number both orbital and local, while the possibilities for tendering of Bus Éireann services are more extensive, encompassing: city services in Cork and Waterford; rural stage carriage services in the south east; and commuter services in Dublin.

Despite the introduction of a number of EU Directives promoting liberalisation of the rail market, only Sweden and the UK have been successful in achieving full liberalisation (EC 2013). The rail markets of most other European countries continue to be dominated by SOEs. Currently Ireland is one of a small number of countries to have a single rail company operating in the market. Ireland was granted an

⁹ Wall, M. ‘Plan to allow private firms to compete for 10% of bus market’, *Irish Times*, 11 September 2013, Available at: <http://www.irishtimes.com/news/ireland/irish-news/plan-to-allow-private-firms-compete-for-10-of-bus-market-1.1523553>

exemption from applying the EU Directive requiring domestic competition for a number of reasons including: the small size of the rail network, a lack of a connection to the European rail network, and its different track gauge.

Investment

Most transport infrastructure provision prior to the late 1990s was based on a ‘predict and provide’ rationale where calculations on future transport demand were based on current figures. This was reflected in the governments Transport 21 (T21) investment programme which was launched in 2005. T21 was a €34bn ten year programme aimed at addressing the dual problem of historical underinvestment in the Irish transport sector and continued growth in transport demand.¹⁰ The main aims of the programme were to: increase accessibility for everybody, ensure economic and environmental sustainability, expand capacities to address existing deficiencies and provide for future growth, increase the use of public transport, and enhance the quality of the transport system.

Although the implementation of T21 led to beneficial developments in public transport such as the introduction of the LUAS (light rail system) and improvement in rolling stock and bus fleets, it failed to adequately address the issue of sustainability. During the 2000s, transport related greenhouse gas emissions increased more rapidly than those in other sectors.¹¹ As such, T21 was criticised by environmental lobby groups as being a “cost and carbon intensive transport infrastructure development programme which depended upon favourable economic conditions and prioritised supply-side measures over efforts to manage mobility demand and encourage use of more sustainable transport modes” (Rau *et al.* 2016, p.5).

¹⁰ The economic downturn led to the discontinuation of the programme in 2010.

¹¹ Emissions from transport more than doubled between 1990 and 2009. In 2015, transportation accounted for 21 per cent of Ireland’s total greenhouse gas emissions.

Table 2.7: Transport SOEs Capital Investment 2001 to 2015

SOE	2001-05	2006-10	2011-15	Total
Bus Éireann	81.3	137.6	83.2	302.1
Dublin Bus	108.8	169.4	152.8	431
Iarnród Éireann* (Rail)	1,318.0	1,693.0	766.9	3,777.9
DAA (Airports)	352.3	1,697.4	360.4	2,410.1
Total	1860.4	3697.4	1363.6	6921.1
% of GFCF	1.0	1.7	0.7	1.1

Source: Authors' calculations from capital expenditure figures reported in company annual reports and Gross Fixed Capital Formation (GFCF) figures for the Irish economy sourced from the Central Statistics Office. Note: *denotes a network company.

Considerable investment was made in the transport industry since 2001 partly to compensate for underinvestment in the 1980s and early 1990s (see table 2.7). Between 2001 and 2015, CIÉ invested roughly €4.5 billion in capital programmes aimed at revitalising its rail and bus services, with the majority of investment directed towards the development and maintenance of the rail network (€3.99 billion).¹² Despite this significant level of investment, overall levels of capital expenditure peaked in 2011 and have subsequently declined due to recession-related financial constraints on both the Exchequer and CIÉ itself.

There was also significant investment in Ireland's airport infrastructure prior to the economic crisis. As passenger numbers increased significantly between the period 2002 and 2006, the Dublin Airport Authority (DAA) launched a major investment programme aimed at upgrading facilities at Ireland's three main airports. This involved the construction of new passenger terminals at Dublin and Cork airports, and the refurbishment of the existing terminal at Shannon. The most significant element of the investment programme (the new terminal building at Dublin Airport 'T2') was widely criticised when it opened in 2010 at a time of rapidly decreasing passenger numbers stemming from the global economic crisis. However, as with many capital investment programmes in infrastructure industries characterised by long-lived assets, it is difficult to quantify the benefits at such an early stage. The impact of infrastructure investment is two-fold; firstly, there will be a short-term

¹² It should be noted that CIÉ receives substantial capital grants from the exchequer in addition to EU funding. Between 2001 and 2013, exchequer grants amounted to roughly €3 billion (€2.4 billion of which was for the period 2008 to 2015). In contrast to Irish Rail whose investment is covered in full, the bus companies only receive partial funding.

impact from the construction phase, and secondly, there will be a long-term impact from the productive capacity of the capital created. Therefore, the construction of T2 may yet prove beneficial for the DAA's long term operations. It is important to note that the DAA receive no capital grants and instead fund investment through a combination of its own resources and borrowings (see table 2.8).

Table 2.8: Transport SOE Borrowings 2015

	Net Debt (€m)	Short Term Debt (€m)	Long Term Debt (€m)	Debt/Equity (%)	Statutory Borrowing Limit (€m)
CIÉ	88.5	13	45	N/A	107
DAA	616	43	1,039	103.3	1,800

Source: company annual reports. Notes: (1) short term debt is made up of borrowings reported as current liabilities (falling due within one year), whereas long term debt includes borrowings reported as non-current liabilities (falling due after one year); (2) Debt/Equity is calculated as total borrowings (current and non-current) divided by total equity; (3) Debt/Equity could not be calculated for CIÉ due to a negative equity figure.

Sustainability

In the late 2000s EU transport policy had become increasingly focused on the goal of sustainable development. In 2011, the White Paper *Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system* outlined the EU's objective of decreasing transport related emissions by 60 per cent through the promotion of alternative travel methods to the carbon intensive car. Following a significant public consultation process involving 500 stakeholders the Irish government published *Smarter Travel: A sustainable transport future* in 2009. In addition to highlighting the need for an alignment between employment and transport policy to allow for co-location of employment, the document promoted low carbon alternatives to the car such as walking, cycling and public transport.

Public transport companies have in recent years adopted strategies to reduce energy usage and carbon emissions. For example, CIÉ began to undertake a number of measures in 2013 in an attempt to reduce its energy consumption at all levels (i.e. diesel oil, electricity, natural gas and heating oil). These measures included: the purchase of new vehicles with Euro 5 standard engines, eco driving training for bus drivers, shortening of auto shutdown delay times for trains, rain water harvesting, and a review of compressed air systems on buses. These measures resulted in a 5 per

cent reduction in the group’s energy consumption profile between 2013 and 2015. In order to move towards a green energy transport system, CIÉ plan to promote and utilise new technologies that increase efficiency and reduce energy consumption. Similarly, the Dublin Airport Authority has taken explicit measures to reduce carbon emissions at both Dublin and Cork airports. In 2012 the company voluntarily entered into an agreement with the Sustainable Energy Authority of Ireland (SEAI) to promote public sector energy efficiency by setting a target of a 33 per cent increase in energy efficiency by 2020. As part of the agreement the DAA is committed to a number of initiatives designed to meet the requirements set out in the 2013 NEEAP and it must publicly report on its energy performance on an annual basis.

Financing

Bus Éireann, Dublin Bus and Iarnród Éireann each have a contract with the National Transport Authority (NTA) to provide services which are considered socially necessary but economically unviable. Each company receives PSO funding in compensation for providing these services. Roughly 10 per cent of the subsidy payment is dependent on the operator meeting certain performance criteria and they are monitored on a quarterly basis by the NTA. The level of PSO funding varies from year to year and from SOE to SOE.

Table 2.9: Value of PSO Subvention in Transport Sector (€m)

SOE	PSO 2014	PSO 2015
Bus Éireann	€34.4	€33.7
Dublin Bus	€60.0	€57.7
Iarnród Éireann	€117.4	€98.2

Source: SOE Annual Reports

Iarnród Éireann, the national rail company, receives the largest proportion of the subvention year-on year. Dublin Bus receives a significantly higher portion of the subvention allocated to the bus industry (see table 2.9).

2.3.3 Postal Sector

In contrast to the energy and transport sector, policy developments in the postal sector have largely been restricted to the area of competition and regulation. Reform of the postal sector in this context has been driven by the implementation of European legislation, the stages of which are outlined in table 2.10.

Table 2.10: Liberalisation Directives for European Postal Market

Year	Directives
1997 (97/67/EC)	Monopoly only included service delivery of letters and parcels below 350g in weight or, that costing five times less than the basic tariff
2002 (2002/39/EC)	Amended the 1998 restrictions and the reserved area was reduced to 100g and three times the basic tariff
2008 (2008/06/EC)	All reserve areas were abolished in order to introduce full competition

Source: European Commission Publications (1997-2008)

In the packets and parcels sector An Post has faced strong competition, particularly with the growth in e-commerce, which has resulted in a significant increase in parcel volumes. For example, a recent study of the packets and parcels market commissioned by the Commission for Communications Regulation (ComReg) found that eight operators had a combined market share of approximately 90 per cent in 2013, with An Post's share of market volume and market value estimated at 30-40 per cent and 20-30 per cent respectively (Frontier Economics, 2015). Although detailed data on the extent of competition outside of the packets and parcel business is not available, the limited information in the public domain shows that An Post has maintained its dominance in the overall postal sector over the period reviewed, with no other operator having a market share in excess of one per cent in both volume and value (ERGP 2014).

In its role as Universal Service Provider (USP), An Post is regulated by the Commission for Communication Regulation (ComReg), the independent regulator that replaced the Office of the Director of Telecommunications Regulation in 2002. ComReg currently regulate postal tariffs that fall within the scope of the USP. In addition, it closely monitors quality of service with regards to delivery efficiency.

2.4 Conclusion

Prior to the global financial crisis, the extent of SOE activity in the Irish economy was comparatively low. This was highlighted by the OECD (2008) who found that Ireland ranked towards the bottom for two measures adopted: (i) the scope of public enterprise in their economies¹³ (fourth from bottom) and (ii) public ownership (seventh from bottom). However, Ireland ranked highly (sixth from top) for ‘government involvement in the infrastructure sector’ (energy, transport and telecommunications). This reflects the nature of the Irish privatisation programme which by 2008 had extended to telecommunications and air transport only.

Since the crisis, the scope of public enterprise in the Irish economy has expanded with State ownership becoming a feature of the banking sector and new SOEs formed in the water and property sectors. State involvement in banking and property can, however, be realistically considered temporary. In both sectors the State intervened as a response to the economic crisis and it can be expected to unwind its positions in these sectors in the short to medium term. The presence of state owned enterprise in the Irish case is, therefore, largely concentrated in infrastructure industries characterised by large scale investment and networks (e.g. water, electricity, gas, postal services and rail). These industries were mostly unaffected during Ireland’s first wave of privatisation (1991 to 2006) which was adopted in sectors where barriers to private sector involvement were not prohibitive (food, banking, shipping, steel production and telecommunications).

Most Irish SOEs are ascribed public service missions around a number of key areas such as investment and sustainability. This chapter shows how SOEs have served as important conduits for significant public investment in gas, electricity, bus, and rail infrastructure. Since the start of the global and domestic financial crisis SOEs have accounted for 5.9 per cent of Ireland’s gross fixed capital formation with investment in all relevant sectors (except rail and bus) financed from borrowings and revenues.

Another consequence of the wider economic crisis for SOEs concerned the issue of dividends paid to the exchequer. Between 2001 and 2007, total dividends from the

¹³ The scope of public enterprise is measured as the proportion of sectors in which the State controls at least one firm (OECD 2008).

ESB, Bord Gáis, Coillte and Bord na Móna amounted to almost €475 million. This however rose to a total of €2.106 billion over the period 2008-2016 with the bulk of this amount paid by the ESB (€1.36 billion) and Bord Gáis (€660 million). There were two reasons underpinning this increase: 1) a higher dividend payout policy; and 2) special dividends. For example, prior to 2008, Bord Gáis paid out 10 per cent of its previous year's profits in dividends. This was increased to 20 per cent in 2008 and 30 per cent from 2009 onwards.¹⁴ In addition, the ESB was directed by the Government in 2012 to sell €400 million in assets by the end of 2014 and to pay the proceeds to the Exchequer in the form of a special dividend. The dividend policy imposed by government has had important implications for individual enterprises in terms of their overall indebtedness and scope to fulfil future investment plans. It highlights how governments can use SOEs for purposes that are not necessarily consistent with the sustainability of individual enterprises or wider economic objectives around investment and growth.

The future of public enterprise in Ireland will, however, depend on domestic politics as well as the fortunes of the national and international economies. The policy of extracting sizeable 'special' dividends from Irish SOEs in recent years demonstrates the danger that politicians are prepared to use SOEs for short-term pragmatic purposes that are not necessarily compatible with the long-term interests of wider society. This has always been a fact of life for public enterprise which will no doubt continue to challenge policy makers and other stakeholders in the years to come.

The review of SOEs presented in this chapter shows that all SOEs (besides the national bus and rail companies) were profitable in 2015. However, there is a need for deeper analysis of the economic efficiency of these enterprises. As such the next chapter examines the economic performance of the nine SOEs included in this chapter for the period 2002 to 2014.

¹⁴ For a more detail overview of dividend policy see Appendix B.

Chapter 3: Methodology

3.0 Introduction

This chapter presents the methodological approach undertaken for the analysis of SOE performance presented in chapters 4, 5 and 6. Before discussing the definition of performance that is applicable to the analyses presented in later chapters, the quantitative and qualitative approach adopted for this research is discussed. Following this, the methodology used to estimate the labour productivity (LP) and total factor productivity (TFP) indicators is described. The productivity indicators described here are then utilised in the next chapter for the analysis of the performance of the nine main non-financial SOEs operating in the areas of energy, transport and post.

3.1 Methodological Approach: Quantitative vs Qualitative

The empirical research in this thesis is characterised by two objectives:

1. the analysis of the financial and economic performance of Irish SOEs operating in the areas of energy, transport and post during the period 2002 to 2014.
2. the analysis of the association between performance and changes in factors such as capital market status, product market competition, regulation and the internal environment in the case of two Irish SOEs, the Dublin Airport Authority (DAA) and An Post.

While a quantitative approach was largely adopted in the case of the first objective, the study of commercialisation undertaken as part of the second objective required the adoption of both a qualitative and quantitative approach. The key concern in this context was the link between the commercialisation process and performance. The original data set compiled for this research facilitated an economic analysis of performance, however, different aspects of the commercialisation process highlighted other questions which demanded more of a qualitative approach. These questions were concerned with recognising the various stages of the process and determining the outcomes using the model of commercialisation presented in chapter 1. This required an in-depth study of each company over a 20-30 year period. Although useful for understanding processes, qualitative data is not easily enumerated and as such a dual qualitative and quantitative approach highlighted different aspects of the individual cases.

Although the case study approach has received criticism for its perceived lack of scope for statistical generalisability there are several merits that must be considered:

1. The ability to validate and build upon the tacit knowledge the investigator brings to the enquiry;
2. The ability to undertake purposive sampling whereby informed choices of site or location enhance understanding of the process being investigated;
3. Allows for the focus of the design to be adjusted as the process unfolds and issues of particular interest are identified.

(Lincoln and Guba quoted in Walsh et al. 1997, p.52)

Effective case study analysis requires an appropriate framework in order to contextualise the data gathered and the conceptual model of commercialisation presented in chapter 1 facilitated this.

It is important to note that the analysis contained within the case studies does not examine causal relationships and instead analyses the association between the commercialisation process and changes in performance. Cook and Campbell (1979) built upon the writings of John Stuart Mill by proposing that three criteria must be present for a causal relationship to exist: 1) the cause must be related to the effect; 2) the cause must precede the effect; and 3) there must be no other reasonable explanation for the effect other than the cause. In the case of the conceptual model of commercialisation applied to the analysis of SOE performance, the dimensions of the model (capital market status, competition, regulation and internal organisational structure) are not independent of each other and as a result it is not possible to analyse the singular impact of change in each dimension on performance. Such a task was further complicated by the fact that the commercialisation process is a dynamic rather than static phenomena and as such the analysis is descriptive and explanatory rather than prescriptive and predictive.

3.2 Performance: Definition and Estimation

Traditionally the objectives pursued by public enterprises were broad and included: the efficient allocation of scarce resources, contributing to regional development, facilitating stable employment and ensuring equal distribution of income so that profits were not excessive against what was needed to effectively provide services

(Rees 1976). The broad nature of these objectives can lead to complications when attempting to analyse the performance of these companies in terms of efficiency.

Efficiency is concerned with the relationship between resource inputs and final outcomes, and as such is generally defined in two ways: allocative efficiency and productive/technical efficiency (Farrell 1957). Allocative efficiency is a global measure of efficiency concerned with the ability of a firm to use inputs in optimal proportions. In order to achieve allocative efficiency relative product prices must reflect the relative social costs of provision. In the case of a private firm where there is significant competition in the product market the calculation of allocative efficiency is straightforward. However, in the case of an SOE that traditionally holds a monopolistic or dominant position in the market a determination of allocative efficiency is more complex due to the trade-off between allocative and non-allocative objectives. It is possible for an SOE to be allocatively inefficient as a result of having to fulfil non-allocative objectives under its social remit. As a result, Pestieau and Tulkens (1993) advocate that the performance of public enterprises be measured and compared on the basis of productive efficiency.

According to Farrell (1957) two distinct elements must be satisfied for a firm to be productively efficient. The first element is concerned with the achievement of technical efficiency where minimum levels of factor inputs (labour, capital etc.) are used to produce a given level of output. The second element is where the technique of production chosen is such that, given the relative prices of different factor inputs, costs are minimised. In order to determine if a firm has achieved productive efficiency it would be necessary to estimate the relevant isoquants, however, in reality this is almost impossible due to the lack of available data. An alternative to the empirical measure of isoquants is the measurement of productivity growth over time as this allows for analysis of the relationship between growth in output and growth in quantities of inputs used (Molyneux and Thompson 1987). A comprehensive measure of productivity growth is Total Factor Productivity (TFP).

Diewert (1992) defines TFP as the rate of transformation of total input into total output. There are several ways in which TFP can be measured, however the index number approach is widely used in the literature and is therefore adopted in this

chapter. Index numbers play a significant role in the measurement of change in TFP. Coelli (1998) describes an index number as “a real number that measures change in a set of related variables” (p.86). An index measures the change in the value of the basket of quantities of a certain commodity from one period to another. In the case of a single commodity the process is straightforward. However, in the case of two or more commodities the problem of aggregation arises, as not all units of input are compatible; for example, units of labour cannot be added to units of capital. It is necessary to choose an appropriate aggregation formula for the individual outputs and individual inputs in order to form the necessary indices. There are several formulas that can be used to measure price and quantity index changes, the most widely used of these include: the Fischer index (1922), the Tornqvist index (1936) and the Malmquist index (1953).

Both the Fischer and the Tornqvist indices are non-parametric techniques that can be utilised with panel or cross-sectional data to measure the productivity of two organisations in one time period or alternatively one organisation in two time periods. According to Grifell-Tatje and Lovell (1995) the key reason for the popularity of these indices is the fact that it is not necessary to map changes in the underlying best practice production frontier as both indices can be calculated directly from price and quantity data. The Malmquist index can be used in a more general context, as it does not require information on prices or cost shares. However, unlike the Fisher and Tornqvist indices, it does require estimation of technology through the computation of distance functions. The behavioural assumptions associated with the Malmquist index are significantly weaker as cost-minimising or revenue-maximising behaviour is not assumed. The Malmquist index is better suited to situations in which two or more organisations are being compared at the same time or over time.

The most appropriate method in the context of this research is the Tornqvist index as it is generally used on historical datasets and can show the contribution of each component to aggregate growth because of its log-linear form.¹⁵ The Tornqvist index is a weighted geometric average of the output quantities produced and input

¹⁵ In addition, the Tornqvist index is widely used in the literature on performance (e.g. Perelman and Pestieau 1988, Coelli and Perelman 2000).

quantities used in production over time. It can be defined in its logarithmic form as follows (Coelli 1998):

$$\begin{aligned} \text{LnTFP}_{st} &= \ln \frac{\text{Output Index}_{st}}{\text{Input Index}_{st}} = \ln \text{Output Index}_{st} - \ln \text{Input Index}_{st} \\ &= \frac{1}{2} \sum_{m=1}^m (w_{is} + w_{it})(\ln y_{mt} + \ln y_{ms}) - \frac{1}{2} \sum_{n=1}^n (v_{ns} + v_{nt})(\ln x_{nt} - \ln x_{ns}) \end{aligned}$$

Where w and v are the weights attached to outputs y and x in periods s and t

The first part of the equation corresponds to the Tornqvist index applied to output data while the second part of the equation relates to input data. Input/output quantities are attached weightings based on their corresponding revenue/cost shares.

When measuring performance this chapter also utilises labour productivity (LP). LP is a partial measure of productivity that measures the ratio of real output to an input of labour.

$$LP = \frac{\text{Output Index}}{\text{Labour Index}}$$

However, it must be emphasised that an overreliance on partial measures should be avoided as they do not provide an appropriate illustration of overall productivity (Windle & Dresner, 1992). Results from partial measures can often be misleading due to the possibility of substitute factor inputs. For example, if labour is used as a substitute for capital then any observed growth in Capital Productivity (CP) will overstate the contribution of capital, while LP results will understate the contribution of labour to output.

3.2.1 Data Collection

The data sets utilised for the analysis of SOE performance were compiled through an extensive collection process from various sources. Primary financial data was collected from company annual reports. This required the collection of annual reports for nine companies over the period 2002 to 2014, the extraction of financial

data and the creation of a single data base of performance indicators that was consistent across companies and over time. Deflators were constructed from data collected from sources including the Central Statistics Office (CSO), Eurostat and the International Monetary Fund (IMF) (greater detail on deflators provided in section 3.3). Annual reports also served as the principal source of information on the changing nature of company activities and organisational structure. This was further supplemented with information from a number of government reports, parliamentary debates and press articles. Informal interviews with company representatives were conducted in some instances to clarify inconsistencies in the data.

Prior to discussing the performance of the SOEs included in this study it is necessary to examine in greater detail the variables used in the calculation of the productivity measures discussed above. Therefore, the next section describes the data sources used and the estimation of output and input measures.

3.3 Measurement of Variables

This section outlines the input and output measures chosen when analysing the performance of the following Irish SOE's: Bord Gáis, Electricity Supply Board (ESB), Bord na Móna, Coillte, Dublin Airport Authority, Bus Éireann, Dublin Bus, Irish Rail, and An Post.

3.3.1 Output Measures

Determining a suitable measure of output can be challenging as the degree of relevance associated with certain measures can change from industry to industry. For example, an appropriate output measure for a bus or train company would be based on passenger per kilometre (PKm) whereas for an electricity company it would be kilowatt hours (kWh). Another issue is that in the case of an SOE that provides heterogeneous services outside of its core activities, deflated revenues may provide a more suitable measure (Parker and Martin 1997). Table 3.1 shows how the output index for each SOE was calculated in this study.

Table 3.1: Output Measures for LP and TFP Analysis

SOE	Output Measure	Note
Bord Gáis (Gas)	Revenue (Deflated)	- Network revenue deflated using wholesale energy deflator for Ireland (Eurostat). - Retail revenue deflated using commercial energy deflator for Ireland (Eurostat). - Other revenue deflated using GNI deflator for Ireland (Eurostat). Note: It was not possible to source data on physical output.
Electricity Supply Board (ESB)	Revenue (Deflated)	- Network revenue deflated using wholesale energy deflator for Ireland (Eurostat). - Retail revenue deflated using commercial energy deflator for Ireland (Eurostat). - Other revenue deflated using GNI deflator for Ireland (Eurostat). Note: It was not possible to source data on physical output.
Bord na Mona (Peat)	Revenue (Deflated)	- Energy and Fuel Revenue deflated using energy deflator (CSO). - Other revenue deflated using GNI deflator for Ireland (Eurostat). Note: It was not possible to source data on physical output.
Coillte (Forestry)	Revenue (Deflated)	Revenue deflated using general wholesale deflator (Eurostat). Note: It was not possible to source data on physical output. In addition, breakdown of revenue was not reported prior to 2006 due to the commercial sensitivity of the data.
Dublin Airport Authority	Passenger per kilometre	-Passenger number throughput & kilometres travelled (Company Annual Reports) -Non-aeronautical revenue deflated using Commercial (GNI) deflator.
Bus Éireann	Passenger per kilometre	-Passenger number throughput & kilometres travelled (Company Annual Reports) - Kilometres travelled
Dublin Bus	Passenger per kilometre	-Passenger number throughput & kilometres travelled (Company Annual Reports)
Irish Rail	Passenger per kilometre	-Passenger number throughput & kilometres travelled (Company Annual Reports).
An Post	Mail Volume and Revenue	-Mail volume (Company Annual Reports) -Revenue from other services deflated using GNI deflator for Ireland (Eurostat).

It should be noted that due to limitations regarding the availability of data the performance results presented for the energy companies (Bord Gáis, ESB, Bord na Móna and Coillte) are based on deflated revenues and not on preferred measures of physical outputs as used for the core activities of the remaining companies.

3.3.2 Input Measures

Inputs can be divided into two categories: non-capital and capital. Non-capital can further be divided into labour and other inputs. To obtain the overall input index, real indices of each input were created and weighted by their share in total cost.

Labour input represents the number of workers employed in the production process and is calculated as follows:

$$L_{real} = \text{number of employees} \times \frac{\text{hours}}{\text{week}} \times 52 \frac{\text{weeks}}{\text{annum}}$$

The average number of full-time employees was obtained from the annual reports of the relevant SOE's. With regards to average hours worked it must be acknowledged that this may change over time as a result of business fluctuations or changes in the behaviour of workers. Therefore, any estimation of TFP must allow for variations in the number of hours worked. This research measures the labour input in terms of hours worked in relevant industries using data obtained from the Central Statistics Office (CSO).

Due to the difficulty involved in determining a physical quantity for other inputs, the most common method for constructing an index is to deflate the total cost figure for other inputs. Cost of other inputs was calculated as follows:

$$\text{COI} = \text{OpC} - \text{LC}$$

Where: COI = Cost of other inputs; OpC = Operating Costs; and LC = Labour Costs per annum.

Labour cost is the nominal figure for net staff costs obtained from company annual reports while the COI figures are the nominal values obtained from the previous section.

Real capital stock had to be estimated since annual reports only provide historical accounting costs for capital assets. Historical cost information does not take in to account inflation or economic depreciation and as such it was necessary to derive an estimate of the current value of assets. When considering depreciation, it is important to differentiate between accounting and economic measures. Accounting

depreciation is a straightforward process where the historical cost of a fixed asset is generally depreciated over time on a straight line basis. Economic depreciation is more difficult to calculate as it reflects the change in the market value of an asset across time periods. In the production process the current and future productive efficiency of the capital asset is eroded and this in turn erodes its market value. Therefore, economic depreciation is linked to the evolution of an assets productive efficiency i.e. its ability to produce goods and services over the course of its life. In line with other studies (Ramey and Shapiro 2001; Diewert 2005) the analysis presented here utilises Hulten and Wykoff's (1996) estimations of economic depreciation when calculating real capital stock.

Real capital stock was estimated using the perpetual inventory method:

$$K_t = I_t + (1 - \delta)K_{t-1}$$

Where: K = real capital stock; I = real investment; δ = depreciation rate; and t = time.

Annual reports for each SOE provide information on various tangible fixed asset groups and these are listed in Table 3.2.

Table 3.2: Depreciation Rates Applied to Capital for TFP Analysis

SOE	Capital (with depreciation rates)
An Post	Land and Buildings (3%); Interest in GPO (NA); Motor Vehicles (12.5%); Computers and Other Equipment (12.5%)
Dublin Airport Authority	Terminal Complexes (3%); Land and Airfields (3%); Plant and Equipment (12%); Hotel Buildings (15%); Other Property (3%); Assets in the Course of Construction (NA).
Bus Éireann	Vehicles (12.5%); Plant and Machinery (12%)
Irish Rail	Railway Lines (3.6%); Rolling Stock (2.9%); Freight Vehicles (2.9%); Plant and Machinery (12%); Catering Equipment (12%); Docks/Harbours (4%); Land and Buildings (3%)
Dublin Bus	Vehicles (12.5%); Plant and Machinery (12%)
Bord Gáis	Land (3%); Buildings (3%); Plant, Vehicles and Equipment (12%); Pipeline System (12%)
Bord na Móna	Bogland, drainage and production buildings (3%); Plant and Machinery (12%); Freehold land, administration and research building (3%)
Coillte	Forest and Land (3%); Buildings (3%); Machinery (12%)
ESB	Land and buildings (3%); Plant and Machinery (12%)

Note: All capital stock is depreciated by rates obtained from Hulten and Wykoff (1996)

It was necessary to calculate real capital stock separately for each fixed asset group using the following formula:

$$FA_{kt} = I_{kt} + (1 - \delta_k) FA_{kt-1}$$

Where FA_{kt} = Fixed asset group; I_k = Real investment in fixed asset k ; δ = depreciation rate

Real investment is simply the nominal capital investment figure for each asset group deflated by the GFCF deflator taken from the EU AMECO database. The results for each asset group were then aggregated to arrive at an overall value for real capital stock.

The opportunity cost of capital (OCK) for each year was estimated using the following equation:

$$OCK_{kt} = \sum_{K=1}^N (i_t + \delta_{kt}) NomFA_{kt}$$

where: k = each cost group; i = ten year bond yield on government securities (obtained from CSO); δ = depreciation rate; $NomFA$ = Nominal value of each group of fixed assets.

Finally, the nominal input shares used in the calculation of TFP were obtained as follows:

$$S_L = \frac{LC}{TC} \quad S_k = \frac{OCK}{TC} \quad S_O = \frac{COI}{TC}$$

This section has described the measures used for the analysis of economic performance. The next chapter applies these measures to the analysis of the main non-financial SOEs operating in Ireland.

3.4 Conclusion

This research conducts an empirical analysis of the financial and economic performance of the main non-financial SOEs operating in Ireland. A mainly qualitative approach was taken to analyse the commercialisation of SOEs consisting of changes to their capital market status, competitive and regulatory environments and internal organisation. Quantitative methods were employed to measure financial

and economic performance. The following chapter analyses the financial and economic performance of the nine main non-financial Irish SOEs.

Chapter 4: An Economic Analysis of the Irish SOE Sector

4.0 Introduction

This chapter analyses the performance of SOEs in Ireland over the period 2002 to 2014. The analysis focuses on nine companies that remain under public ownership and operate in the areas of energy, transport and post. Each company has undergone significant change due to shifts in government and EU policy on: the objectives (commercial and non-commercial) assigned to SOEs, competition, regulation; investment requirements, and finance and dividend policy.

As noted in chapter 2 there are only two other studies of SOE performance in the Irish context (Sweeney 1990; Reeves and Ryan 1998). The analysis presented in both of these studies relied solely on standard financial indicators. Although these indicators provide valuable information, they can be unsuitable measures of performance where the enterprise is assigned (often) conflicting multiple objectives (i.e. commercial and non-commercial) and/or operates in an imperfectly competitive environment. Moreover, financial indicators can be affected by changes to financial reporting standards over time.

This chapter makes a significant contribution to the literature on Irish SOE performance by: 1) providing an updated analysis of the financial performance of the main SOEs operating in Ireland, and 2) going beyond the narrow scope of financial performance by incorporating productivity based measures such as labour productivity (LP) and total factor productivity (TFP). The analysis presented here also represents the first productivity analysis of an SOE sector at a country level since Molyneux and Thompson's 1987 study of the UK SOE sector.

The performance of the nine main non-financial SOEs operating in the areas of energy, transport and post is then analysed in the next section in terms of both standard financial indicators and economic measures of efficiency.

4.1 The Performance of Irish SOE's

This section analyses the performance of nine Irish SOEs for the period 2002 to 2014. Across this period, each of these SOEs has gone through change in the context of some or all of the following: 1) ownership; 2) competition; 3) regulation; 4)

organisational change; 5) public mission; and 6) the economic crisis that followed the global financial crisis in 2007-08.

The performance of each SOE is assessed using both LP and TFP measures. In addition, financial results for each company are presented. These include: turnover, employee numbers, profit before income, tax and exceptional items (PBITE), net profits, and capital expenditure (CAPEX).

4.1.1 Bord Gáis

Bord Gáis was established in 1976 with responsibility for the transmission, distribution and supply of natural gas in Ireland. Outside of its principal activities of gas procurement and supply the company is (since 2001) also a wholesale supplier of electricity and has minor interests in renewable power generation (i.e. hydro and wind). It is a profitable company which employs close to 1,100 individuals and has paid significant dividends to the Exchequer in recent years.

Over the period reviewed Bord Gáis underwent a number of changes in terms of liberalisation, regulation and ownership. The company responded to these changes in a number of ways including: 1) the expansion of its core gas activities into international markets (in 2001); 2) the diversification of its activities into the electricity supply market (in 2001) and the electricity generation market (in 2010); and 3) increased investment over the period of review in both gas and electricity generation assets.

The company traditionally held a monopoly in the gas supply market but this was eroded from the late 1990s onwards as the market was gradually liberalised (see table 4.1). In preparing for the competitive pressure that liberalisation would bring, Bord Gáis made significant investment in international markets. For example, in 2001 it expanded its gas transportation operations with the building of a pipeline to serve the Isle of Man and also invested in two transmission pipelines to supply gas to Northern Ireland.

Table 4.1: Liberalisation Directives for European Gas Market

Year	Directives
1998 (98/30/EC)	<ul style="list-style-type: none"> • Set minimum requirements to open gas market to allow large volume consumers (i.e. industrial consumers) access to competing suppliers. • Set basic requirements for negotiated and regulated access to network.
2003 (2003/55/EC)	<ul style="list-style-type: none"> • Enabled new gas suppliers to enter member states' markets. • Enabled consumers (industrial from 2004 and residential from 2007) to choose their own gas supplier.
2009 (2009/73/EC)	<ul style="list-style-type: none"> • Regulated transmission network by separating supply and production activities. • Regulated third party access to gas storage.

Source: European Commission Publications (1998-2009)

The regulatory environment underwent significant change in 1999 with the establishment of the Commission for Energy Regulation (CER). A key function of the regulator was to accelerate the liberalisation process and in preparation for this change Bord Gáis began to diversify its activities by entering the business electricity supply market in 2001. This was the company's first significant step in achieving its long-term goal (originally stated in 1997) of becoming a dual provider of gas and electricity. Initially the company did not generate its own electricity supply but purchased wholesale from the international market to supply to the Irish market. Following the full liberalisation of the electricity market (in 2007) Bord Gáis entered the residential electricity market in 2009 and opened its first electricity generation plant in December 2010.

A condition of the 2010 Troika bailout was the agreement of an asset disposal programme, the proceeds of which would go towards writing down government debt and funding some infrastructure investment. Bord Gáis Energy, the retail division of the company, was subsequently sold to a private consortium for €1.04 billion in 2012. The remaining transmission and distribution structure was merged with water infrastructure and services to become the new multi-utility, Eirvia. Given these changes to Bord Gáis's portfolio of activities this study of company performance is confined to the period 2002 to 2012.¹⁶

Bord Gáis has been consistently profitable (see table 4.2) over the period of analysis, however, the trend in the financial performance of the company is erratic with no clear pattern of improvement or deterioration evident.

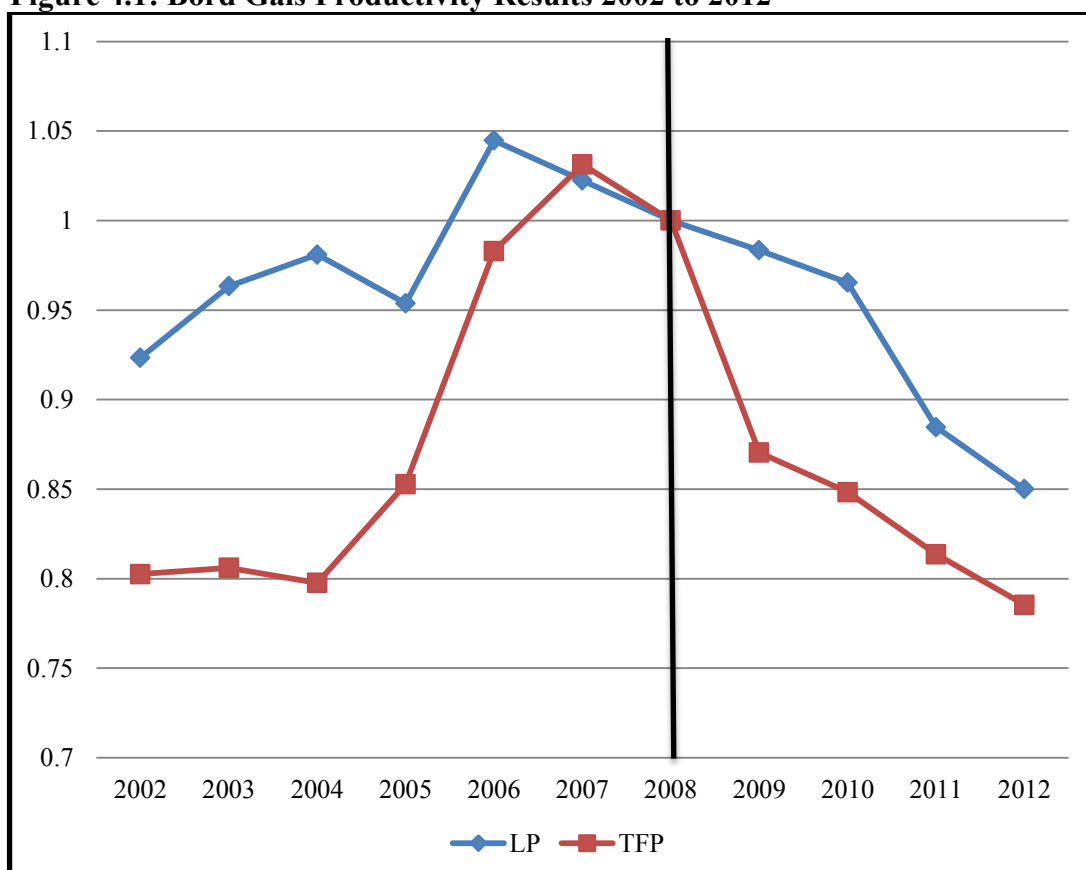
¹⁶ Results for each company are normalised to equal 1 in 2008 to allow for a comparison pre and post the economic crisis.

Table 4.2: Bord Gáis Financial Results 2002 to 2012

	Turnover €000	Employee Numbers	PBITE €000	Net Profits €000	CAPEX €000
2002	652,279	726	113,511	76,223	595,395 (91.3%)
2003	700,942	704	103,085	86,996	192,973 (27.5%)
2004	754,919	694	118,064	91,249	182,360 (24%)
2005	856,508	714	108,327	80,694	251,769 (29.4%)
2006	1,107,838	771	99,331	74,534	280,522 (25.3%)
2007	1,214,998	854	166,474	133,501	209,979 (17.3%)
2008	1,379,122	911	150,628	130,248	327,196 (23.7%)
2009	1,349,168	1,006	118,869	104,245	821,582 (60.9%)
2010	1,525,263	1,068	124,491	121,673	199,519 (13.08%)
2011	1,608,357	1,123	100,206	87,195	188,971 (11.7%)
2012	1,625,455	1,102	163,831	136,106	181,974 (8.4%)

Source: Company Annual Reports. Note: Figure within parentheses represents capex as a percentage of turnover.

Figure 4.1: Bord Gáis Productivity Results 2002 to 2012



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.1 shows Bord Gáis's productivity in terms of TFP and LP for the period 2002 to 2012. The trend in productivity is procyclical as productivity improved significantly between 2002 and 2007 before declining in subsequent years.

In the pre-crisis period Bord Gáis recorded considerable productivity gains especially in the period 2004 to 2007. This significant improvement was primarily attributable to three output related factors. First, there was significant growth in the company's gas transportation division following its expansion into the UK and Northern Ireland markets. Second, there was substantial growth in its electricity supply business which was established in 2001. By 2007 Bord Gáis had a 10.9 per cent share in the industrial electricity supply market which accounts for 62.5 per cent of total electricity consumption in the Republic of Ireland. Third, the period coincided with substantial growth in the Irish economy which was accompanied by a general increase in energy demand. Despite significant growth in employee numbers as a result of the company's expansion into the electricity market LP exhibited signs of improvement between 2002 and 2007 reflecting the increases in output noted above.

After 2008 significant year-on-year reductions were recorded in both productivity measures. This deterioration was underpinned by a number of factors. First, there was a significant reduction in output as a result of a decrease in both residential and industrial demand for energy (gas and electricity) in the wake of the economic crisis. Second, from 2007 there was a sustained downward trend in the demand for gas due to: 1) changing consumption patterns as a result of increased energy efficiency from tighter building regulations, more efficient boiler standards and the introduction of smart metering; and 2) a reduction in power sector gas demand which can be attributed to the continued dominant position of coal fired generation and the increasing penetration of wind powered generation (CER, 2015). Third, productivity deteriorated as a result of an increase in investment in electricity generation assets following the full opening of the electricity market in 2007. For example, the company purchased a renewable portfolio of wind generation assets worth €500 million in 2008/09.

Overall, the period of analysis (2002-2012) has been one of enormous change for Bord Gáis as it faced significantly increased competition in its principal markets and a new regime of regulatory oversight. In addition, the company has operated as the largest supplier of natural gas in a country that went from a period of rapid economic growth to an unprecedented economic collapse and subsequent deep recession. The analysis of company performance shows that Bord Gáis's turnover has grown year-on-year and the company has been profitable (although the pattern of profitability has been erratic). In terms of economic efficiency, Bord Gáis recorded higher levels of TFP but lower levels of labour productivity in 2012 compared to 2002. However, the trends in both productivity measures have been pro-cyclical and the significant improvements recorded before 2008 were followed by a complete reversal in this trend of improvement. Bord Gáis continues to fulfil an important public mission in terms of investment in public infrastructure and these investments are one of the main factors that have driven productivity levels.

4.1.2 Electricity Supply Board (ESB)

The ESB was established in 1927 to control and develop Ireland's electricity network. The ESB's main activities include the generation, transmission, distribution and supply of electricity to the all-Ireland market. In addition to its principal activities of electricity generation and supply, the company provides engineering consultancy (since 1975) on large scale international capital infrastructure projects through its subsidiary company ESB International (ESBI). The company became a dual energy provider in 2011 following its entrance into the domestic gas supply market. ESB is profitable and employs close to 7,150 individuals. In addition, the company makes significant dividend payments to the Exchequer.

During the period of analysis the ESB experienced a number of changes within the areas of competition and regulation. The company responded to these changes through a number of measures including the expansion of its core activities into international markets and the diversification of its activities into the domestic gas supply market. During this period of change the company retained its public mission particularly with regards to continued investment in maintenance and upgrades to the electricity network.

Historically the ESB operated as a vertically integrated monopoly, but the market underwent significant change from 1996 onwards with the gradual introduction of competition to the supply market (see table 4.3). To compete in this newly competitive environment the ESB entered into a number of joint ventures with independent generators (which accounted for 30 per cent of the market in 2002). In addition, the company began to expand into other European markets with the opening of generation plants in Northern Ireland and Spain, the construction of which was finalised in 2005. The company also extended its market share in Northern Ireland with the purchase of NIE (the national transmission and distribution network) in 2010.

Table 4.3: Liberalisation Directives for European Electricity Market

Year	Directives
1996 (96/92/EC)	<ul style="list-style-type: none"> • Set minimum requirements to open electricity market to allow large volume consumers (i.e. industrial consumers) access to competing suppliers. • Set basic requirements for negotiated and regulated access to network. • Ireland required to implement Directive by 2000
2003 (2003/54/EC)	<ul style="list-style-type: none"> • Enabled new electricity suppliers to enter member states' markets. • Enabled consumers (industrial from 2004 and residential from 2007) to choose their own electricity supplier. • Ireland required to implement Directive by 2005
2009 (2009/72/EC) Ireland: 2010	<ul style="list-style-type: none"> • Regulated transmission network by separating supply and production activities.

Source: European Commission Publications (1996-2009)

The regulatory environment in which the ESB operates also underwent significant change with the establishment of an independent regulatory body in 1999 to replace traditional government department regulation. The key objectives of the Commission for Energy Regulation (CER) were to promote competition, protect the interests of consumers and maintain the security of supply (CER 1999). The CER initially regulated electricity wholesale prices, but this changed in 2007 when the ESB entered the Single Electricity Market (SEM). The SEM replaced the markets in the Republic of Ireland and Northern Ireland and electricity was instead bought and sold at prices set by a pool system. Despite the full opening of the retail market to competition in 2007, the ESB continued to hold a dominant 45 per cent market share (CER had a requirement of below 40 per cent) and consequently the CER continued to regulate the company's business and household tariffs until 2010 and 2011 respectively. Following full deregulation in 2011, the company launched the retail

brand Electric Ireland for the purpose of promoting its new product offerings and gaining back customers lost during the transitioning period of price deregulation.

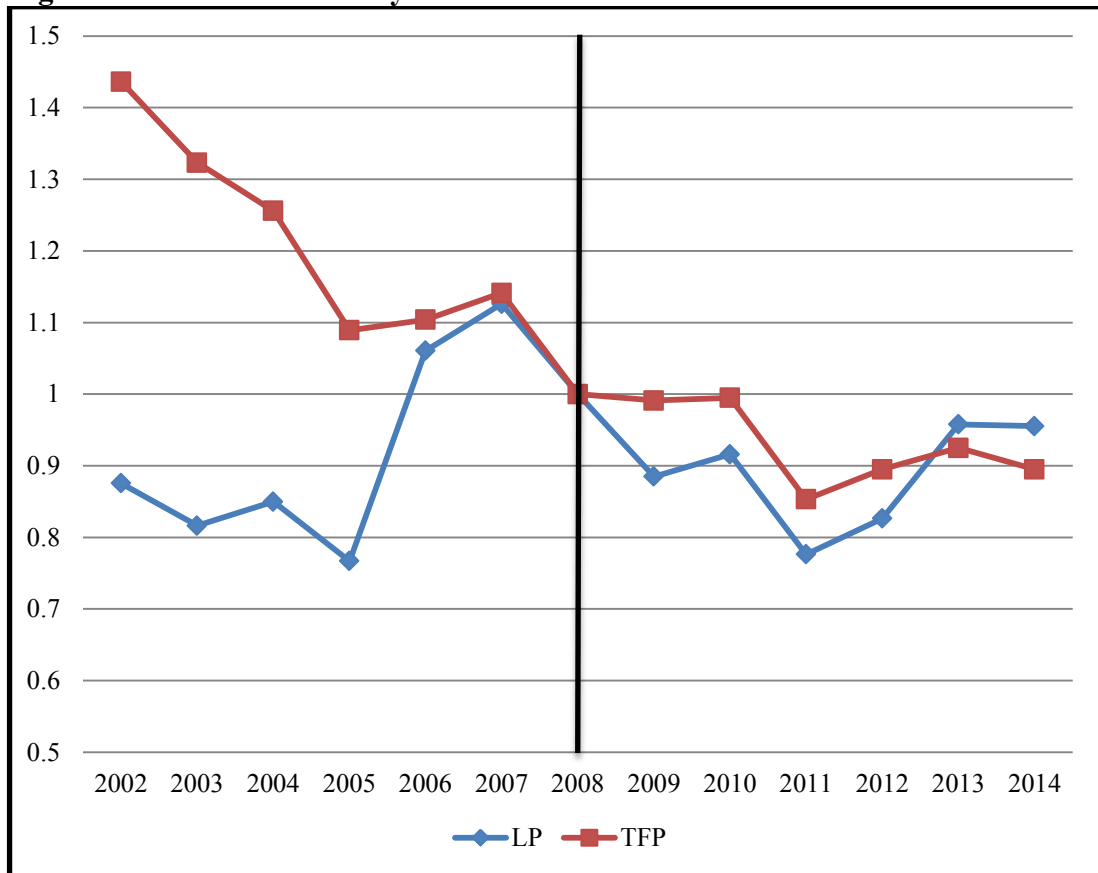
In the context of financial performance, the company is profitable, however, there is no discernible trend in these results (see table 4.4). This section instead focuses on analysing productivity in terms of LP and TFP.

Table 4.4: ESB Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000
2002	2,150,841	8,727	182,716	159,380	850,534 (39.5%)
2003	2,341,803	9,587	273,757	248,687	1,286,828 (55.0%)
2004	2,457,706	9,289	151,131	157,420	1,209,147 (49.2%)
2005	2,756,213	10,283	206,258	241,298	912,905 (33.1%)
2006	3,087,504	7,823	168,936	222,618	784,109 (25.4%)
2007	3,461,021	7,856	411,337	431,732	843,800 (24.4%)
2008	3,488,354	7,870	240,961	273,298	1,035,788 (29.7%)
2009	3,014,985	7,783	273,046	580,018	1,091,953 (36.2%)
2010	2,706,654	7,201	225,727	-84,116	2,726,949 (100.7%)
2011	2,916,219	8,212	54,839	100,032	879,231 (30.1%)
2012	3,260,112	7,992	306,860	194,107	716,773 (22.0%)
2013	3,422,484	7,490	408,646	510,384	311,880 (9.1%)
2014	3,257,954	7,149	551,990	215,393	913,208 (28.0%)

Source: Company Annual Reports. Note: Figure within parentheses represents capex as a percentage of turnover.

Figure 4.2: ESB Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Figure 4.2 shows ESB's TFP and LP results for the period 2002 to 2014. TFP levels have largely fallen over the period, however, the trend in LP is more cyclical in nature.

The initial decline in TFP between 2002 and 2005 can be attributed to a number of factors. First, the company made a significant investment of €3.3 billion in expanding and updating its transmission and distribution network between 2000 and 2005. Second, despite a general increase in the demand for electricity as a result of growth in the Irish economy, output declined between 2003 and 2005. This was due to the partial opening of the market (32 per cent) to competition in 2003 which resulted in the company having to compete for industrial users. Third, non-payroll related operating costs increased significantly between 2002 and 2005 as a result of rising international oil and gas prices. The upward trend in LP between 2003 and

2007 is largely attributed to a decrease in employee numbers from 9,587 to 7,856 following the implementation of a voluntary severance scheme.

The reductions in both LP and TFP observed between 2007 and 2011 were partly explained by a significant reduction in output as a result of a decline in the demand for energy products in the wake of the economic crisis. Also, the company invested €4.6 billion in upgrading the national electricity infrastructure and acquiring renewable energy assets. In addition, the ESB acquired the electricity network in Northern Ireland (NIE) for €1.2 billion in 2010 (which significantly increased employee numbers and adversely affected LP). Another factor was a significant increase in competition following full opening of the market in 2007. The company's ability to respond to this increased competitive pressure was restricted by the regulation of domestic prices by CER (until 2011). Finally, there was a significant increase in non-payroll related costs following the implementation of the carbon levy in 2010.

The general improvement in LP and TFP from 2011 onwards was driven by a combination of factors including a reduction in costs from the implementation of a cost reduction programme in 2010 and an increase in output following the company's entrance into the domestic gas market in 2011 (in 2014 the company had a share of 21.48 per cent in the domestic gas market which accounts for 36 per cent of the total gas market) (CER 2014).

Since the turn of the 21st century, the ESB has faced significant challenges due to the gradual liberalisation of electricity markets and establishment of new regulatory structures. Although consistently profitable, the company recorded sustained reductions in TFP over the period 2002-2011. Reduced levels of TFP were largely attributable to the company's fulfilment of its public mission to invest in Ireland's electricity infrastructure. Lower levels of efficiency were also attributable to the wider economic cycle and the post-2008 recession. Productivity levels measured by LP and TFP have improved since 2011 with latter remaining markedly lower than the level recorded in 2002.

4.1.3 Dublin Airport Authority (DAA)

The DAA was established as a limited company in 1937 with responsibility for managing Dublin Airport on an agency basis on behalf of the Minister for Industry and Commerce. In 1969 it assumed the additional responsibility of managing both Shannon and Cork Airports. Full ownership rights of all assets were transferred to the DAA in 1998 under the *Air Navigation and Transport (Amendment) Act* and in 2004 more autonomy was granted to each of the three airports with the enactment of the *State Airports Act*. This was to allow for their eventual separation as fully independent entities. The DAA continues to own and operate Dublin Airport and Cork Airport, but Shannon Airport separated from the group in December 2012. The company is profitable and employs close to 2,800 individuals in both its domestic and international activities.

Under its subsidiary Aer Rianta International (ARI) the company expanded its international operations significantly from the mid-1990s onwards. ARI's core area of business includes the management and operation of airport retail businesses in Europe, Asia and the Americas. In addition to airport retail operations ARI also acquired ownership stakes as part of joint partnerships in several airports including Birmingham International Airport (1997), Düsseldorf (1998) and Hamburg (2000).

Although airline deregulation and the expansion of Low Cost Carriers (LCC's) brought about significant developments in the international aviation industry in recent years, competition has been slow to develop in the Irish airport sector. The DAA has retained a dominant position with, on average, a 95 per cent market share of passenger numbers in recent years, with Dublin accounting for the vast majority of this total. This is principally due to Ireland's land mass and population which is small in comparison to other European countries where there has been substantial growth in competition (e.g. France and the UK). There have however been significant developments in the regulatory environment in recent years with the establishment of the Commission for Aviation Regulation (CAR) in 2001 to replace traditional government department regulation. The CAR originally regulated charges for all three of the State airports. However, since the enactment of the *State Airports Act 2004* the regulation of charges is confined to Dublin Airport.

The DAA has been profitable (see table 4.5) over the period of analysis, employing on average 3,000 individuals and undertaking significant capital investment in core assets. However, the trend in the financial performance of the company is erratic with no clear pattern of improvement or deterioration evident.

Table 4.5: DAA Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000
2002	420,874	3,431	75,912	36,223	95,805 (22.8%)
2003	436,868	3,387	48,641	6,927	68,984 (15.8%)
2004	465,688	3,453	69,907	31,148	23,607 (5.1%)
2005	524,982	3,620	94,070	50,086	49,743 (9.5%)
2006	590,586	3,657	116,353	165,962	200,726 (34.0%)
2007	623,364	3,163	150,079	347,526	52,297 (8.4%)
2008	630,940	3,237	117,929	47,074	320,323 (50.8%)
2009	546,716	3,103	65,399	-13,267	144,685 (26.5%)
2010	558,153	2,971	91,401	33,110	979,417 (175%)
2011	557,492	3,032	93,749	30,193	109,305 (19.6%)
2012	574,611	3,016	112,804	19,439	26,183 (4.6%)
2013	500,589	2,588	100,006	38,158	64,891 (13.0%)
2014	563,792	2,813	86,784	19,260	63,765 (11.3%)

Source: Company Annual Reports. Note: Figure within parentheses represents capex as a percentage of turnover.

Figure 4.3: DAA Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.3 shows the DAA's TFP and LP results for the period 2002 to 2014. Following an upward trend between 2002 and 2007, both LP and TFP declined between 2008 and 2011.

The improvement in productivity from 2002 to 2007 is primarily the result of a significant increase in output as passenger numbers rose from 19.3 million in 2002 to a record high of 30 million in 2007. In addition, revenue from non-aeronautical activities increased by 33.6 per cent during the same period. LP in particular improved significantly between 2006 and 2007 as a result of a reduction in employee numbers following the sale of its subsidiary, the Great Southern Hotel Group (GSHG).

Both productivity measures fell between 2007 and 2009 due to a substantial reduction in passenger numbers as a result of reduced demand for travel during the

global financial crisis.¹⁷ TFP declined sharply between 2009 and 2010 and this was mainly due to the company's substantial investment in the construction of a new terminal (T2). The general improvement in TFP and LP from 2010 to 2014 is driven by strong growth in output, reduced capital investment and a reduction in employee numbers resulting from the implementation of a cost recovery programme in 2009/10 and the separation of Shannon airport from the group in 2012.

The DAA has undergone significant change in recent years particularly in the context of its regulatory environment and the separation of Shannon airport from the Group. Reduced levels of TFP during the period of analysis were largely attributable to the company's substantial investment programme. Significant levels of capital investment concentrated in short periods is not uncommon in the airport sector, however, it is important to recognise that the benefits of this type of investment are unlikely to offset the cost of the new capacity during the investment period and as such TFP will be adversely affected in the short-term. It is worth noting that passenger numbers increased significantly from 25.3 million in 2014 to 28 million in 2016. However, any improvement in TFP from this increase in output is likely to be short-lived as the DAA plan to undertake significant investment between 2017 and 2020 with the construction of a new €320 million runway at Dublin airport.

4.1.4 Córas Iompar Éireann

Córas Iompar Éireann (CIÉ) was established in 1945 for the purpose of providing bus and rail transport services in Ireland. The Group was re-organised in 1987 to allow for the establishment of three subsidiary companies:

- Bus Éireann - provides rural and urban bus services throughout Ireland, with the exception of Dublin City.
- Dublin Bus – provides bus services in the greater Dublin area.
- Irish Rail - provides national rail passenger and freight services in addition to managing Rosslare Harbour.

Each company has autonomy with regards to its day-to-day operations, however, overall financial control and strategic direction remains with the parent company

¹⁷ Passenger numbers declined from 30 million in 2007 to 22.6 million in 2010 (DAA Annual Reports).

CIÉ. Since 2009 bus and rail tariffs in addition to the licensing of all commercial bus operators has been regulated by the National Transport Authority (NTA). Both Bus Éireann and Dublin Bus face competition in their respective markets and this is discussed in more detail in the company analyses.

In contrast to the other companies included in this study, Bus Éireann, Dublin Bus and Iarnród Éireann receive significant funding from the state for providing services which are considered socially necessary but economically unviable. The annual subsidy payment is decided upon by the Department of Transport, however, it is CIÉ that decides how the payment is distributed amongst the three companies. Roughly 10 per cent of the subsidy payment is dependent on the operator meeting certain performance criteria and they are monitored on a quarterly basis by the NTA. The level of PSO funding varies from year to year and from SOE to SOE.

4.1.4.1 Bus Éireann

In addition to providing commercial services through its Expressway division, Bus Éireann has contracts with the NTA and the Department of Education for the provision of public service routes and school transport respectively. Bus Éireann receives significant funding from the state for providing public service routes which are considered socially necessary but economically unviable (see table 4.7).

In terms of net profits, Bus Éireann has been largely unprofitable during the period of review (see table 4.6). Turnover peaked in 2009 before falling by 8.2 per cent as passenger numbers declined from 2010 to 2012 as a result of the economic crisis and increased competition from private operators on its commercial routes. Another contributing factor to this decline in profits was the 25.3 per cent reduction in PSO funding between 2009 and 2012. Net profits recovered from 2013 largely as a result of an annual 5 per cent increase in fares in addition to an increase in passenger numbers on provincial city services.

Table 4.6: Bus Éireann Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000	Capital Grant €000
2002	224,413	2,701	2,589	-9,421	5,304	2,616 (49.3%)
2003	241,541	2,721	15,143	1,547	16,035	8,646 (53.9%)
2004	250,536	2,736	14,926	5,776	21,257	2,984 (14.0%)
2005	266,490	2,758	14,607	3,525	14,569	3,824 (26.2%)
2006	291,528	2,756	9,543	-1,689	31,926	12,835 (40.2%)
2007	319,543	2,784	10,233	-2,120	46,281	40,361 (87.2%)
2008	341,522	2,837	4,103	-6,092	54,539	41,139 (75.4%)
2009	352,028	2,820	5,495	-4,152	3,644	296 (8.1%)
2010	330,909	2,704	6,416	-1,267	1,467	-
2011	327,088	2,605	5,535	-1,754	33,500	19,191 (57.3%)
2012	323,211	2,551	-226	-8,570	2,419	1,197 (49.5%)
2013	324,299	2,486	6,942	343	3,378	1,779 (52.7%)
2014	332,286	2,456	13,058	5,128	26,671	24,313 (91.2%)

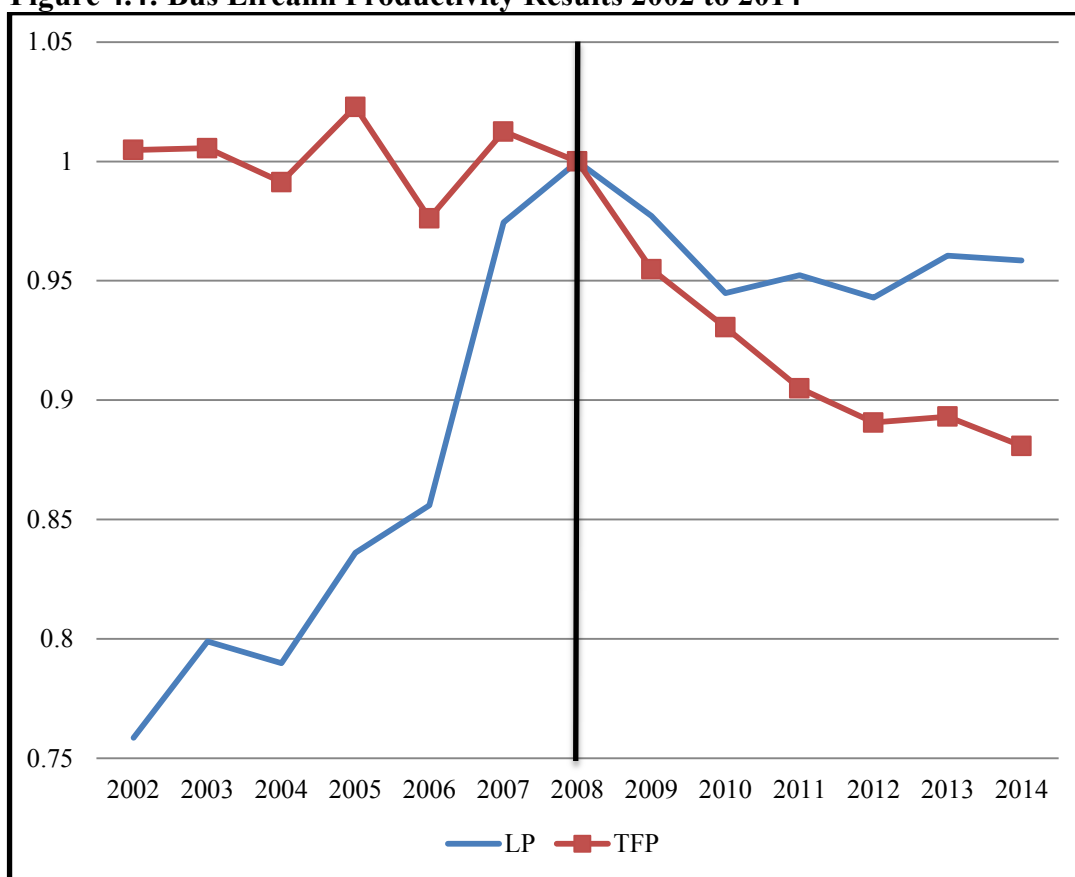
Source: Company Annual Reports. Note: figures in parentheses represent capital grant as a percentage of capital expenditure.

Table 4.7: Breakdown Bus Éireann Revenues and Costs 2002-2014

	Expressway and School Transport			Public Service				
	Revenue	Cost	Total	Revenue	Cost	Total	Grant	P/L on PSO
2002	148,831	144,096	4,735	53,814	89,738	-35,924	21,768	-14,156
2003	158,907	151,214	7,693	59,778	88,780	-29,002	22,856	-6,146
2004	163,149	154,353	8,795	63,388	90,406	-22,018	23,999	1,981
2005	176,566	168,910	7,656	64,724	94,055	-29,331	25,200	4,131
2006	199,211	191,968	7,243	65,858	101,249	-35,391	26,459	-8,932
2007	216,371	208,389	7,982	66,577	104,251	-37,674	36,595	-1,079
2008	227,052	225,977	1,075	72,624	121,632	-49,008	41,846	-7,162
2009	230,447	234,089	-3,642	72,216	122,605	-50,389	49,365	-1,024
2010	218,976	224,233	-5,257	66,894	108,919	-42,025	45,039	-3,014
2011	218,502	221,569	-3,067	65,183	105,064	-39,881	43,403	3,522
2012	218,148	221,148	-3,000	68,180	107,710	-39,530	36,883	-2,647
2013	218,587	216,525	2,062	71,348	107,377	-36,029	34,364	-1,665
2014	222,770	219,698	3,072	75,129	105,376	-30,247	34,387	4,140

Note: Separate figures for Expressway were not available.

Figure 4.4: Bus Éireann Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.4 shows Bus Éireann's LP and TFP results for the period 2002 to 2014. Despite a significant increase in output (passenger km) TFP was relatively stable between 2002 and 2007. This is explained by a substantial increase in capital investment as the company expanded its fleet in an effort to reduce average journey times and provide additional services. There was also a considerable increase in non-payroll related costs during the same period which was mainly due to increased fuel consumption as a result of traffic congestion. In contrast to TFP, LP followed an upward trend between 2002 and 2007. With employee numbers relatively stable over this period the growth in LP was attributable to increases in output.

Productivity levels (LP and TFP) peaked before the economic crisis and declined thereafter. This is mainly explained by a decrease in output as passenger numbers fell from 93.9 million to 77.2 million between 2008 and 2012. The company

attributed this decline to a fall in the number of people in work and a reduction in the number of tourists visiting Ireland. In addition, there was extra pressure on the company's cost base following the loss of an excise duty rebate in respect of fuel in 2009 and the introduction of a carbon tax in 2010. LP showed signs of recovery from 2009 onwards as employee numbers were reduced following the implementation of a Cost Recovery Programme in 2008 that included a voluntary severance scheme, the reorganisation of bus services and the utilisation of higher capacity vehicles on certain routes.

Overall, it is evident that the economic performance of Bus Éireann was strongly pro-cyclical and demand-led. This is reflected in the significant labour productivity gains recorded by the company in the period preceding the economic crisis and the deterioration in both indicators thereafter. In terms of financial performance, Bus Éireann is in a precarious position as the company continues to make losses on the PSO routes that it services due to a shortfall in the annual PSO subvention payment made to the company. Prior to the economic crisis these losses were subsidised by revenue from its Expressway operations, however, this is no longer a viable option for the company as (despite a brief recovery in 2013 and 2014) this division has become a loss making entity in recent years due to the continued decline in passenger numbers as a result of increased competition from private operators. It should be noted that at the time of writing Bus Éireann is in financial difficulty with a reported loss of €5.6 million in 2015 and an estimated loss of €6 million in 2016.¹⁸

¹⁸RTÉ (2017) 'Bus Éireann faces insolvency within 18 months'. Available at: <https://www.rte.ie/news/2017/0110/843933-bus-eireann/>

4.1.4.2 Dublin Bus

In the period preceding the crisis Dublin Bus recorded consistent profits (see table 4.8) however there was a reversal of this trend from 2008 to 2012 as revenue declined by 13.1 per cent as a result of a decrease in passenger numbers and PSO funding declined by 14.7 per cent. Since 2012 the company has returned to profitability largely as a result of an 8 per cent average annual increase in fares in addition to a rise in passenger numbers.¹⁹

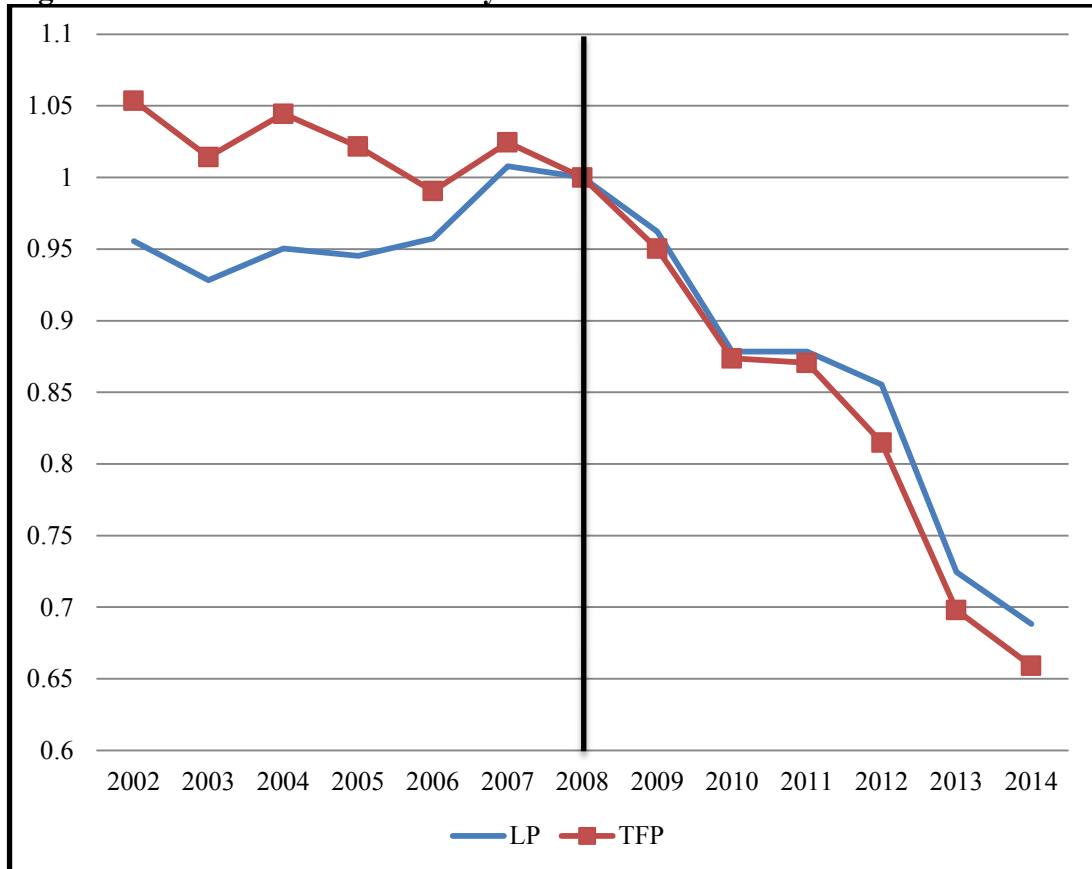
Table 4.8: Dublin Bus Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000	Capital Grant €000	PSO Funds €000	P/L on PSO €m
2002	215,351	3,319	15,814	3,414	17,590	17,334 (98.5%)	56,063	-
2003	226,804	3,367	19,710	7,394	27,307	5,700 (20.9%)	53,867	-
2004	239,363	3,408	14,174	2,039	13,984	753 (5.4%)	61,900	-
2005	246,353	3,407	16,335	1,996	27,825	10,609 (38%)	64,900	-
2006	261,117	3,453	16,445	4,258	62,016	27,962 (45.1%)	69,845	-
2007	280,442	3,650	10,489	4,824	38,302	1,444 (3.8%)	80,078	-
2008	289,297	3,825	-1,472	-14,944	41,555	1,547 (3.7%)	85,629	-17.9
2009	279,506	3,699	6,046	-12,925	18,189	6,623 (36.4%)	83,199	-15.2
2010	257,835	3,562	791	-22,059	9,295	6,200 (66.7%)	75,682	-22.7
2011	251,343	3,345	-8,428	-18,150	6,400	6,168 (96%)	73,032	-18.9
2012	265,822	3,236	8,052	-3,823	33,907	22,881 (67.5%)	74,768	-11.3
2013	268,668	3,172	9,025	481	35,338	37,369 (105.7%)	64,540	-2.2
2014	276,040	3,176	20,716	11,569	34,027	61,249 (180%)	60,039	6.1

Source: Company Annual Reports. Note (1): Figure within parentheses represents capex as a percentage of turnover. Note (2): Profit/Loss (P/L) figures on PSO not available prior to 2008.

¹⁹Carbery, G. 'Details of sharp fare increases on bus, rail and Luas released', *Irish Times*, 23 October 2013. Available at: <http://www.irishtimes.com/news/consumer/details-of-sharp-fare-increases-on-bus-rail-and-luas-released-1.1570436>

Figure 4.5: Dublin Bus Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.5 shows that Dublin Bus's productivity has declined considerably since 2008. Before the economic crisis, TFP was stable whereas LP levels were increasing. The company recorded profits but there was no evident pattern of improvement despite increased output. Although output increased before 2008, the company recorded relatively stable levels of TFP as capital and non-payroll costs also rose. The company embarked on a programme of fleet procurement in the early 2000s resulting in a 42.5 per cent increase in capital spend between 2002 and 2007. In addition, there was a significant increase in the company's non-payroll costs relating to fuel. This was largely related to increased traffic congestion which the company estimated to cost €49 million per annum.

Both LP and TFP declined considerably from 2007 onwards. This deterioration was mainly explained by a significant decrease in output between 2008 and 2013 as passenger numbers declined in the wake of the economic crisis. This decrease was in line with national trends as passenger numbers on public transport decreased from

277.1 million in 2009 to 259.7 million in 2013 primarily as a result of reduced numbers of people travelling to work.²⁰

Although the company reported profits before the economic crisis, the scope for recording significant improvements in productivity levels was constrained by increased investment and employee numbers. The substantial decline in productivity from 2008 onwards was demand led with passenger numbers decreasing significantly in the aftermath of the crisis. The economic crisis also had significant ramifications in terms of government funding as there were substantial cuts in support for PSO services which adversely affected the company's financial performance.

4.1.4.3 Irish Rail

In terms of net profits, Irish Rail has been consistently unprofitable over the period of analysis (see table 4.9). This is largely the result of inadequate PSO funding particularly following the onset of the economic crisis where there was a 38 per cent reduction in funding between 2007 and 2014. Although the company undertook significant capital investment during the period it should be noted that this investment is fully funded by Exchequer grants.

²⁰ In addition, between 2009 and 2013 the number of people in Dublin utilising alternative methods of transport such as private car, cycling and rail/dart/luas increased by 1.8, 0.3 and 0.5 per cent respectively while demand for bus services decreased by 0.2 per cent (DTTS 2015).

Table 4.9: Irish Rail Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000	PSO Subvention €000	P/L on PSO €m
2002	373,673	5,976	14,871	-22,454	287,308	155,483	-
2003	398,980	5,833	35,739	-19,427	308,757	168,257	-
2004	397,458	5,590	34,481	-16,745	257,847	171,420	-
2005	415,611	5,436	38,859	7,527	260,262	179,990	-
2006	430,073	5,317	44,265	-5,100	242,560	188,716	-
2007	433,740	4,985	38,979	-4,989	339,816	189,910	-
2008	415,094	4,906	14,833	-29,061	477,512	181,152	-13.9
2009	380,971	4,679	26,656	-32,003	311,693	170,624	-10.8
2010	357,700	4,431	17,403	-36,031	321,127	155,137	-17.3
2011	349,083	4,129	17,679	-21,859	234,038	148,683	-27.1
2012	367,944	3,814	47,612	-22,472	145,501	166,418	-26.1
2013	337,738	3,768	25,356	-16,415	159,880	127,029	-12.1
2014	412,829	3,770	34,774	-2,170	122,439	117,386	-2.2

Source: Company Annual Reports. Note: Profit/Loss (P/L) figures on PSO not available prior to 2008.

Figure 4.6: Irish Rail Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.6 shows Irish Rail's LP and TFP results for the period 2002 to 2014. Overall, LP has followed an upward trend with levels improving significantly between 2002 and 2014, whereas TFP improved from 2003 to 2007 before declining considerably from 2008 to 2013.

The initial decline in TFP between 2002 and 2004 can chiefly be explained by two factors. Firstly, there was a decrease in output as a result of the suspension of certain services to accommodate upgrades to the infrastructure. Secondly, there was a significant increase in investment as a result of the implementation of two Rail Safety Infrastructure Programmes (RSIPs) between 1999 and 2008 (costing €1.2 billion).²¹ In addition, the company invested €115 million in new railcars in 2003. The resulting increase in capacity, in addition to increases in passenger numbers as a result of strong growth in the Irish economy, had a positive impact on both LP and TFP as passenger numbers increased by 10.9 million between 2004 and 2007.

Both LP and TFP declined in the immediate aftermath of the economic crisis. This was the result of a 33.2 per cent decrease in output between 2007 and 2011 which coincided with a 56 per cent increase in capital investment, the majority of which is attributed to an increase in spending under the 2009 to 2013 RSIP. LP improved from 2009 onwards as employee numbers were reduced by 19.4 per cent in order to improve cost efficiency.

In terms of financial performance, Irish rail has been consistently unprofitable during the period of review and this is primarily due to a shortfall in the PSO subvention payments made to the company. Economic performance during the period was cyclical in nature as productivity was primarily demand led. Despite investing heavily in rail infrastructure in the period preceding the economic crisis the company made significant productivity gains as a result of substantial increases in passenger numbers. Although the company recorded improvements in labour

²¹The purpose of these investment programmes was to improve all aspects of safety across the Irish Rail network by upgrading, renewing and modernising the infrastructure network.

productivity from 2009 onwards as a result of a reduction in employee number, TFP in 2014 remains below its 2002 level.

4.1.5 An Post

An Post was established in 1984, replacing the Department of Post and Telecommunications as the national postal provider. An Post's operations encompass postal, distribution and financial services. In addition, the company provides agency services for a number of government departments and commercial bodies through its post office network. The company is profitable and employs close to 11,700 individuals.

An Post had undergone significant change during the period of analysis in the areas of competition and regulation. In particular the company faces a significant challenge with regards to the continued decline in traditional mail volumes as a result of increased competition from alternative e-communication methods. The company has responded to these changes during the period of review by expanding its existing services and diversifying its activities outside of its core market. For example the company established the Gift Voucher Shop in 2002, Postbank in 2007 and Postmobile in 2010.

The competitive environment in which An Post operates has changed significantly in recent years. Since 1998 a number of EU Directives on postal liberalisation have been introduced (see table 4.10) opening letter post to competition. Despite full opening of the market in 2011, growth in competition for the delivery of letter post has been slow as An Post continues to dominate the market as the Universal Service Provider (USP).

Table 4.10: Liberalisation Directives for European Postal Market

Year	Directives
1997 (97/67/EC)	Monopoly only included service delivery of letters and parcels below 350g in weight or, that costing five times less than the basic tariff
2002 (2002/39/EC)	Amended the 1998 restrictions and the reserved area was reduced to 100g and three times the basic tariff
2008 (2008/06/EC)	All reserve areas were abolished in order to introduce full competition

Source: European Commission Publications (1997-2008)

In its role as USP, An Post is regulated by the Commission for Communication Regulation (ComReg), the independent regulator that replaced the Office of the Director of Telecommunications Regulation in 2002. ComReg currently regulate postal tariffs that fall within the scope of the USP. In addition, it closely monitors quality of service with regards to delivery efficiency.

An Post has been largely profitable (see table 4.11) over the period of analysis, however, the trend in the financial performance of the company is erratic with no clear pattern of improvement or deterioration evident.

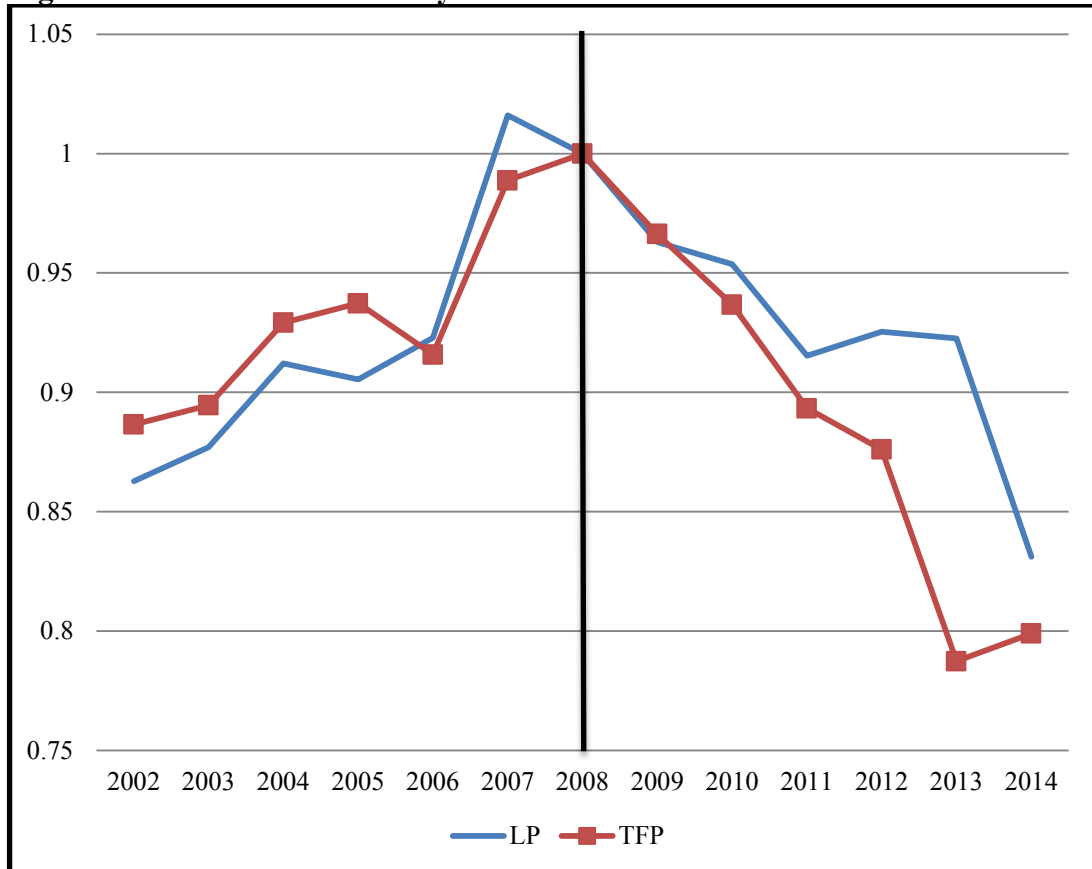
Table 4.11: An Post Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000
2002	682,996	11,877	-17,396	-70,469	64,936 (9.5%)
2003	709,209	11,945	-42,891	-32,049	20,893 (2.9%)
2004	750,193	11,754	-3,007	11,137	5,725 (0.8%)
2005	752,887	11,379	16,197	40,710	10,253 (1.4%)
2006	818,827	11,312	14,665	95,705	18,681 (2.3%)
2007	875,983	11,161	29,126	43,335	10,246 (1.7%)
2008	850,043	11,173	31,235	33,215	38,931 (4.6%)
2009	804,216	11,271	5,741	-29,065	51,414 (6.4%)
2010	805,120	11,288	5,838	-24,682	47,254 (5.9%)
2011	806,714	11,276	2,216	347	35,998 (4.5%)
2012	807,295	11,240	-17,484	-39,377	28,774 (3.6%)
2013	811,693	11,041	-11,463	5,869	22,288 (2.7%)
2014	820,557	11,682	5,887	24,161	9,871 (1.2%)

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Source: Company Annual Reports. Note: Figure within parentheses represents capex as a percentage of turnover.

Figure 4.7: An Post Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.7 shows An Post's LP and TFP results for the period 2002 to 2014. Both LP and TFP are generally upward sloping between 2002 and 2007 and downward sloping following the onset of the economic crisis in 2008.

The improvement in productivity between 2002 and 2007 was driven by an increase in output related to both mail volume (5.6 per cent) and revenue from ancillary activities (31.1 per cent). The increase in output during this period is largely attributed to the underlying strength of the economy. Another factor contributing to the improvement in productivity during the same period was an average annual reduction in capital investment of 1.4 per cent.

The problem of declining mail volumes became more acute from 2007 onwards due to the downturn in the economy and increasing competitive pressure from other postal service providers and alternative e-communication methods. Between 2007 and 2014 letter mail volume declined by 31.5 per cent. In addition, the company's

capital investment increased significantly under a multi-year investment programme introduced in 2008.²² The decline in TFP from 2011 onwards is not reflected in LP as there was a significant reduction in employee numbers under a voluntary severance scheme implemented as part of the company's ongoing cost containment drive, however, LP declined significantly in 2014 as a result a reduction in output and an increase in employee numbers.

Overall, the trends in both productivity measures have been pro-cyclical and the significant improvements recorded before 2008 were followed by a complete reversal in this trend of improvement. The deterioration in productivity from 2008 was largely due to falling traditional mail volumes as a result of increased competition from alternative e-communication methods. Given its universal service obligation An Post was restricted in how it could respond to this challenge as any positive effects from a reduction in inputs would have been overshadowed by the sheer scale of the decline in output. Productivity levels measured by LP and TFP were significantly lower in 2014 in comparison to 2002 levels.

4.1.6 Bord na Móna

Bord na Móna was established in 1946 for the primary purpose of harvesting the country's peat lands for energy production and to contribute to regional development through job creation. Prior to the 1980s the company's activities were confined to the harvesting of milled peat and the production of peat briquettes for fuel. Approximately 55 per cent of its milled peat supply was sold to the state owned ESB under the government's policy of supporting indigenous fuel supplies. This created a complex relationship between the two SOEs as Bord na Móna became increasingly dependent on the ESB as its primary customer despite having to sell output at artificially lower prices (Sweeney 1990). Following significant losses in the late 1980s²³ the company began to focus on expanding the commercial side of the business:

Bord na Mona is engaged in a change of corporate culture. It is being transformed from a production oriented company to one which is market led. In future, corporate objectives will be increasingly expressed in commercial terms. While the Company's contribution to national economic development, which has been significant over more

²²The programme included the introduction of additional technologies, further capital expenditure on necessary infrastructure, investment in staff training and the adoption of new business processes.

²³ This culminated in a loss of €115.5 million in 1988/89 as a result of several factors including adverse weather conditions, high interest charges and low international energy prices.

than four decades, will remain as its core objective, this contribution can only be optimised by Bord na Mona being efficient in competitive market conditions and by making a positive return on capital.

(Annual Report 1988, p. 10)

In the late 1990s the company expanded its solid fuel division with the acquisition of coal and oil distribution businesses in 1996 and 1997 respectively.²⁴ During this time the company's peat and fuel activities began to face a number of constraints as a result of increasing environmental legislation aimed at protecting Irish bog lands and reducing carbon emissions. Subsequent to this the company further diversified its activities in the 2000s in the areas of waste management (waste and recycling collection services) and renewable energy (wind, biomass and biogas).

Over the period of review Bord na Móna has reduced its dependency on its energy and fuel divisions through the diversification of its activities into complementary fast-growing areas such as renewable power generation and waste management. As a result, Bord na Mona's core revenue and profitability is no longer dependent on its peat energy and fuel operations which accounted for just 51 per cent of turnover in 2014 compared to 70.5 per cent in 2002.

In terms of its financial performance Bord na Móna is a profitable company which has increased employment and undertaken significant capital expenditure over the 2002 to 2014 period (see table 4.12). In addition, the company paid dividends of €54.6 million to the Exchequer between 2006 and 2014.

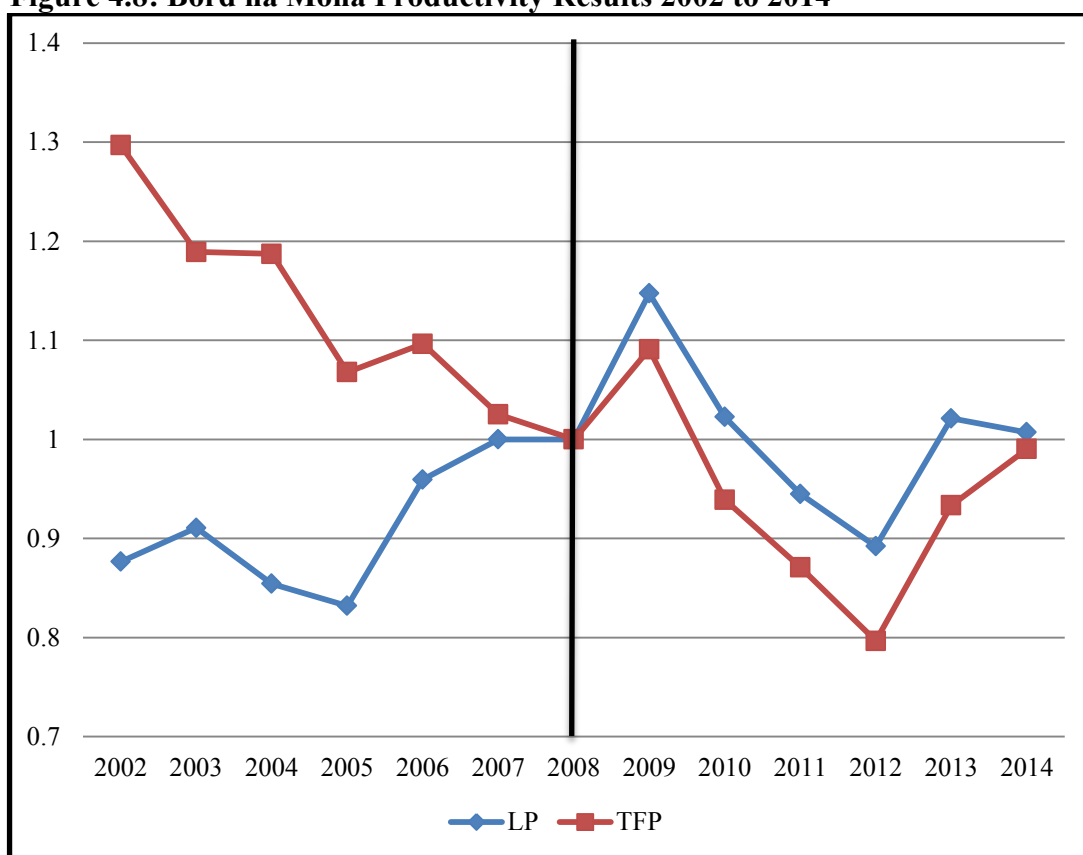
²⁴ By 2005 the fuel division accounted for 38.8 per cent of turnover (this is in comparison to 22.6 per cent in 1995).

Table 4.12: Bord na Móna Financial Results 2002 to 2014

	Turnover	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000
2002	227,593	1,967	22,966	16,325	10,953 (4.8%)
2003	246,244	1,927	22,532	18,380	15,095 (6.1%)
2004	252,867	1,989	18,368	15,715	18,045 (7.1%)
2005	257,860	1,885	17,760	15,400	17,949 (7.0%)
2006	295,738	1,781	34,423	28,698	17,615 (6.0%)
2007	299,175	1,751	27,781	24,631	100,180 (33.5%)
2008	371,226	2,035	21,632	16,680	50,132 (13.5%)
2009	401,567	2,064	23,776	15,114	32,810 (8.2%)
2010	384,417	2,136	23,038	10,512	14,684 (3.8%)
2011	382,069	2,122	24,458	13,127	44,857 (11.7%)
2012	383,826	2,141	-2,946	-15,975	18,138 (4.7%)
2013	426,120	2,044	22,791	9,232	9,960 (2.3%)
2014	426,798	2,061	50,195	33,510	24,326 (5.7%)

Source: Company Annual Reports. Note: 1) Bord na Móna's figures are reported as of the 12 months to March of the relevant year; 2) Figure within parentheses represents capex as a percentage of turnover.

Figure 4.8: Bord na Móna Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.8 shows Bord na Móna's LP and TFP results for the period 2002 to 2014. TFP decreased in most of the years covered. Although increases were recorded in 2013 and 2014, TFP levels remain below those recorded in the early 2000s. In contrast LP growth followed the wider economic cycle with significant gains in the pre-2009 period followed by reductions during the recession.

The initial downward trend in LP was largely due to a reduction in output from the company's peat business as a result of poor harvesting conditions in 2003/04. The general upward trend in LP between 2005 and 2009 can primarily be attributed to reductions in employee numbers following the implementation of a voluntary severance scheme in 2004. LP deteriorated from 2009 to 2011 as a result of the general decline in demand for energy products in addition to increases in employee numbers as a result of the company's diversification into new activities.

The deterioration in TFP between 2002 and 2008 is associated with several factors. First, the company significantly increased its capital investment in areas outside of its traditional market with the acquisition of a number of assets including: coal and oil distribution businesses in 2003; a UK based wastewater treatment company in 2004; a biomass and peat power station in 2006; and, a waste management company in 2007. Second, the company's output declined between 2003 and 2006 due to a poor peat harvest in 2003/04 and a delay in the commercial operation of a new power station in 2005. TFP continued to deteriorate in the wake of the economic crisis as output declined between 2008 and 2011 as a result of the general decline in the demand for energy products. In addition there was a significant increase in capital investment from 2009 to 2011 as the company began to develop its renewable generation portfolio. Increased output in addition to a substantial reduction in non-payroll costs following the implementation of a cost reduction programme across all of the company's business units led to considerable TFP gains from 2012 onwards.

Overall, Bord na Móna has undergone significant change in recent years in an effort to reduce its dependency on its core activity of peat harvesting. Consequently, the

company now operates in areas outside of its traditional business and this has contributed significantly to revenue growth in recent years. During the period of review the company recorded strong financial results despite significant investment in new activities and the impact of the economic crisis. In contrast the company's economic performance was less impressive with significant deterioration in TFP pre-2012 which was largely due to increased capital investment. This increased investment however was aimed at reducing dependency on peat related activities which the company plans to exit fully by 2030.

4.1.7 Coillte

Coillte was corporatised from the civil service in 1988 to manage the state's forestry assets on a commercial basis. It is one of the biggest land owners in the state, with over 445,000 hectares (approximately 6 per cent of Ireland's land cover). The company has traditionally provided a number of non-commercial services such as nature conservation, recreation, and protection of cultural heritage and important landscape. In the 1990s Coillte began to focus on developing the commercial side of its business as the company was:

...well positioned to move into a very exciting stage in its development. One of the major priorities for the future is to further integrate into timber processing activities. This should result in diversification into related markets in Ireland and abroad.

(Annual Report 1995, p.5-6)

Consequently, Coillte has undergone significant transformation in recent years through the expansion and diversification of its activities:

- The company began to develop wind farms for private operation in the late 1990s. These wind farms currently account for 20 per cent of total wind generation capacity in Ireland (Coillte Website 2017).
- The company made a strategic move into the international panel product business through the acquisition of SmartPly in 2002 and Medite Europe in 2006.²⁵ The panel division of the company has grown significantly in recent years accounting for 57.3 per cent of total turnover in 2014 (in contrast to 37.1 per cent in 2006²⁶).²⁷

²⁵ SmartPly is a manufacturer of broad panel sheets while Medite Europe is a producer of fibreboard.

²⁶ A breakdown of revenue for each division is not available prior to 2006.

²⁷ It is worth noting that the panel division is an export led business with the UK and European markets accounting for roughly 87 per cent of turnover.

- In 2007 the company began to provide telecommunications masts to support wireless communication (broadband and mobile) in rural areas.
- The company further developed its activities in the renewable energy sector in 2011 when it entered into an agreement with Astellas Ireland Ltd for the supply of biomass fuel.

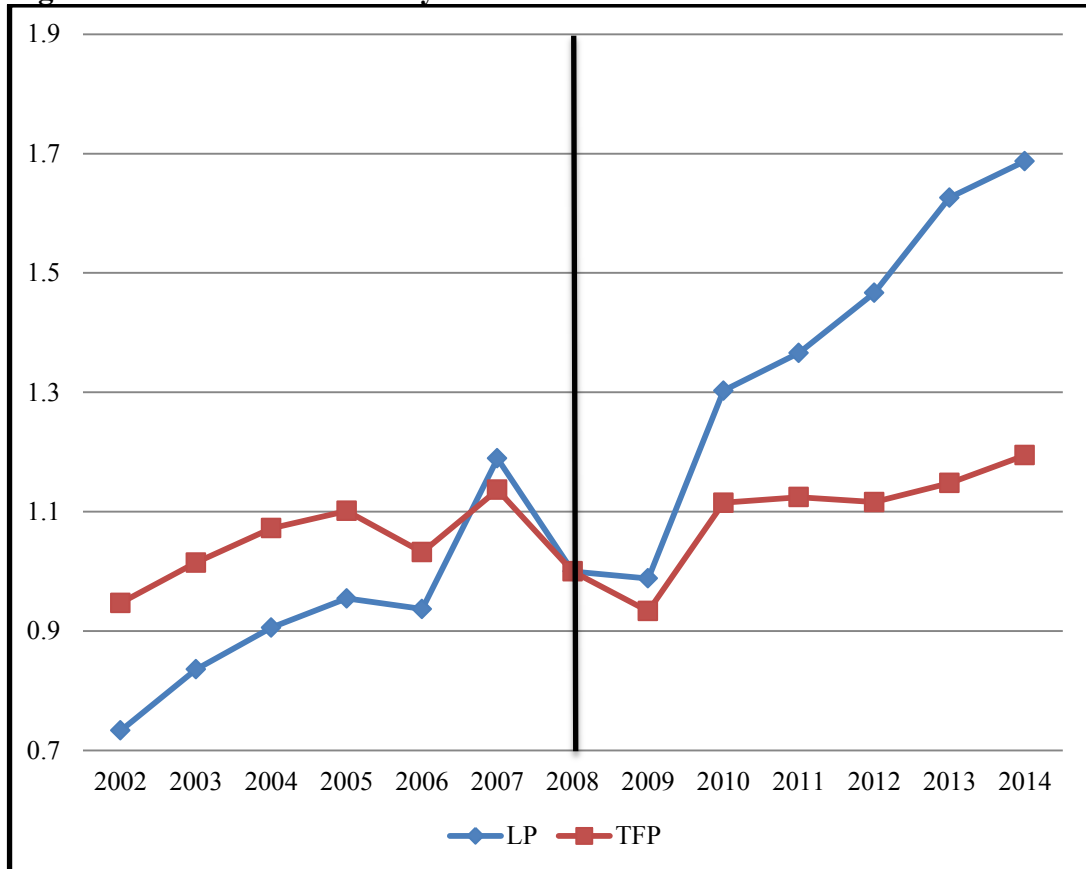
In financial terms Coillte has been consistently profitable during the period of analysis (see table 4.13) employing on average 1,000 individuals and paying an annual dividend to the state since 2010. This is particularly noteworthy given the companies significant investment in the diversification of its activities in addition to its continued role in maintaining Ireland's forestry assets and social/recreational amenities.

Table 4.13: Coillte Financial Results 2002 to 2014

	Turnover €000	Employee Numbers	PBITE €000	Net Profit €000	CAPEX €000
2002	144,135	1,231	25,832	18,736	67,734 (47.0%)
2003	172,121	1,213	33,062	25,510	47,067 (27.3%)
2004	184,965	1,188	42,921	35,066	52,336 (28.3%)
2005	215,673	1,230	48,513	19,654	48,751 (22.6%)
2006	213,789	1,214	32,275	22,464	107,538 (50.3%)
2007	318,128	1,269	64,198	40,128	58,410 (18.4%)
2008	249,475	1,250	20,543	9,206	58,092 (23.3%)
2009	206,865	1,170	817	4,243	40,698 (19.7%)
2010	250,399	1,053	46,065	32,148	45,474 (18.2%)
2011	259,116	1,013	41,485	19,898	42,484 (16.4%)
2012	262,156	960	35,028	15,262	42,690 (16.3%)
2013	275,717	913	41,298	25,766	41,208 (14.9%)
2014	298,040	907	60,542	38,330	48,511 (16.3%)

Source: Company Annual Reports

Figure 4.9: Coillte Productivity Results 2002 to 2014



Source: Authors' calculations from data sourced from annual reports.

Focusing on economic performance, figure 4.9 shows a clear upward trend in both TFP and LP for the period 2002 to 2014. The improvement in productivity between 2002 and 2007 can largely be explained by a substantial increase in output resulting from higher sawnwood sales (following a significant increase in construction in the housing market²⁸) and increased revenue from new acquisitions. For example, revenue from the company's panel division increased by 139.7 per cent between 2006 and 2007 following the acquisition of Mediate in 2006.

The deterioration in productivity between 2007 and 2009 was mainly driven by a fall in output. The decline in residential construction activity²⁹ during the economic crisis had a major impact on output from the company's forest division as a fall in the sale of sawnwood contributed to a 34.9 per cent reduction in forest revenue. In addition, reduced demand for logs and panel products in 2008 was exacerbated by an

²⁸ House completions increased by 52.9 per cent between 2002 and 2006 (CSO 2008).

²⁹ Less than 50,000 housing units were completed in 2008 (down from 93,000 in 2006) (CSO 2008).

unfavourable sterling/euro exchange rate.³⁰ The improvement in productivity from 2009 onwards is largely attributable to an increase in output from the company's forest and panel businesses in addition to cost savings from the implementation of a voluntary early retirement programme.

Overall, Coillte has recorded strong financial performance and achieved significant productivity gains during the period of analysis. The diversification undertaken by the company led to the recommendation in 2011³¹ that it be privatised, however, a subsequent review in 2013 criticised this recommendation as it was not “based on any assessment of the performance of Coillte, nor the market for timber” (Bacon Report 2013, p.1). Consequently, the government announced in 2013 that it would not be selling the company. Coillte's forestry division will face challenges in future years as although the company continues to replant roughly 7,000 hectares of harvested forestry land per annum, new forestation has fallen since 2005. As a result it is “projected that Coillte's share of total supply will have fallen to below 70% after 2022 and that the rate of decline in its share will accelerate thereafter falling below 50 per cent by 2058” (Bacon Report 2013, p. 1). Therefore, it seems likely that the company will continue to diversify its activities in future years in order to further reduce its dependency on its forestry activities.

4.2 Conclusion

The purpose of this chapter has been to measure the financial and economic performance of Ireland's major SOEs and to shed light on the factors that impact on performance. As SOEs are commonly assigned a mix of commercial and socially-oriented objectives there are limits to the suitability of financially based performance analysis. One of the principal contributions of this chapter, therefore, is that it extends the scope of performance analysis to include economic (productivity-based) indicators. The analysis presented in this chapter is the first comprehensive study of the productivity of the main non-financial Irish SOEs and insofar as the author is

³⁰The panel division is an export led business with the UK and European markets accounting for roughly 87 per cent of turnover (Coillte Annual Reports).

³¹ Report from the Review Group on State Assets and Liabilities.

aware is the first such study in the international literature since Molyneux and Thompson's study of nationalised industries in the UK published in 1987.

European and domestic policy developments since the early 1990s have resulted in major changes for the SOEs included in this chapter particularly in the areas of competition and regulation. The introduction of a number of EU Directives on liberalisation resulted in increased competition in many of the markets in which these SOEs operate. This is particularly true for the ESB and Bord Gáis where the supply markets for their respective activities underwent a gradual liberalisation process since the late 1990s. Although these companies are still the largest providers in their respective markets³² their share has been decreasing year-on-year since full liberalisation in 2009. Outside of direct competition in their core markets the SOEs in this study are also facing indirect competition. An Post's traditional mail volumes have been declining since 2008 largely as a result of competition from alternative e-communication methods, while each of the transport companies face competition from alternative travel modes.

The regulatory environments in which these SOEs operate have also undergone substantial change with newly established independent regulatory bodies replacing traditional government regulation. This change is reflective of the wider regulatory reform agenda driven by a number of legislative initiatives at EU level. As a result, a number of SOEs have experienced considerable regulatory changes in areas such as pricing and investment decisions during the period of review.

Each of the SOEs examined in this chapter have taken measures in response to the changes in their external environments. With the exception of the CIÉ companies, each SOE diversified its activities outside of its core business. This is particularly true in the case of Bord na Mona and Coillte, both of which have undergone marked transformation as they diversified away from their traditional core peat and forestry activities respectively. In addition, a number of SOEs have taken advantage of new opportunities afforded by the liberalisation process by expanding their activities into European markets. For example, the ESB acquired network assets in both Northern

³² In 2014 the ESB accounted for 56.3 per cent and 39 per cent of the residential and industrial electricity supply market. While Bord Gáis accounted for 53.7 per cent and 30.8 per cent of the residential and industrial gas supply market (CER 2015).

Ireland and Spain, while the DAA further developed its airport retail business throughout Europe, Asia and the Americas.

This chapter has examined one of the most important issues related to public enterprise reform, namely the impact on company productivity and financial performance. The productivity results presented in this chapter vary across companies thus making it difficult to draw a general conclusion about the economic performance of the SOE sector. In most cases the productivity growth followed the wider business cycle with a general trend of efficiency gains recorded prior to the onset of the global and domestic economic crisis in 2008 and a reversal of this trend recorded thereafter. For the majority of companies where a decline in total factor productivity was measured this result was heavily influenced by significant capital expenditure programmes. Although a number of SOEs (ESB, DAA, Irish Rail, Bord na Móna and Coillte) showed signs of recovery towards the end of the period of analysis, LP and TFP levels in many cases remained significantly lower than those recorded in the period preceding the economic crisis.

The implementation of capital expenditure programmes had a significant adverse effect on the productivity results of certain companies. For example, the ESB's productivity in terms of TFP deteriorated over the period of analysis mainly as a result of high levels of investment in assets related to core activities, while the negative impact of investment concentrated in short periods is evident in the substantial decline in the DAA's productivity from 2009 to 2010. However, it is important to acknowledge that these companies operate within key infrastructure industries that require continued investment in upgrading of infrastructure to ensure adequate capacity, and while certain SOEs receive substantial government funding in this regard (i.e. Irish Rail) others do not (i.e. the ESB and Bord Gáis). In the case of Bord na Móna and Coillte, it was increased investment in assets outside of core activities that negatively impacted productivity results in certain years, however, this investment was geared towards reducing dependency on traditional activities by diversifying into complementary areas such as renewable energy generation.

A number of the SOEs included in this chapter have a PSO (or USO) for the provision of non-commercial but socially necessary services. The CIÉ companies receive an annual subvention payment from the government in compensation for

these services, however, during the period of analysis there was a shortfall in these payments which adversely affected financial performance. This is particularly true for the period 2008 to 2014 as Bus Éireann, Dublin Bus and Irish Rail incurred losses on PSO contracts of €7.9 million, €82.1 million and €109.4 million respectively. In addition, it is important to note that An Post receives no subvention payment in support of services provided under its USO and as such any losses are subsidised by the company's own resources.

Irish SOEs are currently facing a number of challenges within their respective sectors. In the case of the energy sector, Ireland is aiming to transform into a society based on sustainable energy and continued investment is therefore crucial to ensure Ireland's renewable energy capacity, security of supply and competitiveness. Energy policy is currently geared towards achieving this objective, however, the government's post-crisis policy of raising cash for the Exchequer by directing SOE's in the energy sector to pay dividends could hinder the future investment capacity of these companies. A lack of sufficient cash reserves necessitates increased borrowing to finance these dividend payments and this raises the risk of increasing the indebtedness of these SOEs in the short term.

Demand for public transport (both bus and rail) has increased since 2015 as a result of a number of factors including increasing urbanisation, growth in tourism and an increase in the regionalisation of employment (NTA 2016). In a similar manner to the energy sector, the transport sector requires a significant level of investment in infrastructure. Historical underinvestment in the sector has contributed towards the current operational and financial difficulties experienced by transport SOE's. This is particularly true in the case of Irish Rail as reductions in Exchequer funding (for both capital requirements and PSO services) have significantly weakened the financial position of the company to the point that any future losses could lead to insolvency (NTA 2016). Operational restrictions imposed as a result of PSO contracts is worsening the financial situation of both Bus Éireann and Irish Rail. Outside of an increase in Exchequer funding the only option available to both companies in the short term is to reduce both frequency and route options in their respective networks.

An Post will face significant challenges within the next five years as postal volumes are expected to decline by between 5 and 6 per cent annually.³³ The decline in mail volumes is primarily due to increased competition from e-communication methods which is a factor outside of the company's control. Given its USO requirements, An Post is restricted in terms of how it can respond to this challenge. Since 2015, An Post has been granted two price increases for its standard domestic letter rate, however, the regulator (ComReg) has warned that any further price increases could undermine An Post's financial recovery as its largest business customers are likely to seek cheaper alternatives.

Overall, it is clear the performance of Irish SOEs is impacted by a host of internal and external factors. Although the analysis in this chapter sheds important light on the performance of Irish SOEs, there is scope for gaining a deeper understanding of the factors that influence performance. The following two chapters use the conceptual model of commercialisation described in chapter 1 for the purpose of conducting in-depth case based analyses of the financial and economic performance of two companies, Dublin Airport Authority (the DAA) and An Post, which have undergone significant change in response to challenges faced over the last fifteen years.

³³ McCártaigh, S. 'An Post under threat as finances worsen', Irish Examiner, 19 September 2016, Available at: <http://www.irishexaminer.com/ireland/an-post-under-threat-as-finances-worsen-421658.html>.

Chapter 5: The commercialisation of the DAA

5.0 Introduction

Despite the increasing trend towards greater private sector participation in the ownership and management of European airports the fact remains that the State retains full or majority shareholdings in the vast majority of European airports (see table 5.1). State-owned airports have not, however, been immune to significant change and challenges. Over the last three decades, European airports have faced increased exposure to competitive pressures as a result of the liberalisation of the aviation sector. In many cases governments have shown reluctance to finance investment in airport infrastructure for reasons such as fiscal constraints. The business operations of European airports have, therefore, transformed considerably in recent years, with many airports moving from being publicly funded infrastructure providers to becoming diversified commercial self-financed businesses.

Table 5.4.1 Ownership of Europe's Airports in 2016

	No. of Airports	Fully Public	Mixed ownership (majority public)	Fully Private
All airports	500	295	126 (90)	79
EU-28 airports	355	189	106 (85)	60
Non-EU airports	145	106	20 (5)	19

Source: ACI Europe (2016). Note: ACI Europe also published an airport ownership report in 2010 (based on a sample of 404 airports). In 2010, only 9% of airports were fully private, 13% were in mixed ownership and 78% were fully public (ACI Europe, 2010). Although the sample of airports is larger in 2016, fully private airports now account for 15.8% of the total, 25.2% have mixed ownership and 59% are fully public.

This chapter presents an in-depth analysis of the economic performance of the Dublin Airport Authority (the DAA) for the period 1994 to 2014. Until recently, the DAA had a statutory mandate to manage, operate and develop the three main Irish airports in Dublin, Cork and Shannon. The company's principal activities include: airport management, operations and development, domestic and international airport retail management, and airport investment. Ireland's airports are recognised as having major significance for regional and national economic development, as they play a key role in Ireland's traditional success in attracting Foreign Direct Investment (FDI) and achieving high levels of exports. Aviation provides one of the few global transportation networks and airports are therefore vital for Ireland's economy in terms of international business and tourism.

The DAA has gone through an extended period of commercialisation and this chapter analyses these changes by using a model of commercialisation adapted from the model of organisational status change originally developed by Dunsire *et al.* (1988, 1991). The commercialisation model examines change in three dimensions: 1) capital market status; 2) competition and regulation; and 3) the internal environment. The association between these changes and changes in the company's performance is then examined using productivity indicators.

This chapter begins with a review of the empirical literature in addition to a brief overview of the history of the company before concentrating on the commercialisation and performance of the DAA from 1994 onwards.

5.1 Review of Empirical Literature

Empirical studies on the performance of airports in recent years have frequently focused on the impact of airport ownership on financial performance and/or technical efficiency. Such studies have been conducted at the country level, for example, Fasone and Maggiore (2013) and Fasone *et al.* (2014) examine the impact of private ownership on the financial performance of Italian airports and find that airport companies with majority private ownership outperform others. Other studies have focused on the productive efficiency of airports using large within country or cross-country panel data sets and employ sophisticated measurement tools such as Data Envelopment Analysis (DEA), Stochastic Frontier Analysis (SFA) or Total Factor Productivity (TFP) analysis. These studies generally control for whether airports are in majority public or private ownership in order to determine whether private sector ownership is superior. For example, Lin and Hong (2006), Oum *et al.* (2008) and Adler and Liebert (2014) utilise either DEA or SFA techniques to examine the efficiency of a large sample of international airports and produce mixed findings in relation to the impact of airport ownership.

DEA and SFA studies have also been extensively employed to examine the efficiency of airports at the country or cross-country level by controlling for a range of other non-ownership variables. For example Scotti *et al.* (2012) examine the impact of competition on the technical efficiency of Italian airports using SFA, whereas Oum *et al.* (2004) use TFP analysis to measure the efficiency implications

of alternative forms of airport price regulation using a cross-country sample of major airports.

The issue of airport commercialisation in general has been explored in a number of studies. For example, Freathy (2004) examines the commercial strategies employed by European airports to boost non-aeronautical revenues in response to the various external pressures that they face. Other studies include Yang *et al.* (2008), who examine the impact of commercialisation and privatisation on the evolution of the Chinese airport industry, and Lyon and Francis (2006) who explore how airport managers in New Zealand have responded to commercial challenges such as changing airport-airline relationships and the growth of low cost carriers. Whereas these studies shed light on a number of important aspects of airport commercialisation, the relationship between commercialisation and airport performance has received no attention in the literature to date. This is largely due to difficulties regarding how commercialisation as a process can be defined and measured for any particular company.

This research contributes to the burgeoning empirical literature on airport performance by mapping the commercialisation process of Ireland's state-owned airport company over a twenty-year period and examining its impact on economic performance. The next section provides a brief background on the history of the DAA.

5.2 Background of the DAA

The First World War played a key role in highlighting the necessity for airports in Ireland. The aerodromes constructed during the war were considered inadequate for long-term air service due to their remote distance from the Capital (McAteer 1935). Following the formation of the Irish Free State in 1922, plans for the establishment of airports were high on the government's agenda. *Aer Rianta* (referred to as the DAA from this point onwards) was established as a limited company in 1937, one year after the establishment of *Aer Lingus* (the national airline). Both companies were charged with the task of developing the Irish aviation sector. The DAA originally acted as a holding company for the States shares in *Aer Lingus*, and later *Aerlinte Éireann* (the transatlantic airline found in 1947 that was later renamed as part of the *Aer Lingus* Group). The DAA's original remit was to "operate lines of

aerial conveyance directly or by means of *Aer Lingus*”.³⁴ Dublin Airport was constructed on an approved site in 1940, and in 1941 the DAA was given responsibility for its management on an agency basis on behalf of the Minister for Industry and Commerce.

The DAA relinquished its function as a holding company under the Air Companies Act 1966, as the total shares of *Aer Lingus* were transferred to the Minister for Finance. Although the DAA continued to manage Dublin Airport, arrangements were made for the division of functions undertaken by the DAA and *Aer Lingus*, and a new Board of Directors was appointed. Construction of Shannon Airport and Cork Airport was completed in 1947 and 1961 respectively. In 1969 the DAA assumed the additional responsibility of managing both Shannon and Cork Airports on an agency basis for the Minister for Transport and Power.

Compared to other Irish SOE's the DAA's case was unusual in that it did not own the assets in its charge and instead ownership rights of the three airports were vested in the Minister for Tourism, Transport and Communication. The DAA acted as an agent in managing, developing and operating the airports. Plans to establish the DAA on a basis similar to other SOE's were considered in 1979 with the establishment of the first Oireachtas Joint Committee (OJC) on State-Sponsored Bodies. However, the committee decided that any change should be deferred on the basis of the capital burden, which the company would have to bear. An Inter-Departmental Committee, comprising of representatives from the Departments of Transport and Finance along with the DAA, reached a similar conclusion in 1980. Following a change of government in 1982, a new status review group³⁵ was established in 1985. The review group recommended the abolishment of the Airports Construction Committee which held responsibility for assessing all capital expenditure at the airports. In an effort to confer greater autonomy on the DAA, delegated authority arrangements for capital projects were increased from €28,570 to €317,000, and subsequently to €635,000.

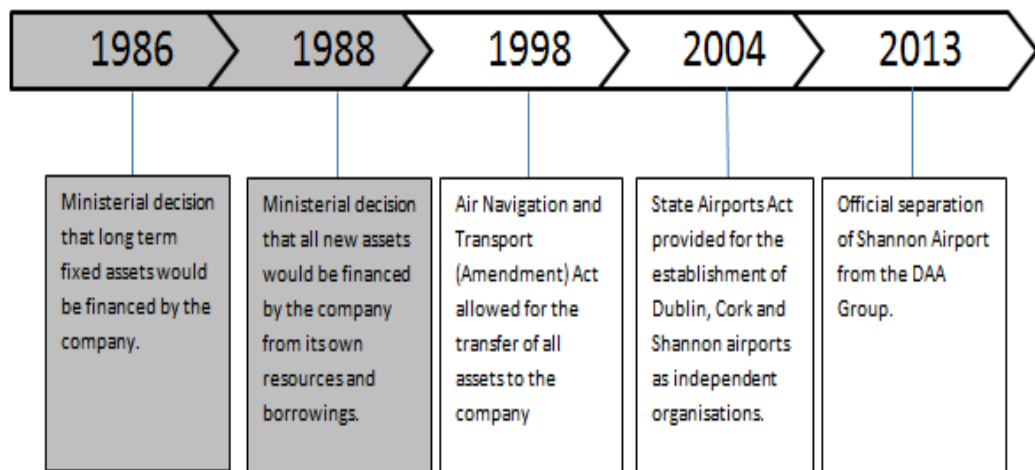
The funding system was also changed from one where grants were paid by the Exchequer to one where the DAA funded all capital expenditure from its own

³⁴ Dublin Airport Authority website (Available at: <http://www.daa.ie>).

³⁵ Included representatives from the DAA and the Departments of Communication and Finance.

resources or borrowings. This occurred in two stages (see figure 5.1): the first in 1986 when the Minister for Transport decided that all long term fixed assets would be financed by the company and included in the DAA’s balance sheet (other assets continued to be owned by the Minister) and the second in 1988 when it was decided that the DAA would finance all new assets from its own resources and borrowing (assets acquired prior to this would continue to be owned by the Minister). This discrete transfer of certain assets to the DAA represented the first significant step for the company in terms of achieving increased autonomy. Subsequent to this, the Minister for Transport confirmed in writing that it was his intention to transfer ownership of all assets to the DAA at a future date.

Figure 5.1: DAA Organisational Status Change



Note: 1986 and 1988 fall outside the period of analysis.

Further steps in this direction were taken following the enactment of the *Air Navigation and Transport (Amendment) Act, 1998* and the *State Airports Act, 2004*. The former transferred full ownership rights of all assets to the DAA while the latter granted more autonomy to each of the three airports and allowed for their eventual separation as fully independent entities. The implications of these two Acts in terms of the operations of the DAA are discussed in more detail in section 5.3.

Apart from the changes discussed above, the DAA underwent a gradual commercialisation process over the entire period of analysis. This process is

reflected in changes in the external environment relating to product market competition and/or sectoral regulation. To disentangle these changes this research utilises the model of commercialisation outlined in chapter 1. Drawing on elements of government failure and principal-agent literature the model provides a framework for examining performance in association with changes in commercialisation across three dimensions: capital market status, competition and regulation, and the internal environment.

5.3 Capital Market Status Change in the DAA

This section provides a detailed description of the two key capital market status changes experienced by the DAA during the 1994 to 2014 period. The association between these changes and increased commercialisation is then examined by focusing on significant changes in the corporate objectives of the firm as well as evidence of more commercial activities at an operational level.

The first capital market status change occurred in 1998 when the Air Navigation and Transport (Amendment) Act, dispensed with the out-dated agency relationship in which the DAA simply held assets for the Minister and instead granted ownership rights to the DAA. In addition the Act also transferred powers in relation to the establishment of new airports and the purchase of land. Ultimately the government anticipated that the Act would standardise the DAA's corporate and commercial mandate as it "would challenge the company to continue to be competitive and innovative in securing its place as the prime provider of air access gateways to and from Ireland", thus providing "a basis for sharing the benefits of its competitiveness with its customers, the airlines and the travelling public, as well as rewarding the shareholder".³⁶

The 2004 Act allowed for the restructuring of the DAA whereby the three airports could be established as independent entities. The government's view was that Dublin, Cork and Shannon would perform better as fully independent, commercial and competitive airports. There were a number of reasons behind the government's decision to restructure the DAA, these included: 1) the new structure would equip airports to deal with new challenges and opportunities facing the whole aviation

³⁶Dáil Éireann Debates (1999) Vol. 156, 5 June: *Air Navigation and Transport (Amendment) Bill, 1997: Second Stage*, cols. 373–4 (O'Rourke, M., Minister for Public Enterprise).

sector; 2) Shannon and Cork would better assist in the economic and tourism based development of their catchment area; 3) autonomous regional Boards with the necessary commercial expertise would give strong and visionary leadership; 4) Cork and Shannon would be in a better position to promote their range of services thereby leading to greater competition with Dublin airport; 5) Dublin (as the country's major airport) would be encouraged to continue to expand to meet Ireland's requirement for tourism and industrial growth; and 6) each airport would have the potential to grow its business and enhance shareholder value.³⁷ Separate Boards were established for both Cork and Shannon airports and each was given responsibility for day-to-day operations (under delegated authority). Both airports were required to submit business plans to the Minister before an official 'appointment day' for Cork Airport Authority (CAA) and Shannon Airport Authority (SAA) would be granted. Following a review of these business plans in 2008, and under the recommendation of all three Boards, the Minister announced the deferral of a decision on the separation of the airports until 2011 due to uncertainty in the context of the global economic recession. In the short term, new arrangements provided for:

...appropriate delegation of responsibility for the management and promotion of the airports, subject to the necessary accountability to the DAA board in respect of annual budgets, airport charges policy and capital expenditure. The arrangements also provide(d) for reciprocal membership of the boards of the Dublin Airport Authority, DAA, the Cork Airport Authority, CAA, and the Shannon Airport Authority, SAA, whereby the chairman of the CAA and SAA are members of the DAA board and the DAA has a senior executive nominee on the boards of the CAA and SAA.³⁸

Shannon airport was officially separated from the DAA and established as a debt free entity on the 31st of December 2012. A timeframe for the completion of the separation of Cork airport has yet to be determined.

To assess whether the capital market status changes described above were associated with increased commercialisation over the period 1994 to 2014 annual reports were examined for evidence of a more commercial focus in terms of changes in corporate

³⁷Dáil Éireann Debates (2004) Vol. 588, June: State Airports Bill 2004: Second, cols. 36-7 (Brennan, S., Minister for Transport).

³⁸Dáil Éireann Debates (2010) Vol. 717 (2), 5 October: *Adjournment Debate – State Airports*, cols. 378-9 (Connick, S., Minister of State at Department of Agriculture, Fisheries and Food).

objectives and policies related to diversification, international expansion and cost containment.

Changes in the corporate objectives of the DAA provide a clear indication of the increasing commercial focus of the company over time. The group's corporate objectives prior to the first change did not have a strong commercial focus and explicitly stated that the company's principal role was to serve the government's wider economic and social objectives:

Our core mission is to support government policies for advancing national economic prosperity; we do this by operating safe, efficient, customer-focused and environmentally responsible airport services at Dublin, Shannon and Cork airports.

(DAA 1995, p.13)

The DAA's increasing commercial focus became more evident following the transfer of assets in 1998 as the company aimed to:

...be a premier Irish international airport owner and operator, meeting the needs and expectations of customers, using resources effectively, fully realising the capabilities and potential of staff and optimising long-term shareholder value.

(DAA 2000, p.ii)

The State Airports Act 2004, allowed for the planned separation of Dublin, Shannon and Cork. Following this restructuring, the DAA gave clear indication of their commitment to commercialisation by stating that "all operational activity and every investment decision needs to be driven by rigorous commercial principles" as this "renewed focus on competitive sustainability and appropriate commercial returns will underpin the strategic business plans" of all three airports (DAA 2005, p7).

At an operational level, the increased commercialisation of the DAA is also evident from 1994 onwards with the firm engaging in significant international expansion and focusing on cost containment through the disposal of loss-making businesses and the implementation of a number of cost recovery plans. The expansion of Aer Rianta International's (ARI) operations provide the strongest evidence of the DAA's increased commercial focus over the 1994 to 2014 period. Although ARI was established as a subsidiary of the DAA in 1988 in order to manage the DAA's overseas consultancy and management businesses, it expanded its international operations significantly from the mid-1990s onwards. ARI's core area of business

includes the management and operation of airport retail businesses overseas and it increased its portfolio of operations considerably from just over US\$250 million in total managed turnover in 1995 to over US\$1 billion by 2014³⁹. Outside of airport retail operations ARI also acquired ownership stakes as part of joint partnerships in the UK's Birmingham International Airport (20 per cent acquired in 1997 and a further 4.125 per cent in 2000) and Germany's Düsseldorf (20 per cent in 1998) and Hamburg (7.2 per cent in 2000) airports with the DAA taking over the management of the latter's operations as part of this deal.

An increasing emphasis on cost containment is also evident in the DAA's commercial agenda over the period of analysis and this is best exemplified by the group's disposal of assets. Prior to 2004 there was limited evidence of asset disposal with the most significant being in 1997/98 with the sale of the mail order service at Shannon airport and its shareholding in Aer Rianta Bewleys Ltd (catering company). From 2004 onwards the DAA took a more active role in evaluating the performance of its assets with the CEO explicitly stating that if business activities did not measure up to "rigorous commercial principles and returns on capital" the DAA would need to reassess its "involvement in these activities and either re-engineer them or exit from them" (2004, p.7). The first business activity to be assessed was the Great Southern Hotel Group (GSHG) which the DAA has operated since 1990. The GSHG's profits had been in decline since 2001 and following a loss of €6 million in 2005 the DAA decided to dispose of its hotel assets in 2006. Soon after in 2007, the DAA also disposed of its assets in Hamburg and Birmingham airports. A significant portion of the proceeds from the sale of these loss-making activities was used to fund long-term capital investment. Another example of cost containment that the DAA has employed is outsourcing, with the most noteworthy being ground handling (1988, 1995⁴⁰), catering (1998) and I.T. (2011). In addition, the DAA has also implemented two cost recovery programmes, the first in 2002 when a voluntary early retirement scheme was implemented (this coincided with a 2.2 per cent decrease in operating costs), and the second from 2009 to 2013 when voluntary

³⁹ Source: DAA Annual Reports

⁴⁰In 1995, the DAA appointed a second ground handling agent to encourage competition as Aer Lingus had been the sole provider of ground handling services since 1988.

redundancy was offered (operating costs during this period decreased by 19.2 per cent).⁴¹

The DAA therefore went through a continuous period of commercialisation as evidenced by the evolution in the corporate objectives of the company and the increasingly commercial focus of its operations in terms of its international expansion and focus on cost containment. It is important to recognise that the process of commercialisation is itself influenced by changes in the external and internal environments of the company and the next two sections provide an overview of the major developments in both environments.

5.4 External Environment: Competition and Regulation

In the airport sector, there is often a trade-off between imperfect competition and economic regulation (Starkie 2002). Airports were traditionally considered to be natural monopolies; however, this opinion began to change in the 1980s with the deregulation of the airline industry. Airlines sought ways to reduce their costs and placed pressure on airports to decrease charges which ultimately led to the commercialisation and privatisation of airports throughout Europe. In the case of Ireland, the introduction of competition into the airport sector has been slow due to its size, geographical location and a shortage of appropriate sites. Thus, Dublin airport continues to hold a dominant position within the market. It is expected that airports with the heaviest volume of traffic will be susceptible to fixing high airport charges (Gillen 2008), thus necessitating the requirement for regulation. Airport charges at Dublin airport are currently regulated by the Commission for Aviation Regulation.

This section will first examine change in the degree of competition faced by the DAA between 1994 and 2014 before focusing on changes in the regulatory mechanisms (i.e. the application of incentive based mechanisms) applied to the DAA during the same period.

5.4.1 Competition

The competitive environment in which airports operate is closely linked with that of the airline industry. Traditionally airports were considered as non-competitive

⁴¹One component of this decrease was payroll savings resulting from the separation of Shannon airport from the group in December 2012 (employee numbers decreased by 14.2 per cent).

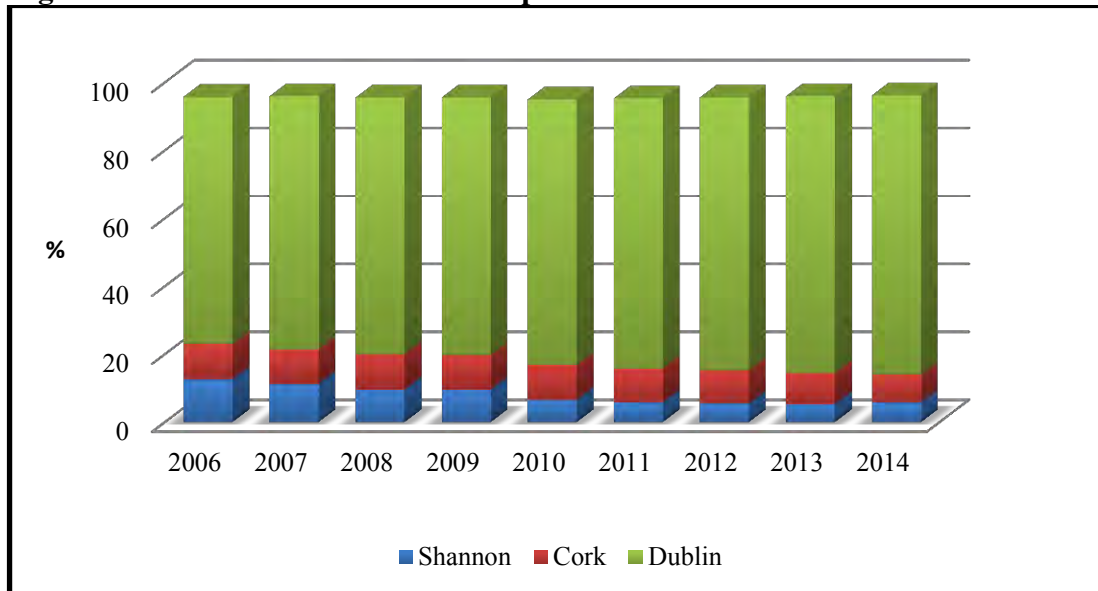
entities that essentially operated as public service organisations. According to Starkie (2008), the bilateral system on which aviation was organised in the 1940s stifled route innovation and banned price competition. This system, which promoted the service of routes by only one airline per country, resulted in several obstacles to European airport competition, the consequences of which included: a lack of innovation in route development; an inability on the part of low-cost airports to offer lower fares; concentration of airlines at hub airports as a result of grandfather rights to slots; and weak airport management structures with a lack of interest in efficiency and competition (Barrett 2009).

Prior to the introduction of the Single European Act (SEA) in 1986, airline deregulation had progressed slowly as liberalisation was only possible between pairs of countries. The SEA granted the legislative power to deregulate on a community-wide basis and in this new competitive environment the focus was not just on costs within airlines but also service providers to airlines (the most significant being airports). To reduce costs, airlines began to restructure their in-house service model by eliminating non-essential services (e.g. frequent flyer clubs and seat reservations). In addition to this they sought cheaper airport fees through the application of discount schemes for new traffic. Liberalisation has given airlines the ability to establish and terminate routes between airports almost at will, and as such airports have had to become more commercial in their operations in order to attract airlines. It is this commercialisation that has led to airports becoming multi-product enterprises that are often complex to analyse in terms of competition. Although the main focus is on airlines and passengers, airports have “a much wider commercial role including shipping air freight (including mail), providing for air taxi services and general aviation, acting as a base for flight training, aircraft maintenance, flight testing and corporate jet activity, and providing for a large number of other specified aviation services” (Starkie 2008, p.154).

The evolution of the international aviation industry in terms of the deregulation of airlines and the expansion of low cost carriers has resulted in an increased competitive environment between major and secondary airports. However, the degree of competition witnessed by countries such as France, Germany and the UK is far greater than that experienced by Ireland. In part this is due to the fact that

Ireland's land mass and population are much smaller and hence there is considerable overlap between catchment areas. This tends to give the major airports (Dublin, Cork and Shannon) an advantage over the four main secondary⁴² airports currently operating in the Republic of Ireland (Donegal, Knock, Kerry and Waterford).

Figure 5.2: Market Share of Irish Airports 2006 to 2014



Each secondary airport is privately owned and differs considerably in terms of passenger numbers and infrastructural capacity. Despite the presence of these secondary airports, the three DAA airports have retained on average a 95 per cent market share of passenger numbers in recent years, with Dublin accounting for the vast majority of this total (see figure 5.2). It is evident that the degree of competition that the DAA (and in particular Dublin airport) encounters is relatively minor and is unlikely to have been a major determinant of performance over the period of analysis.

5.4.2 Regulation

The rapid change in the aviation industry has resulted in extensive reform of airports in the last several decades. Up until the early 1990s in Europe, the role of the State in airports was one of owner, manager, regulator and policy-maker. In recent years, some airports have been fully or partially privatised, while others have been restructured as commercial enterprises. Ownership and objectives have evolved in tandem with these structural changes as airports strive to be more commercially

⁴²Secondary airports in this research are classified as any airport with annual passenger numbers of below one million.

orientated. In the past, airports have been viewed as examples of natural monopoly as they exhibit associated characteristics in the form of economies of scale and scope, sunk costs and network benefits (Doganis 1992; Niemeier 2004). The presence of these characteristics allows airports considerable market power, and in order to avoid any potential abuse of this power through price increases, it is often necessary that airports be subject to regulation.

Prior to 2001, airport charges⁴³ were regulated by the State and under this regime it acted as shareholder, regulator and policy-maker. However, such extensive roles potentially placed conflicting demands upon the State. Traditionally airport charges were calculated by the DAA on the basis of several characteristics including traffic growth, operating costs etc., and these suggested charges were then presented to the Minister for approval. This method was heavily criticised by a number of airlines (in particular Ryanair) for its lack of transparency (McLay and Reynolds 2006), and pressure was placed on the government to restructure regulation in line with European standards.

A politically independent sectorial regulator, the Commission for Aviation Regulation (CAR), was established on the 27th February 2002 under the *Aviation Regulation Act 2001*. A number of functions previously exercised by the Minister were transferred to the Commission, the most significant of which was the control of airport charges. The Commission originally regulated charges for all three of the State airports; however, this was altered under the *State Airports Act 2004* to include only Dublin. In attempting to separate the airports under the 2004 Act, it was decided that charges at Cork and Shannon would be set by the relevant airport authorities. In the case of Dublin airport price-cap regulation is applied to a single-till.⁴⁴ The price cap, which is expressed as an annual maximum charge per passenger is reviewed every five years. Table 5.2 shows the maximum charge per passenger permitted by the CAR each year between 2001 and 2014.

⁴³Charges levied in respect of: landing, parking or take-off of aircraft; the arrival or departure from an airport by air of passenger; the transportation by air of cargo, to and from an airport.

⁴⁴All airport activities are taken into consideration when determining the level of airport charges. This is in contrast to the dual-till approach where only aeronautical activities are considered.

Table 5.4.2: Maximum Charge per Passenger 2001-2014

2001	2002	2003	2004	2005	2006	2007
€5.60	€5.38	€5.27	€5.29	€6.00	€6.20	€6.60
2008	2009	2010	2011	2012	2013	2014
€7.03	€7.48	€9.42	€10.52	€10.30	€10.09	€9.88

Source: Commission for Aviation Regulation. Note: (1) 2010 maximum charge per passenger inclusive of additional €0.39 allowed for opening of Terminal 2 (T2); (2) 2011 to 2014 maximum charge per passenger inclusive of additional €2.33 allowed for operation of T2.

In determining the maximum passenger charge allowed for a particular year the CAR factors several different elements into its calculations. The regulatory building blocks for the price cap include the regulatory asset base, passenger forecasts, an estimate of efficient operating expenditures, a return on an efficient capital stock and a depreciation charge on that capital, less an estimate of future commercial revenues. As with all other price cap regimes it is possible for the DAA to benefit if it can reduce its costs below the level of the cap as it can retain the value of these savings until the next regulatory determination when the price cap is reset.

The CAR also introduced a rolling scheme in 2010 for OPEX where a number of categories unrelated to passenger numbers were included in the scheme (security, retail and marketing were excluded for being sensitive to passenger numbers). This rolling scheme was implemented in an effort to incentivise the DAA to continuously strive to realise potential savings regardless of the regulatory cycle in which these savings are achieved. This system also serves to eliminate the possibility of the DAA deferring OPEX savings from the end of one period to the beginning of the next.

In its 2010 to 2014 determination, the CAR introduced a service quality term to the price-cap formula, thus officially linking the DAA's quality of service and the maximum airport charge allowed. This service quality term has the power to reduce the price-cap by up to 4.5 per cent in the year. There are several elements to the service term where data is collected on a quarterly basis, two of these are reported by the DAA (security queue time and baggage systems) and the remainder⁴⁵ by the

⁴⁵These included: cleanliness; comfort of waiting; courtesy and help of both security and airport staff; ease of finding way; flight info screen; feeling safe and secure; internet access.

Airports Council International (ACI). For Q4 of 2014, the CAR reported that Dublin airport had met all targets set and as such there would be no adjustment to the price-cap for 2014. Prior to the implementation of the service term in the price-cap in 2010, the DAA's quality of service as reported by the ACI was below the acceptable target decided upon in 2010. Therefore, it is evident that incentive regulation in this context has had, and continues to have, a positive impact on quality of service at Dublin airport.

Overall, while it is clear that the degree of competition facing the DAA's airports has not changed over the 1994 to 2014 period, the DAA's incentive to operate more efficiently has increased significantly as a result of the price cap mechanism applied to Dublin Airport since the establishment of the CAR in 2002. Within the context of the model of commercialisation it can be expected that the changes in the DAA's external environment from 2002 onwards incentivised improved efficiency and performance *ceteris paribus*.

5.5 Internal Environment: Organisational Change

The Dunsire *et al.* (1988, 19991) model hypothesised that the degree to which a company could achieve 'goodness of fit' between its external environment and its internal environment impacts significantly on performance. It is expected that increased commercialisation will result in changes in the internal organisational structure with the adoption of a less hierarchical and more decentralised structure. Essentially, the company would be expected to move from a 'U-form' structure towards an 'M-form' structure (Williamson, 1967, 1970) where greater decision making power and responsibility is devolved to separate autonomous business divisions or subsidiaries. Building on Dunsire *et al.*'s work, Parker (1995a,b) also focuses on changes in the internal environment of the firm as reflected by changes in: company objectives; the nature and location of the business; organisational structure; the Board of Directors; and top management. The DAA's objectives, in addition to the nature and location of its business and its organisational structure are discussed in section 4.3. Therefore, this section will examine changes in the internal environment in the context of changes in top management and the Board of Directors.

Top Management

During the period of analysis, there were five individuals appointed to the position of CEO. Prior to the 2004 restructuring it was commonly internal candidates who were selected. Derek Keogh (1988 to 1997), John Burke (1998 to 2003) and Margaret Sweeney (2004) all held various senior management positions within the company for a number of years prior to their appointment. However, this tradition of appointing internal candidates changed following the 2004 restructuring with the appointment of Declan Collier in 2005 (previously with ExxonMobil) and Kevin Toland in 2013 (previously with Glanbia USA).

With regards to CEO remuneration, it can be seen in table 5.3 that the CEO's salary increased significantly between 2000 and 2013. The subsequent 37 per cent decrease between 2010 and 2014 was a result of voluntary pay reductions and the government's decision that CEOs of State companies should not receive performance related pay while the country was recovering from the financial crisis.

Table 5.4.3: CEO Remuneration 2000 to 2014

Year	Basic	Other	Total	Year	Basic	Other	Total	Year	Basic	Other	Total
2000	204	59	263	2005	331		331*	2010	308	309	617
2001	217	69	286	2006	315	373	688	2011	304	142	446
2002	234	81	315	2007	333	365	698	2012	78	87	165**
2003	242	180	422	2008	348	290	638	2013	250	138	388
2004	360		360*	2009	320	248	568	2014	250	138	389

Note: Figures not available prior to 2000; *Other benefits not paid as Acting CEO in position (Higher basic salary given to compensate for this); ** Salary does not apply for full year as CEO left position in April and a new CEO was not appointed for remainder of the year.

The CEO is supported in carrying out his day-to-day duties by the management team. Many of the key roles (finance, HR, marketing, communications, retail etc.) have remained consistent over time. However, there were some minor changes in the management structure following transfer of ownership in 1998, when several additional roles were created with a particular focus on investment, security and ancillary activities. The structure of the management team was simplified in 2004⁴⁶ (State Airports Act) and again 2012 following the official separation of Shannon Airport from the group.

⁴⁶ For example, responsibility for international operations was condensed from three managers to one.

Board of Directors

Prior to 1998, the DAA's Board of Directors had an average of nine members with experience mostly limited to the areas of aviation and accounting. Following transfer of ownership in 1998 the composition of the Board in terms of numbers and experience remained much the same. However, significant changes to the Board occurred following the restructuring of the group in 2004 when all new members were appointed (see table 5.4). The most noteworthy addition was Sir Michael Hodgkinson who had previously served as the Group Airport Director and CEO of the British Airport Authority (BAA). Hodgkinson was responsible for expansion planning at Britain's most significant airports and as such was viewed as an excellent addition to the Board given the DAAs restructuring plans. Subsequent additions to the Board included experts in the areas of internal auditing, financial regulation, law, communications, retail management and economics. This diversification of expertise is a clear indicator of development in the DAA's commercial agenda as the Board's main focus is the long-term strategy of the company, which necessitates access to an extensive knowledge and skill set outside of aviation.

Table 5.4.4: Changes in Composition of the Board of Directors 1994 to 2014

Year	Directors	Departures	Arrivals	Year	Directors	Departures	Arrivals
1994	9	-	-	2005	13	4	5
1995	9	2	2	2006	13	-	-
1996	8	1	-	2007	13	1	1
1997	8	2	2	2008	13	2	2
1998	8	-	-	2009	13	6	6
1999	9	-	1	2010	13	-	-
2000	8	2	1	2011	10	7	4
2001	9	-	1	2012	11	4	5
2002	7	2	-	2013	13	3	5
2003	9	1	3	2014	13	-	-
2004	12	9	12				

Source: Company Annual Reports

Overall, the evidence presented highlights significant change in the internal organisational setting of the DAA during the period of analysis. Changes in the external environment (i.e. capital market status, competition and regulation) necessitated the need for a movement away from the traditional hierarchical centralised command structure to a decentralised structure with increased autonomy.

An increased level of commercialisation often necessitates the adoption of governance and management practices common in commercial business environments. The composition of both the DAA's Board and its management team has changed significantly over time in line with changes in capital market status. It is expected that the DAAs efforts over time to align its internal environment with the increasingly commercial external environment would be associated with improved productivity.

5.6 Commercialisation and Performance

In the aviation industry, the key players (i.e. airports, airlines, regulators and passengers) unite to determine the endogenous dynamics of the sector. However, exogenous factors in the form of natural disasters, political instability, war, terrorist attacks and epidemics, often have adverse effects on the aviation industry. Such events can negatively alter the financial condition and operating results of firms; and perhaps more worryingly, can have prolonged effects on air transportation demand. With this in mind, before analysing the DAA's performance, this section will first examine the exogenous events that the DAA have been exposed to during the period of analysis.

Exogenous Factors in the Global Aviation Industry

The terrorist attacks in New York in September 2001 caused chaos for the US aviation industry and, to a lesser extent, the global aviation industry. According to Ito and Lee (2005), 34 per cent of US businesses cancelled international travel for its employees for a sustained period of time following the tragedy. While the initial panic subsided after several months there were long-term ramifications for the aviation sector. The attacks caused a massive blow to consumer confidence in relation to air travel and security measures in airports throughout the world underwent a major overhaul. However, the stringent security measures implemented made travel more burdensome and time consuming than ever before, and the high costs associated with the security enhancements were reflected in the aviation sectors reduced profits.

The aviation industry has been hit by several pandemics in recent years, the most notable being *Foot and Mouth* in 2001, *SARS* in 2003 and *Bird Flu* in 2005.

Passenger traffic for certain routes fell in each instance due to consumer fears and government imposed restrictions on travel. The Irish government received much criticism in 2003 for their lack of response to the threat of SARS. It was reported by several newspapers that hundreds of migrants from China, Hong Kong, Shanghai, Thailand and Vietnam were entering Ireland without any health checks. Therefore, during the *Bird Flu* outbreak in 2005 monitoring systems and increased security were put in place at Irish airports, resulting in increased costs for the DAA.

Weather phenomena can also reduce the efficiency of aviation operations by adversely affecting the traffic handling capabilities of airports. Heavy rain, ice and snow are just some of the meteorological conditions that can render an airport non-operational for certain periods of time. The closure of runways can result in significant delays and cancelations, which in turn will affect the operational revenue of the airport. Hurricane Katrina in 2005 and Hurricane Ike in 2008 caused major disruption to the aviation sector when they made landfall in the US. On both occasions, airlines operating in the three main Irish airports were forced to cancel flights to and from the US over a three-day period. In 2010, the DAA was forced to suspend flights on two occasions: the first in April because of the volcanic ash cloud from the eruption of Eyjafjallajokall in Iceland, and the second in December because of heavy snowfall. In both instances operations were suspended for several days resulting in thousands of stranded passengers.

Other factors that can affect airport profits include labour strikes. In 1998, thirty-nine Ryanair baggage handlers went on strike over wage and safety conditions, however despite the small number involved, there was enormous disruption to airport operations as hundreds of other staff (including on-site fire-fighters) refused to cross the picket line. Thousands of passengers were stranded as the DAA was forced to shut down operations for a full day. There were further disruptions in 2004 when airport staff decided to join bus and rail workers in a six-hour work stoppage against the proposed restructuring of the DAA and CIÉ (the national train and bus company).

Economic Performance of the DAA

Although this chapter focuses primarily on the economic performance of the DAA it is important to pay attention to the basic financial indicators published in annual reports that tend to dominate public discourse around the performance of the DAA. As can be seen in Appendix C, the company has exhibited a strong financial performance during the period of analysis. However, as previously discussed in chapter 3, the use of financial indicators alone can be misleading as these indicators do not provide a thorough analysis of input/output measures.

Therefore, in the context of the increased commercialisation evident from the changes in the DAA's capital market status and internal and external environments described above, this section examines the economic performance of the DAA from 1994 to 2014. Productivity is measured using both Labour Productivity (LP) and Total Factor Productivity (TFP). LP is a partial productivity measure that examines the ratio of real output to an index of labour, while TFP measures the change in total output in relation to changes in total inputs.⁴⁷ Figure 5.3 illustrates the LP and TFP results for the DAA from 1994 to 2014.

The general downward trend in productivity between 1996 and 2004 is largely a result of two factors. Firstly, there was a significant reduction in growth in output as a result of a decline in passenger numbers following the 9/11 terrorist attacks in the USA and the disruption to UK flight schedules from safety restrictions imposed during the Foot and Mouth outbreak in the UK in 2002. Secondly, considerable under-investment in Irish airports for several decades prior to 1990 resulted in the DAA undertaking a significant capital investment programme worth €455 million between 1998 and 2001.

The recovery in both LP and TFP between 2005 and 2007 was a result of increased output⁴⁸ in addition to the reduction in employee numbers following the sale of the GSHG. This improvement was short-lived, as productivity declined once again from 2008. This was primarily due to the implementation of a ten year investment programme worth €2 billion in 2005. Included in this capital investment programme was the construction of a second terminal, T2, at Dublin Airport along with several

⁴⁷ Further details on LP and TFP calculations can be found in chapter 3.

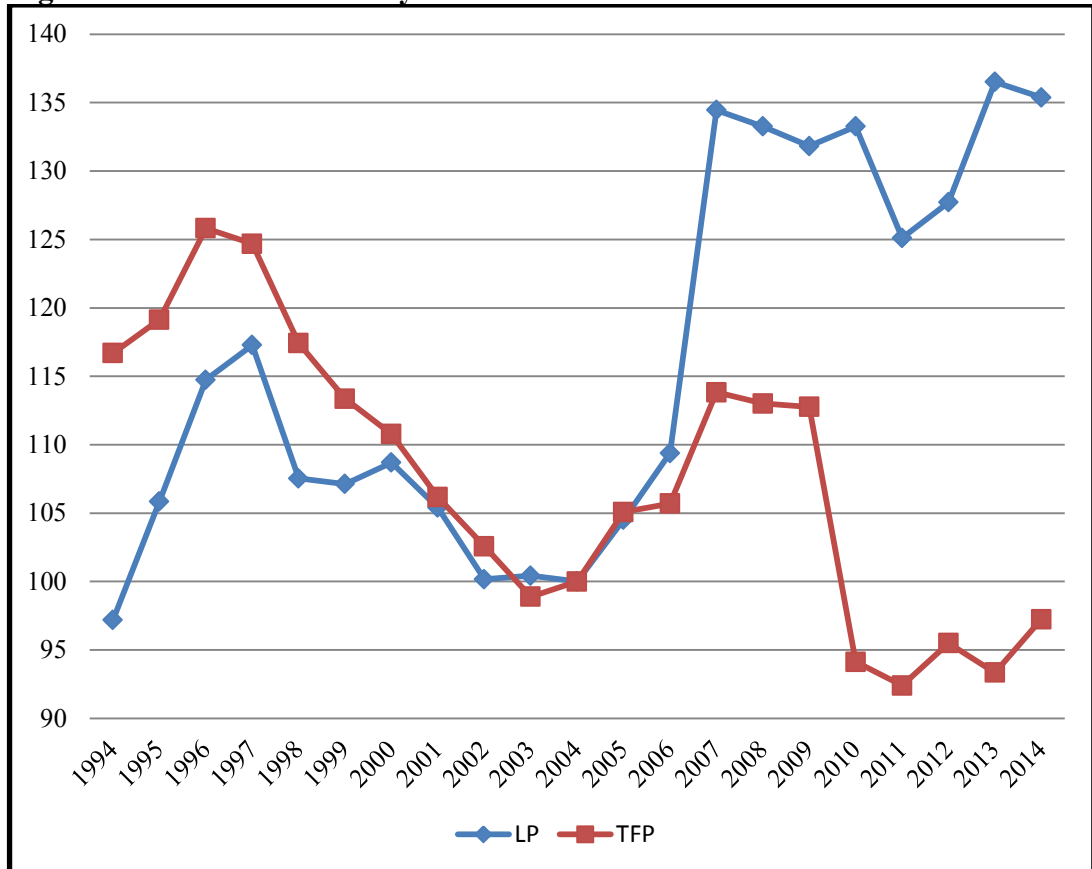
⁴⁸ Passenger numbers increased due to strong growth in the global economy

extension and improvement projects. The deterioration in productivity in the latter period was also heavily influenced by the negative impact of both the global financial crisis and Ireland's domestic economic crisis, with passenger numbers in the three DAA airports falling from 30 million in 2007 to 22.4 million in 2010.

Improvements in productivity towards the end of the analysis were a result of growth in output in addition to internal organisational changes implemented under the 2009 to 2013 cost recovery programme, a major component of which was a reduction in employee numbers. In addition, further reductions in employee numbers following the separation of Shannon airport from the group resulted in a marked increase in LP in 2013, however, LP declined once again in 2014 as the DAA reorganised its internal structure and increased its employee numbers to service growth in passenger traffic.

Much of the trend in TFP during the period of analysis can be explained by the DAA's pattern of capital expenditure which can be characterised as lumpy in nature. This is not uncommon in infrastructure industries, where significant investments in new infrastructure are generally concentrated in short periods of time at irregular intervals. In the airport sector significant capital expenditure is undertaken to replace assets and/or provide for future demand. The benefits of this type of investment are unlikely to offset the cost of the new capacity during the investment period and as a result TFP can be adversely affected. However, as with many capital investment programmes based primarily on infrastructure, it is difficult to quantify the benefits at such an early stage. The impact of infrastructure investment is two-fold; firstly there will be a short-term impact from the construction phase, and secondly, there will be a long-term impact from the productive capacity of the capital created. While the short-term impact has had a negative effect on TFP, it is likely that the DAA's substantial capital expenditure in recent years will have a positive influence on the company's TFP growth in the long-term.

Figure 5.3: DAA Productivity Results 1994 to 2014



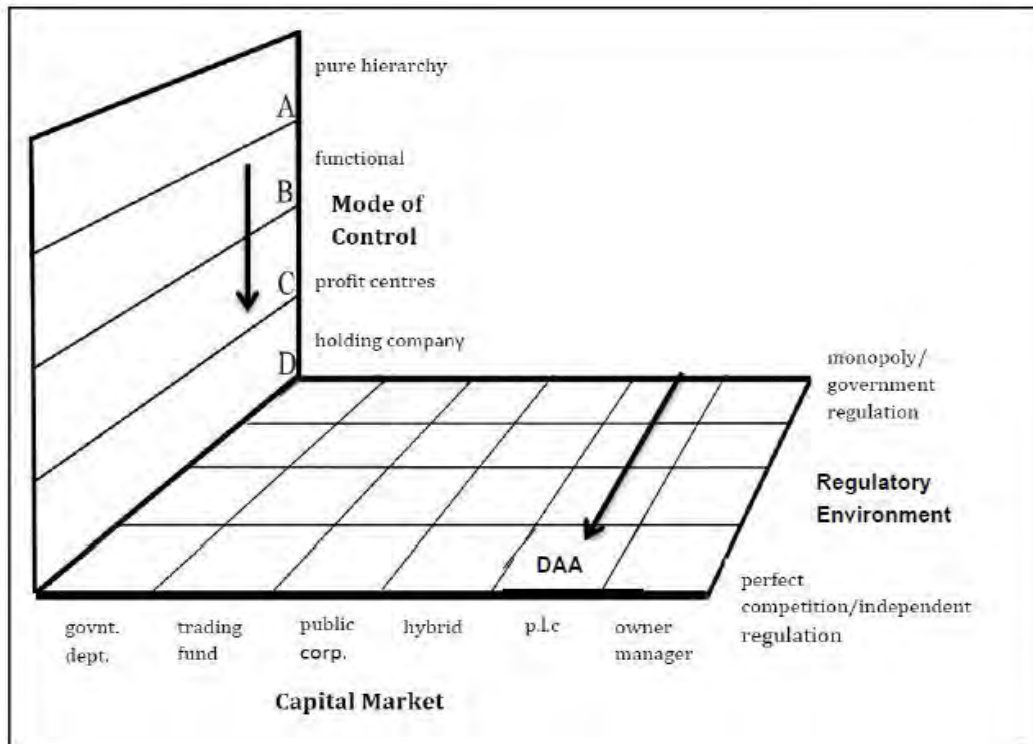
Note: All indicators are normalised to equal 100 in 2004

On balance, the productivity and financial performance results for the DAA provide a very mixed picture despite the significantly increased commercialisation orientation of the company documented in previous sections. While the DAA recorded a relatively steady increase in turnover from 1994 to 2014 and generated considerable, albeit erratic, operating profits, TFP declined as a result of a significant programme of investment. However, it is important to interpret these measures with a degree of caution and recognise that the long term benefits that can be expected from investing in future capacity will not immediately be evident.

5.7 Conclusion

The DAA has undergone a significant commercialisation programme during the period of analysis. This process has influenced a number of changes in the organisational structure of the firm. To examine the impact of these changes on performance, this chapter has utilised a model of organisational status change adapted from the work of Dunsire (1988, 1991).

Figure 5.4 Model of Commercialisation applied to the DAA



In the context of the external environment, competition did not have a significant role in the evolution of the DAA's commercialisation process. Despite the presence of several regional airports, the major airports (Dublin, Cork and Shannon) between them account for approximately 95 per cent of market share. Therefore, competition in this case is not strong enough to be considered as a major factor in the performance of the DAA. In contrast, regulation has influenced the performance of the DAA as changes within the price-cap calculation (i.e. the inclusion of elements such as future operating expenditure (OPEX), capital expenditure (CAPEX) and quality of service) has incentivised the DAA to perform efficiently in these areas (depicted in the movement from north to south in figure 5.4).

In relation to its internal environment, the DAA has evolved from being a company that merely operated airport assets on behalf of the Government to owning those assets and operating them on an increasingly commercial basis as reflected by changes to its organisational structure, corporate objectives, top management and business operations. The movement from B to C in figure 5.4 largely represents the increased autonomy granted to Cork and Shannon airports to allow for their planned separation from the group.

At face value, the productivity results reported in this chapter do not show any evidence of an improvement in performance (as measured by TFP) resulting from the continued commercialisation of the DAA over the 1994 to 2014 period. However, it is important to interpret TFP measures with a degree of caution and recognise that the long term benefits that can be expected from significant investment in physical capacity will not be immediately evident in any productivity analysis. A company that did not make the required timely investment in long-term capacity and instead opted to sweat existing assets for a number of years would have far more positive TFP results compared to a company that opted to invest, but in the long run would suffer due to lack of capacity or outdated infrastructure.

The DAA's performance must therefore be viewed in the context of its significant investment in the long-run capacity of Ireland's three main airports and the resulting benefit that accrues to Ireland's island economy that relies heavily on trade and tourism. Although its investment in Dublin's Terminal 2 was criticised when it opened in 2010 in the middle of a major recession when passenger numbers were decreasing dramatically, it now appears to be a justified investment with passenger numbers in Dublin increasing to a record high of 25 million in 2015.

The DAA recently announced its decision to proceed with the construction of a second runway by 2020 at the airport in response to the considerable growth experienced in Dublin and its projections for future traffic growth. As with the construction of Terminal 2, the investment in a new runway will likely reduce the DAA's productivity as measured by TFP in the short-term but will ensure that the airport has the required capacity to develop its business in the long-term. The decisions to make considerable investments in new capacity are indicative of the public missions adopted by SOEs in general and the DAA in particular. Public missions around objectives such as infrastructure investment, sustainability and international expansion are important components of the overall objective functions of SOEs. They necessarily constrain the commercialisation process in the SOE sector and, as the case of the DAA demonstrates, they must be taken into consideration when interpreting standard indicators of economic performance.

Chapter 6: The Commercialisation of An Post

6.0 Introduction

Although the postal sector exhibits some network characteristics, its structure is different from other network industries in that it does not possess a physical infrastructure. Instead, postal services depend heavily on the infrastructure of road, rail and air transport to convey services through a system of nodes (i.e. post boxes, post offices and sorting centres). While the first two components of postal service (i.e. collection and sorting) are not monopolistic in nature, the final component (i.e. delivery) is a natural monopoly. As a result, the postal sectors of many European countries have traditionally been dominated by State owned vertically integrated monopolies. In addition, a universal service remit is imposed on these incumbent operators whereby they must provide a number of services that are not economically justifiable. These services of general interest have traditionally been funded through revenue generated from the legal monopoly.

The European postal sector has gone through a significant number of reforms in recent years encompassing commercialisation, liberalisation and, in some cases, privatisation. Thus, previous reliance on government control and regulation has given way to a greater reliance on competition, which has encouraged a greater focus on efficiency and customer satisfaction. As a result the monopolies of incumbent postal operators have gradually been eroded by new entrants into the markets, as well as advancements in electronic substitutions such as fax, internet and email.

This chapter presents an in-depth analysis of the economic performance of An Post (the State owned Irish postal company) for the period 1984 to 2014. Since the mid-1980s An Post has gone through an extended period of commercialisation, which has coincided with a period of significant change in its external environment involving full market liberalisation and the move from government to independent regulation. In order to examine the impact of these changes on the performance of An Post, this chapter uses a model of commercialisation adopted from Dunsire *et al.*'s organisational status model. The next two sections provide a review of the empirical literature on postal productivity as well as a brief overview of the background of An Post.

6.1 Review of Empirical Literature

Much of the empirical literature on postal sector performance can generally be divided into case-based and comparative analyses, which focus on the key areas of ownership, regulation and competition. For example, Clark and Bickerton (2002) examine postal services in Canada and observe high growth rates in Labour Productivity from the mid-1980s. Nikali (2002) utilises production functions to examine postal productivity in Finland from 1980 to 2000. In addition to noting slow but steady growth between the 1980s and early 1990s the author also finds that increased investment in the 1990s resulted in decreases in capital productivity for the Finnish postal provider.

A number of studies have examined postal service productivity across a panel of international providers. Perelman and Pestieau (1994) use a stochastic parametric approach to calculate technical efficiency of national postal providers in sixteen countries for the period 1975 to 1989. The authors seek to analyse the links between productive performance and competition and regulation, however, they note that their analysis is restricted:

As postal services are all State owned, one cannot test in this particular instance whether ownership matters. Postal services also have a monopolistic position and are only subject to competition for some of their operations and through tendering out some of their post offices.

(Perelman and Pestieau 1994, p.197)

Ireland's overall efficiency score within the study was low, however, the authors note that a significant contributor of this is a lack of available data, which meant that Ireland could only be analysed for the period 1975 to 1978. Pimenta *et al.* (2000) use Stochastic Frontier Analysis (SFA) to measure the technical efficiency of postal services in 22 OECD countries for the period 1980 to 1997. When examining the impact of technical progress, in addition to the collection and delivery structures in each country, the authors reported a decrease in productivity in most cases beginning in 1997.

Other studies when analysing postal sector performance control for a number of individual factors (i.e. ownership, competition, regulation and internal organisational change) that can impact productivity. For example, Mizutani and Uranishi (2003) use Total Factor Productivity (TFP) to examine productivity growth in Japanese

parcel delivery for the period 1974 to 1998 and conclude that growth was higher in the case of private operators. Cohen *et al.* (2002) use basic comparative indicators to analyse the difficulties facing Italian and U.S. national postal operators in the opening of the market to competition in 1999. Their findings indicate the U.S. is more likely than Italy to have new entrants to the market as its postal structure allows for a more favourable distribution of route profits. Bouin *et al.* (2010) examine the impact of price cap regulation on the French postal market. Following the implementation of the first three-year cap from 2005 to 2008, the authors found that there were service quality improvements in relation to both priority mail and parcels. Maruyama and Nakajima (2002) comment on the impact of changes in managerial structures. When analysing the efficiency and productivity of postal services in twenty countries using a DEA-based Malmquist approach their results implied that the transformation of managerial structures improved the efficiency of the postal administrations.

Although these studies shed light on a number of important factors related to commercialisation in the postal sector, they are limited in both scope and time frame. This research contributes to the empirical literature by examining the commercialisation process of Ireland's State Owned postal company across three dimensions of change over a thirty year period and analysing its impact on economic performance. The next section provides a brief background on the history of An Post.

6.2 Background of An Post: History and current activities

Prior to 1984, the Irish postal service was operated by the Department of Post and Telegraphs. For much of the 20th century the Department performed efficiently and up “until the early 1970s break-even was broadly achieved” (National Prices Commission 1976, p. 9). However, this was largely due to telephone services surpluses offsetting losses in the post and telegraph service. These losses worsened considerably in the late 1970s as postal volumes were declining “even before the impact of high-technology message transmission had been fully felt” (An Post 1984, p.3). Between the period 1978 and 1982, an average loss of €14 million per annum was recorded (postal volumes declined by 7 per cent in the same period). In addition,

delivery targets achieved in relation to next day delivery of first class post had fallen to 84 per cent from a high of 90 per cent throughout the 1970s. The telecommunications division had also begun to perform poorly in the late 1970s due to underinvestment, and so it was decided, “only a high quality service, sustained over a prolonged period, would restore full public confidence in the service and enable it to resume and improve on the growth achieved in the past”⁴⁹. It was argued that operating on a commercial basis as a State company would benefit An Post, and so:

...following the report of a Review Body in 1979, successive Governments agreed that the challenges the Post Office would face in the rest of the century were such that it needed a totally different form of organisation to those which had served it since 1784.

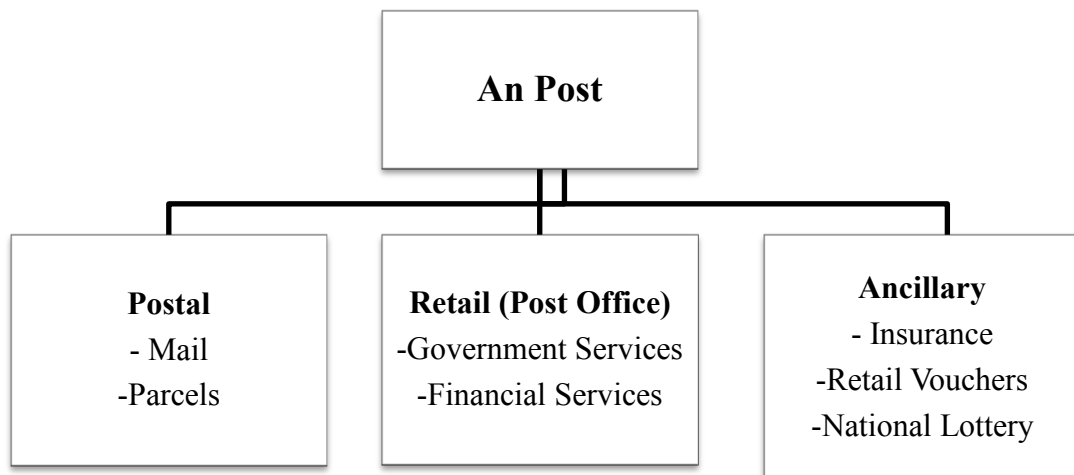
(An Post 1984, p.3)

An Post was established under the Postal and Telecommunications Services Act 1983 and is a limited liability company, incorporated under the Companies Act. The government is the sole shareholder, with shares held by the Minister for Finance and the Minister for Communications, Energy and Natural Resources.

Since the company was corporatised in 1984 it has implemented a number of plans designed to reduce costs and has taken a range of commercial initiatives aimed at creating new business and generating revenues (these are discussed in greater detail in section 5). An Post’s current operations encompass postal, communication, retail and financial services (see figure 6.1). In addition, the company provides agency services for a number of government departments and commercial bodies through its post office network. In 2015, the company processed and delivered an average of 1.7 million postal items daily. An Post’s postal service network currently consists of 52 company post offices, 1,088 contract post offices and approximately 5,700 post boxes.

⁴⁹Dáil Éireann Debates (1982), vol.334, 19 May: *Postal and Telecommunications Services Bill, 1982: Second Stage*, cols. 1557-8 (Wilson, J., Minister for Post and Telegraph).

Figure 6.1: An Post Business Divisions



An Post is Ireland's designated universal service provider (USP) under regulations transposed by EC Directives on postal liberalisation and regulated by the Commission for Communications Regulation (ComReg). As the USP, the company must ensure the delivery of mail to every address for a minimum of five days in the week. Prior to the introduction of full liberalisation in 2011, An Post funded the USP through revenue from its legal monopoly (since 2002 this applied to letters and parcels below 100g in weight only), the company now funds the USP from its commercially generated revenues.

During the period of analysis there were considerable changes in An Post's operating environment (i.e. competitive and regulatory) that coincided with increased commercialisation. To disentangle the impact of these changes on An Post's performance this chapter employs a model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991), which examines organisational change across three dimensions: capital market status, competition and regulation, and the internal environment.

6.3 Capital Market Status Change

This section examines capital market status change in An Post for the period 1984 to 2014. Although discrete changes in capital market status change such as privatisation have not occurred the company has undergone a number of identifiable changes that moved it along the continuum away from its status as government department towards a more arms-length relationship with government. These changes include the adoption of commercialisation measures that focus on improved efficiency and financial performance. In order to track movements along the continuum this section focuses on discernible changes in stated company objectives, the diversification of activities aimed at increasing revenues and measures adopted for the purpose of cost reduction.

Company Objectives

It is worth noting that, when corporatised An Post's principal objective was to "provide a postal service which meets the industrial, commercial, social and household needs of the state and to provide money transmission and counter services for the Company itself, the Government and other businesses" (An Post 1985, p.11). The first clearly stated change in An Post's objectives was made in 1987 when the company was forced to fund capital investment from its own resources following the government's failure to fund subvention for losses, in addition to a capital investment commitment of €3.8 million in 1986. Thus, An Post's revised objective was "to achieve profitable growth through the development of existing and new services for its customers" (1987, p.6).

Throughout the 1990s the company continued to focus on profitability by promoting existing services, innovation leading to new services, improvements in customer service and reductions in costs. Following the introduction of the first directive⁵⁰ on liberalisation in 1999, An Post's primary objective was that the "culture of the business be changed to one of acceptance of clear responsibilities and accountabilities, performance measurement and a strong focus on customer satisfaction, employee satisfaction and profitability" (2001, p.13).

⁵⁰Reserved areas reduced to delivery of letters and parcels below 350g in weight

Following a period of sustained losses in the early 2000s, An Post's key objectives became more specific to the company's financial position with the overall goal being to "minimise losses in 2003 and 2004, and conserve cash; reach breakeven in 2005; and, achieve acceptable profitability in 2006, 2007 and 2008" (2003, p.ii). Following the introduction of the final EC directive on liberalisation in 2006⁵¹, An Post stated that its objective was to "outperform the new competition we face, delivering a better quality of service, more efficiently, to more customers by continuously adapting, innovating and implementing change" (2007, p.2). This has remained as the company's key objective to date.

Diversification of Activities

In a similar manner to other commercial enterprises An Post sought to identify new sources of revenues by diversifying away from its core activity (which was constrained by USP). In its first decade of operations (1984 to 1994), An Post engaged in a number of diversification activities through its banking and retail division. An Post's first attempt at diversification was the joint venture Postphoto (image processing services) with the privately owned Spectra Ltd in 1984. The company also began to diversify its activities through the establishment of subsidiary companies such as the National Lottery (1985), PostGEM (1990) and Printpost (1994). An Post has been the operator of the National Lottery for thirty years having successfully competed for the licence on a number of occasions. However, in 2013 the government decided to sell the national lottery in an effort to raise funds for the exchequer. Premier Lotteries Ireland, of which An Post is a shareholder (along with the Ontario Teachers' Pension Plan), became the new operator of the national lottery in 2014. PostGEM offered electronic and internet services and, although initially profitable, the company soon began to make losses and was sold in 1999. Printpost continues to be a subsidiary of An Post and produces critical financial documents (e.g. statements, invoices and payslips) for businesses.

Successful initiatives between 1995 and 2002, included the establishment of subsidiaries including Postpoint (2000) and the Gift Voucher Shop (2002). An Post continues to be the sole shareholder of Postpoint, the electronic transaction and payment service channel. Its services include e-top-ups, e-international phonecards,

⁵¹All reserved areas abolished and postal market fully liberalised

debit/credit card clearing services, bill payments and e-parking. The Gift Voucher Shop (in which An Post currently has a 53.6 per cent shareholding) continues to be a significant part of the An Post's retail operations. The company provides gifting solutions to the public and corporate markets in Ireland, the UK and Malta. During this period the company also acquired international assets such as E.Commercall Ltd. in 2001 (the provider of top-up facilities for major mobile companies in the UK and Spain), PostTS UK (2002), An Post Transaction Services (2002) and Air Business Ltd in 2002 (a mails sector business based in the UK, which is the only global mail, distribution, fulfilment and integrated subscription management company).

Following a period of financial losses in the early 2000s, An Post stated that until the company returned to profitability there would be "no further investment in overseas activities that are not essential for the maintenance of our core business" (2003, p.12). The company did not attempt to diversify its activities again until the establishment of Postbank, in 2007 with French bank BNP Paribas. Postbank proved to be a failure for the company as the subsidiary continued to make losses in the financial services sector and ultimately ceased operations in 2010. In 2009 An Post acquired one of its major competitors, Jordan and Co International Ltd (a provider of mail services in UK). In 2010 the company established the prepaid mobile phone service, Postmobile, in addition to expanding its core activities by entering into a strategic alliance with DHL to offer an overnight courier service. Since 2011, An Post has provided a number of financial services in partnership with Aviva Insurance, KBC Bank and Allied Irish Bank. An Post currently has shares in eighteen subsidiary and joint venture companies that account for, on average, 14.5% of total turnover.

Cost Reduction

During the period of analysis An Post implemented four cost recovery programmes. Each of these programmes aimed to return the company to profitability through a number of measures including: labour shedding; pay reductions; restructuring of the network; disposal of assets; and technological advancements.

1. The first cost recovery programme (P1) was implemented in the period 1994 to 1997, after the company signed a recovery agreement with Trade Unions that

provided for “the most far-reaching changes ever in An Post’s mail operations, embracing all aspects of the collection, distribution, processing and delivery of mails” (An Post 1993, p.27). The operational changes under this Agreement included:

- The re-organisation of SDS operations to allow for a 2 per cent reduction in employee numbers.
 - A phased reduction in overtime hours to reduce payroll costs.
 - Significant changes to the network encompassing a new company staffed road-based national letters distribution network and the nationwide application of next day single delivery of letter mails.
 - The implementation of a new automated national mails processing facility.
2. The second cost recovery programme (P2) was implemented in the 2001 (with additional measures approved in 2003/04). The key elements of the plan included:
- A reduction in employee numbers of 1,140 through early retirement, voluntary severance and redeployment.
 - A freeze on pay increases agreed under the Programme for Prosperity and Fairness after the company availed of the inability to pay clause in January 2004.
 - A restructuring of the post office network following the decision by Government in 2001 not to provide a subvention for the loss making division. This involved the conversion of 490 sub post offices into agencies.
 - The disposal of surplus property and assets for a profit of, on average, €13 million a year between 2003 and 2008.
 - A change in out-dated work practices by introducing new arrangements for collection and delivery through new automated facilities.
3. The third cost recovery programme (P3) was implemented in the period 2006 to 2011 in response to the full opening of the European postal market to competition. The key elements of the plan included:
- A reduction in employee numbers of 1,777 through early retirement and voluntary severance.
 - The introduction of a company-wide pay freeze in 2009.
 - Following the restructuring of SDS the main parcels depot in Dublin was sold for an after tax profit of €76.7 million in 2006. The subsidiary

companies Post TS UK and An Post Transactions SA were sold for €1.2 million in 2006.

- The introduction of a new collection and delivery programme in 2008.
4. The fourth cost recovery programme (P4) was implemented in 2013 and is expected to run until 2018. The plan includes measures for:
- Continued reductions in employee number (average of 325 FTE's per annum).
 - A reduction in payroll and non-payroll costs (through savings in professional services).
 - Continued implementation of automated technology along with the introduction of a Storage Area Network allowing for electronic customer signatures and real-time information on the Trace and Track service for registered goods.

The last three decades have represented an era where the objectives and activities of An Post experienced significant changes. The company evolved from a loss making hierarchical operation to a more autonomous commercially driven postal company. This is evident from the evolution of the company's stated corporate objectives and the increasingly commercial nature of its activities in terms of diversification and cost containment. An Post's process of commercialisation coincided with changes in the external and internal environments and as such the next section provide an overview of the major developments in both environments.

6.4 External Environment: Competition and Regulation

The postal sector plays a significant economic role, not only in individual economies, but also in the EU as a whole. According to the European Commission, the postal sector accounts for approximately 0.72 per cent (€91 billion) of GDP and employs 1.7 million people in the EU (2014). Until recently, the postal sector in the majority of EU countries had been dominated by a state owned vertically integrated monopoly. In the early 1990s the OECD highlighted the need for a thoughtful reform of the postal sector, with attention to employment and universal service issues. While it was determined almost immediately by the EU that express mail and

package services could be liberalised, there was some concern as to whether or not the final stage component (i.e. delivery) could be as accessible to competition as its vertically related components (i.e. collection, sorting and transportation).

Despite the full opening of the market in 2011, growth in competition has been slow, particularly in the area of letter post. This has necessitated the presence of regulatory bodies in many countries with the responsibility of applying appropriate regulatory mechanisms to ensure continued universal service provision. This section details changes in the competitive and regulatory environments in which An Post operates and examines whether or not these changes are associated with improved performance.

6.4.1 Competition

The 1992 EU green paper on postal sector reform represented the first step towards liberalisation of the European postal market. The paper called for: (1) the establishment of a set of universal services; (2) the establishment of an independent impartial regulator to monitor reserved and competitive services; (3) the liberalisation of: (a) cross-border services, (b) postal services for advertising mail and (c) upstream postal functions i.e. collection, sorting and transportation (Campbell 2001). The direct result of the discussions stimulated by the EU Green Paper was the enactment of the first EU postal directive, which entered into force in February 1998. Overall, the Commission wanted a phased approach with regards to liberalisation and this is evident in the gradual introduction of these Directives (See Table 6.1).

Table 6.6.1: Liberalisation Directives for European Postal Market

Year	Directives
1997 (97/67/EC)	<ul style="list-style-type: none"> • Reserved areas reduced to delivery of letters and parcels below 350g in weight and a price multiple of five times the price of a basic letter. • Implemented in Ireland in February 1999.
2002 (2002/39/EC)	<ul style="list-style-type: none"> • Amended the 1998 restrictions and the reserved area was reduced to below 100g in weight and three times the price of a standard letter (implemented in Ireland in January 2003). • From January 2004 all outgoing international mail became fully liberalised. • From January 2006 reserved area reduced to below 50g and a price multiple 2.5 times the price of a standard letter.
2008 (2008/06/EC)	<ul style="list-style-type: none"> • All reserved areas abolished and postal market fully liberalised. • Implemented in Ireland in January 2011.

Source: European Commission Publications (1997-2008)

In the initial stages of the liberalisation process An Post expressed concern with regards to revenue and universal service, as they felt that liberalisation measures would:

...have the effect of exposing to competition IR£20m (€25.4m) of Letter Post annual revenues. It is of crucial importance, therefore, to An Posts long-term viability that any future liberalisation measures introduced by the Commission take due consideration of the economic impact on the company as a national universal provider.

(Annual Report 1998, p.13)

The first EU postal directive, which entered into force in February 1998, was not implemented in Ireland until the 10th February 1999. This directive, allowed An Post a monopoly in the service delivery of letters and parcels below 350g in weight or, that costing five times less than the basic tariff. By 2001, 29 per cent of letter post revenue was open to competition. Following the introduction of the second directive in 2002 the market opened by a further 22 per cent between 2002 and 2006, and An Post turned its attention to developing strategies “to compete successfully and defend their market against this competition” (Annual Report 2002, p.5). While An Post agreed that competition could be beneficial for customers, they strongly believed that the Irish postal sector should be assessed on an individual basis. To apply the same set of directives to each member state was considered unfair, as no two sectors were completely alike and the impact of liberalisation in Ireland was considered:

...far above the Commissions estimated 2006 figure of 23% across the EU countries as a whole. This more extensive deregulation of the market is taking place at a time when Irish postal tariffs are among the lowest in EU countries, quality is among the highest and Irish customers are broadly satisfied with the service provided by An Post. There is a danger that the current generally satisfactory service could be jeopardised by the application of economic models unsuited to the Irish postal market.

(Annual Report 2001, p.8)

Following the third Directive in 2008, all reserved areas were abolished and full competition was introduced. However, despite full market opening, very little competition has emerged in the Irish domestic letter market, as the continued decline in mail volumes has discouraged new entrants and potential investors. In addition,

domestic letter post (particularly in terms of mailing) falls within the scope of universal service and as a result the market is dominated by the authorised USP provider, An Post. In contrast, the parcel and express services markets were never subject to national monopolies and therefore have always experienced a larger degree of competition. A recent study of the packets and parcels market commissioned by the Commission for Communications Regulation (ComReg) found that eight operators had a combined market share of approximately 90 per cent in 2013, with An Post's share of market volume and market value estimated at 30-40 per cent and 20-30 per cent respectively (Frontier Economics, 2015).⁵²

Apart from the direct competitive pressures brought about by EU-led market liberalisation, postal operators have faced enormous pressure due to the digital revolution and the shift towards online communication that has had a dramatic impact on traditional mail volumes across the globe. According to the International Post Corporation (2015) global mail volumes have decreased by a quarter since 2004. Whereas the rapid expansion of e-commerce has created opportunities for postal operators to increase parcel business, electronic substitution has simultaneously contributed to the sustained decline in traditional mail volumes.

6.4.2 Regulation

The liberalisation process initiated in 1998 has transformed the traditional monopolistic sector into a fully competitive market. However, despite the full opening of the market, incumbent operators continue to enjoy dominant market shares in certain areas (as is the case with An Post). Therefore, a suitable regulatory framework is still needed to ensure fairness and transparency within the market, and this is particularly true in the case of a Universal Service Provider (USP).

Universal Service incorporates a framework of measures, which aim to provide a sufficient level of service to all users in all territories. It is in essence, “a social contract between government and its citizens, defining what level of service government ensures will be maintained” (Campbell 2003, p372). The traditional monopolistic postal sector funded the Universal Service Obligation (USO) through

⁵²According to the same report, packets and parcels accounted for approximately 20 per cent of An Post's mail business in 2013.

the reserved area. The incumbent had a lucrative monopoly in certain instances (e.g. the delivery of letters weighing less than 350 grams), thus allowing them to offset any losses from universal service obligations with profits from the reserved area. However, the European liberalisation process gradually abolished reserved areas and now issues have arisen in relation to the funding of the USO in this changed environment. The cost of the USO is considered as the difference between the profits the universal provider could obtain if obligations were not imposed and the actual profit realized under USO. With regards to Ireland, An Post is the designated universal service provider. According to the Communications Regulation (Postal Services) Act 2011, universal service means that on every working day, there is at least one clearance and one delivery to the home or premises of every person in the State.

The *Commission for Communication Regulation (ComReg)* is charged with the task of ensuring that An Post fulfils their universal service obligation. Prior to the establishment of ComReg in 2002 An Post was regulated by the *Office of the Director of Telecommunications Regulation (ODTR)* which had taken control of all regulatory functions from the Minister for Transport, Energy and Communications in 1997. With regards to regulation in the postal sector the focus is on “the maintenance of the Universal Service Obligation (USO) and in ensuring that An Post prices are geared to cost” (ComReg Website). In 2007 ComReg commissioned the consulting firm *LECG* to develop a regulation model by which they could ensure that all consumers benefited from the opening of the Irish postal market to competition. The regulatory model, in addition to highlighting the importance of universal service, consisted of two key dimensions: 1) Tariffs; and 2) Quality of Service.

Tariffs

Traditionally An Post was legally required⁵³ to consult with the Minister before it increased postal tariffs. In its first annual report as a commercial enterprise, An Post stated that the standard price of a stamp in Ireland, 22p (28c), was significantly cheaper than other European countries (An Post Annual Report 1984). In order to meet costs, postal rates increased annually between 1986 and 1991 (see Table 6.2).

⁵³ In accordance with Section 70 (2) of the *Postal and Telecommunications Services Act, 1983*

However, postal rates remained stable for the next decade despite An Post's insistence for the need for tariff increases in line with inflation. In 2001 the company submitted a formal application to the ODTR for an increase in the domestic tariff (bringing the price of a standard stamp to 42c) and this was approved in March 2002.

Table 6.6.2: Postal Tariff Increases (%) 1985 to 2014

1985	1986	1987	1990	1991	2002	2003	2004	2005	2007	2008	2009	2013	2014
4.8	6	1.2	7.5	5.3	3.4	8.8	13.5	0.2	6.6	10.4	1.1	1.5	7.5

Source: Company Annual Reports

The company had begun to incur substantial losses in the early 2000s, and as a result an additional price increase was granted in 2004; however, An Post argued that the new price for a standard stamp (48c) was not a sufficient enough increase to aid the company's efforts in regaining control of costs. ComReg refused to allow any further increases as An Posts efficiency levels were deemed unacceptable. In response, An Post sought a judicial review of ComReg's decision and in 2006 an interim price increase was granted (the standard price of stamp rose from 48c to 55c). Further price increases were allowed between 2007 and 2009 to help alleviate some of the financial pressures stemming from the global financial crisis. The increase in the price of stamps for standard letters sent domestically and internationally from 55c to 60c in 2013⁵⁴ was considered necessary to ensure An Post's viability, as the company continued to face decreasing mail volumes.

Quality of Service

ComReg has the responsibility of measuring quality of service standards in relation to transit times for single piece priority mail. Measurements are based on statistical methods approved by the European Standards Institute (CEN) and a target of 94 per cent is set for next day delivery along with a target of 99.5 per cent for delivery within three days. ComReg publishes both quarterly and annual reports based on the figures calculated for them by independent economic consultants.

⁵⁴ This was still below the EU-15 average of 68c

Table 6.6.3: An Post's Quality of Service Results 2005 to 2014

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Next Day (Target %)	94	94	94	94	94	94	94	94	94	94	94	94
Next Day (Actual %)	71	73	73	72	77	79	84	85	84	86	87	90
Three Day												
(Target)	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5
(Actual)	96	96	97	97	97	97	98	98	98	98	98	98

Source: ComReg Publications

Table 6.3 shows that An Post has never successfully met the required targets, however, the company's performance over time has improved significantly. It can be expected that this trend will continue in the future under the price cap mechanism that will be applied from 2014 onwards⁵⁵.

Together, the developments outlined in this section have influenced the extent of competition and regulation that An Post has faced since the liberalisation of the postal sector commenced. In the packets and parcels sector, the company has faced strong competition, particularly with the growth in e-commerce that has resulted in significantly increased parcel volumes in recent years. Although detailed data on the extent of competition outside of the packets and parcel business is not available, the limited information in the public domain shows that An Post has maintained its dominance in the overall postal sector over the period reviewed, with no other operator having a market share in excess of one per cent in both volume and value (ERGP, 2014).

The fact that An Post has not faced any competition in its traditional small mail market is unsurprising given that market liberalisation occurred at a time when rapid technological developments have led to customers shifting their communications from physical letters to digital alternatives. This lack of competition, in addition to An Post's role as a USP, necessitates the presence of a regulatory body to monitor tariffs and quality of service. Although official price cap regulation did not come into effect until 2014 the movement from government department regulation to independent regulation was associated with improvements in the company's

⁵⁵ Under the Communications Regulation (Postal Services) Act 2011

performance as quality of service results improved significantly between 2003 and 2014.

6.5 Internal Environment: Organisational Change

This section examines changes in the internal organisational structure of An Post during the period 1984 to 2014. When examining the internal environment of the firm, a number of characteristics identified by Parker (1995) are examined, these include: organisational structure, Board of Directors, and Management.

Organisational Structure

The performance of a firm is often dependent upon achieving ‘goodness of fit’ between its external environment and its organisational structure. Changes in capital market status are expected to influence change in the internal organisational setting with the adoption of a less hierarchical and more decentralised structure.

An Post’s adoption of a more commercial organisational structure began almost immediately following its transition from a government department to an SOE. In its first year of operation as a commercial entity the structure of its postal service provision changed, with the establishment of separate divisions “responsible for the mails operations on one hand, and for banking and retail operations on the other” (An Post Annual Report 1984, p.4). Further internal restructuring occurred in 1987 when the mails division was subdivided into three different areas each under the direction of a general manager and each with its own personnel, operating and management accounting functions. Following a review of the company’s operations by PriceWaterhouseCooper in 1997, the company devolved and decentralised its structures further in order to survive in the rapidly changing external environment characterised by decreasing mail volumes, advancement in electronic mail substitutions and increased competition. This involved:

...the dismantling of the existing hierarchical management and operating structures and their replacement with autonomous business structures focused on the specific needs of the customers and markets of the Letter Post, Post Office and SDS divisions. Each of these divisions is a substantial undertaking in its own right and deserves the best in organisational structures and management practices.

(An Post 1997, p. 8)

Following a period of declining profits the company implemented a Strategic Recovery Plan in 2001. As part of this the company aimed to reduce management numbers by 40 per cent and so the separate business divisions were abolished in

2003. Top management were instead given broader roles with greater responsibility in key strategic areas such as Sales and Marketing, Innovation and Quality, and Regulation.

Executive Management

The task of aligning the internal structures of the firm with its external environment is the responsibility of the management team. As the company undergoes a commercialisation process it is expected that there will be changes at executive management level, thus ensuring the necessary skill-set is in place to adapt to the changing external environment.

The first individual to serve as CEO of the newly commercial An Post in 1984 was an internal candidate who had previously worked in the Department of Post and Telecommunications. From 1990 onwards individuals appointed to the role of CEO had commercial backgrounds with experience in sales, marketing, diversification and internationalisation. With regards to the structure of the management team, there was only minimal change throughout the late 1980s and 1990s. The most significant change occurred following An Posts unprecedented financial loss in 2003 when six of the eight members of the management team were replaced. Four of these individuals were new to An Post and had experience in the areas of energy, telecommunications, logistics and retail. The changes to the management team were made to aid An Post in addressing the challenges it faced particularly in relation to restructuring the loss making parcel business SDS and resolving disputes with Unions following the company's inability to pay wage increases agreed under the National Pay Agreement.

With regards to CEO⁵⁶ remuneration, as with all CEO positions in the 1980s, salaries in the public sector were significantly lower than those paid in the private sector. The Gleeson Review (1988) had recommended an increase in CEO basic salaries in addition to the introduction of performance related bonuses, however, due to pressure on public finances the report's recommendations were not implemented. Table 6.4 shows that CEO remuneration within An Post rose significantly from 1996 onwards. An Post was criticised after the CEO's salary increased to €500,000 during

⁵⁶Information on the salaries of the executive management team was not available

the 2009 financial year despite the company making a loss of €25.6 million in the same period.⁵⁷ The CEO's salary began to decline from 2010 onwards as a result of voluntary pay reductions and a cap of €250,000 on the basic salary of all SOE chief executives introduced by the government in 2013.

Table 6.6.4: CEO Remuneration 1996 to 2014

Year	Basic	Other	Total	Year	Basic	Other	Total	Year	Basic	Other	Total
1996	94	48	142	2003	261	72	333	2010	386	144	500
1997	98	60	158	2004	241	85	326	2011	381	114	495
1998	118	61	179	2005	261	155	416	2012	328	110	438
1999	98	60	158	2006	300	181	481	2013	295	91	386
2000	213	77	290	2007	353	170	523	2014	240	45	285
2001	239	80	319	2008	379	114	493				
2002	255	88	343	2009	386	144	500				

Source: Company Annual Reports

Overall, there were significant changes in the structure of the management team during the period of analysis. These changes included the creation of key management roles, a 40 per cent reduction in middle-management to allow for greater decentralisation and the introduction of performance related pay to incentivise management to contribute towards the firm's future profitability.

Board of Directors

Although changes in the number of individuals on the Board of Directors were minor between 1984 and 2011 (with a yearly average of two departures and two arrivals), there were changes in the skill-set of the Board and this is particularly true in the period following the introduction of the first liberalisation directive. Between 1984 and 1993, members of the Board primarily came from a postal background with the exception of those with accounting and human resource experience. Over time a number of individuals were appointed to the Board with experience in marketing, tourism, banking, community affairs, e-commerce, insurance, media and commercial sales.

⁵⁷Irish Independent, "An Post raises salary of its chief executive to €500,00 despite recording loss of €25.6 million", Friday, April 30th 2010.

The evidence indicates that changes in the composition of the Board occurred as a result of the commercialisation process that An Post underwent during the period of analysis. This is supported by the fact that several additions to the Board came as a direct result of changes in the commercial agenda of the company or the external environment. For example, individuals with significant experience in banking and communications regulation were appointed to the Board prior to An Posts joint Postbank venture and full liberalisation of the market.

Overall, the changes to the organisational structure, management and Board over the period reviewed point to a gradual evolution in An Post's internal organisational structure away from a hierarchal centralised command structure to a more decentralised structure with greater degrees of autonomy granted to different divisions.

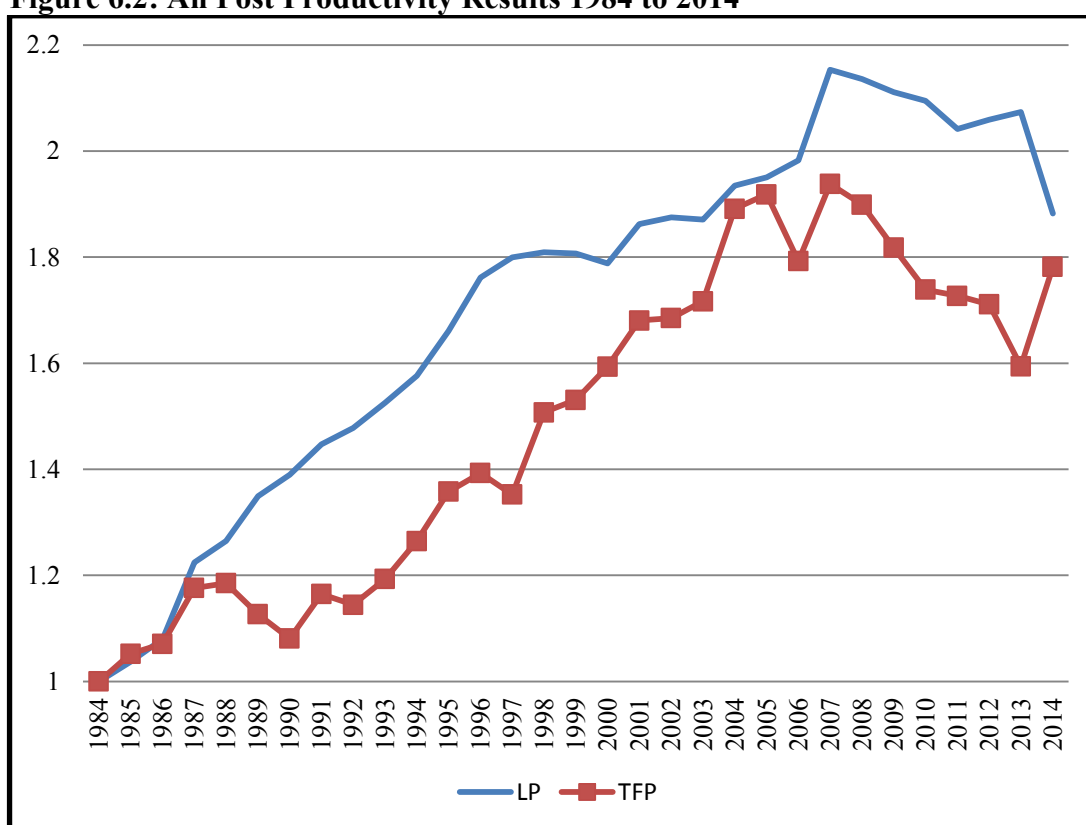
6.6 Commercialisation and Performance

The purpose of this chapter is to examine the association between change in An Post's internal and external environments and the economic performance of the company. It is evident that An Post has undergone a period of sustained reform whereby it transitioned from providing postal services as part of a government department to operating as a commercial SOE at arms-length from central government. In addition, it has operated in a business environment characterised by vast change that has intensified over the last decade as a result of liberalisation and rapid technological advancements.

This section examines the association between economic performance and a movement along the three dimensions of organisational status change model, i.e. capital market status change, competition and regulation, and internal organisational change. Although performance is analysed in the context of economic performance it is important to pay attention to the basic financial indicators published in annual reports that tend to dominate the public discourse around the performance of An Post. As can be seen in Appendix D, the company has struggled to perform on a consistently profitable basis, with losses recorded in almost half of the thirty years covered.

The use of profit based financial indicators can be misleading where SOEs are required to provide services that can often be non-commercial in nature. Therefore, this section utilises productivity indicators that are appropriate measures of economic performance. Given the labour intensive nature of the postal sector, this section utilises a labour productivity (LP) measure that relates changes in the quantity of output to changes in the quantity of labour input. In addition, total factor productivity (TFP) is used to measure the relationship between multiple inputs (capital, labour and other inputs) and output. More precise details on the methodology adopted and the data sources used to calculate LP and TFP can be found in chapter 3.

Figure 6.2: An Post Productivity Results 1984 to 2014



Note: Results are normalised to equal 100 in 2005

The upward trend in LP and TFP between 1984 and 2007 (see figure 6.2) can largely be explained by two factors: increased output and a reduction in labour input as measured by employee hours. Output in terms of mail volume grew annually by an average of five per cent between 1985 and 2002 and then continued to increase at a lower rate up until 2007. The reduced growth in mail volumes from 2002 can be

attributed to increased competitive pressures from other postal providers in addition to e-substitution. In terms of labour input, there was a significant reduction in employee numbers between 1985 and 1996 as part of a number of cost recovery programmes (previously discussed in section 5). Although employee numbers gradually increased from 1996 onwards this growth was outweighed by growth in output prior to 2007.

The downward trend in productivity from 2007 can be attributed to two principal factors. First, in comparative terms Ireland experienced one of the deepest and prolonged recessions in the wake of the economic crisis of 2007-08. This led to a considerable decline in the output of An Post across all its business activities. Second, over the same period there was a sustained decline in mail volumes as a result of increased indirect competition from e-substitution sources. The overall impact of these two factors has been to significantly reduce output such that the scope for maintaining the pattern of improved productivity performance prior to 2007 was severely limited.

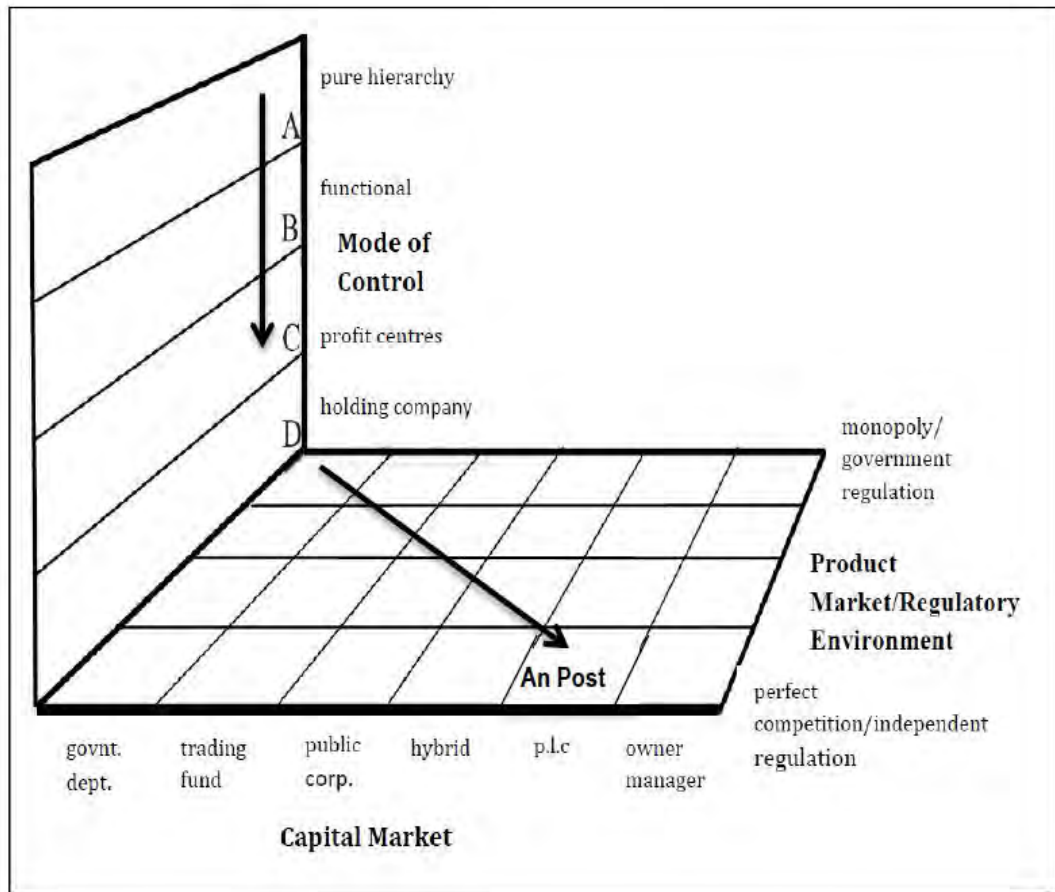
With regards to the period 1984 to 2007, changes in capital market status away from government control and the subsequent commercialisation measures identified in section 5 are associated with improved performance. Over the same period An Post undertook demonstrable internal organisational reform which is also associated with productivity improvements. However, the association between competition and productivity is less clear. Whereas An Post has clearly faced increases in direct competition in the packets and parcels business area in particular, it has maintained its dominance in the traditional mail market. There was a clear structural break in productivity trends post-2007 and as such no association can be made between changes across the three dimensions and economic performance during this period.

6.7 Conclusion

The European postal sector has undergone significant change during the period of analysis. Liberalisation, technological advancement and decreasing postal volumes have altered the environment in which national postal companies are operating. This is the case in Ireland, where An Post has undergone a significant period of commercialisation in response to these changes. To examine the relationship between commercialisation and the performance of An Post, this chapter adopts an

organisational status model framework adapted from the work of Dunsire *et al.* (1988, 1991). This model allows for the examination of how changes in both the external and internal environments of An Post were associated with changes in enterprise performance.

Figure 6.3: Model of Commercialisation applied to An Post



During the period of analysis, there were significant changes in the organisational characteristics of the company relating to objectives, activities and the company's overall commercial focus. These successive status changes away from hierarchal centralised command towards increased autonomy (depicted in the movement from west to east in figure 6.3) were associated with improved performance between 1984 and 2007, as the company had the commercial freedom to expand its revenue base through diversification and control its cost base through the implementation of cost containment programmes. In the context of its internal environment, An Post underwent several restructuring processes in an attempt to prepare for significant changes in the external environment stemming from the European liberalisation

process. Several of these changes (e.g. business division restructuring and reductions in middle management) were associated with improved performance (depicted in the movement from A to C in figure 6.3).

With regards to the impact of changes in the external environment on the performance of An Post, it is not possible at this stage to examine the impact of incentive based regulation as although the move from government regulation to independent oversight occurred in 2002, it was not until 2014 that a formal systematic price cap regime was introduced. The latter development is outside the timeframe of analysis and therefore had no bearing on the findings in this chapter. However, it can be determined that An Posts performance did improve following the movement from government regulation to independent oversight as ComReg began to informally consider quality of service results in its pricing decisions from 2003 onwards (depicted in the movement from North to South in figure 6.3).

An Post has faced strong competition in the packets and parcels sector, primarily due to the growth in e-commerce that has resulted in significantly increased parcel volumes in recent years. In contrast to its parcel business, An Posts letter business has faced minimal competition as An Post has maintained its dominance in the overall postal sector over the period reviewed. Incumbent postal operators worldwide are increasingly under indirect competitive pressure as a result of the ongoing global changes to the way people communicate. While the digital revolution has presented opportunities arising from increased parcel volumes due to the growth in e-commerce, this is occurring in a segment of the mail business that is increasingly competitive. Conversely, incumbent operators are faced by shrinking traditional mail volumes that has the potential to threaten their financial viability.

Whereas traditional responses to competitive pressures by any incumbent typically include efforts to reduce the quantity and cost of inputs and to increase market share, such responses are unlikely to be effective in the postal environment that now prevails. The sheer scale of the sustained reduction in mail volumes as a result of e-substitution is such that any improvements in the efficiency of input usage cannot compensate for sustained declines in output. Moreover, postal operators are further constrained in their ability to adjust where they are obliged to provide a universal postal service and are regulated with respect to tariffs and quality of service.

In summary, the analysis presented in this chapter demonstrates that since corporatisation An Post has adapted to changing conditions and achieved impressive gains in efficiency. However, its status as a universal service provider in the newly liberalised EU postal market presents unprecedented challenges that will require a new set of responses from the company, regulators and government alike if the company is to successfully pursue its objective to achieve commercial viability while safeguarding the wider needs of the economy and society.

Chapter 7: Conclusions

7.0 Introduction

Despite the introduction of a significant programme of privatisation throughout Western Europe from the 1980s onwards, governments today still retain significant ownership shares in enterprises that provide public services. This can be attributed to a number of factors including the general profitability of SOEs, the emergency role of government participation in the aftermath of the global economic crisis, and inadequacies in investment and quality of service under private ownership (Florio 2014). Whatever the reason for their continued presence, the fact remains that SOEs make a substantial contribution to the economies in which they operate as highlighted by the fact that in 2011 they employed over six million individuals and were estimated to be worth roughly \$2 trillion in OECD countries (OECD 2011).

These commercial SOEs are frequently required to provide services of a non-commercial nature and this has become increasingly difficult over the last two decades given the considerable reform that has occurred in their external competitive and regulatory environments. This is certainly true for most Western European countries where several of the markets in which SOEs operate have undergone a significant liberalisation process since the 1990s. This has led to increased competitive pressure for SOEs operating in areas such as energy, transport and post. In addition, the regulatory environments in which these SOEs operate have also been transformed in recent years as independent regulatory bodies have been established to replace traditional government regulation.

Molyneux and Thompson's 1987 analysis of productivity in the UK SOE sector represented the first study in the international SOE literature that covered a large number of SOEs in one country and went beyond the use of standard financial indicators. The authors concluded that the productivity growth recorded by SOEs was unambiguously positive but there was scope for further efficiency improvements through increased competition. It is important to note that this study was published at a time preceding the competitive and regulatory overhaul witnessed in the late 1980s and 1990s. Subsequent studies of a similar nature are conspicuously absent from the international SOE literature and this thesis, therefore, makes a novel contribution in this respect by conducting the first country level analysis of SOE performance and productivity since Molyneux and Thompson's study in 1987.

This analysis of the performance of SOEs in Ireland represents the first comprehensive study of the main non-financial Irish SOEs since Sweeney (1990) and Reeves and Ryan (1998). It seeks to improve upon these studies by moving beyond the use of basic financial indicators and constructing productivity based measures (i.e. LP and TFP) that are theoretically grounded and widely accepted for performance analysis where companies are owned by government. Productivity-based indicators seek to account for the inherent conflict between an SOE's commercial and non-commercial objectives and the subsequent impact of this aspect of public enterprise on performance and productivity. Any debate about the future direction of these SOEs and how they should be financed requires a comprehensive in-depth analysis of performance and productivity and this thesis addresses this issue by conducting the first productivity-based analysis of the Irish SOE sector.

This thesis also seeks to deepen our understanding of SOE performance by adopting a case based analysis of two individual SOEs using a conceptual model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991). The model provides a framework for disentangling the association between performance and changes in factors such as capital market status, product market competition, regulation and the internal environment. A strength of the case study approach is that it allows for an extended time period of analysis (over 20-30 years) that highlights factors that might otherwise be missed in many of the shorter analyses that tend to dominate the academic literature.

7.1 Main findings

The analysis of the Irish SOE sector presented in Chapter 3 measures the financial and economic performance of nine SOEs operating in the areas of energy, transport and post. These SOEs have been exposed to significant changes within the competitive and regulatory environments in which they operate. The introduction of a number of EU Directives on liberalisation has resulted in a significant increase in competition for some SOEs (Bord Gáis, ESB and An Post), while a change from traditional government regulation to independent regulation has led to increased oversight in the areas of pricing and investment for others (all SOEs with the exception of Coillte and Bord na Móna). In response to these changes, the SOEs reviewed in this chapter undertook a number of measures, the most significant of which were the expansion of existing activities into international markets (Bord Gáis, ESB, DAA, Coillte) and the

diversification of activities into new and complementary markets (all SOEs with the exception of the CIÉ companies).

In terms of financial performance, the analysis shows that SOEs (with the exception of the three public transport companies (bus and rail)) were profitable over the period 2002-2014. The poor financial performance in the case of the public transport companies was a result of substantial reductions in the subventions payments paid by government, particularly following the onset of the economic crisis.⁵⁸ Variation in the productivity results recorded across companies makes it difficult to formulate a general conclusion about the economic performance. Productivity results for some SOEs (Bord Gáis, the DAA, An Post and Irish Rail) followed the wider business cycle with a general trend of efficiency gains recorded prior to the onset of the economic crisis in 2008 and a reversal of this trend recorded thereafter (however it should be noted that in cases where productivity levels increased after 2008, they remained significantly lower than those recorded prior to the crisis). Deteriorations in productivity for other companies (ESB, Bus Éireann, Dublin Bus, Bord na Móna) outside of this were primarily associated with substantial programmes of capital investment. For example, the ESB's productivity (in terms of TFP) deteriorated over the entire period of analysis as a result of significant capital investment in core infrastructure assets, while productivity results for Bord na Móna and Coillte were adversely affected by the cost of investing in non-core assets as they diversified away from their core activities.

Chapter 4 analyses the financial and economic performance of the DAA using the conceptual model of commercialisation outlined in chapter 1. During the period of review (1994-2014), the DAA's organisational structure underwent a number of changes: (i) the company was given ownership of the airport assets that it managed in 1998; (ii) the group was restructured in 2004 to give greater autonomy to the three airports (Dublin, Cork and Shannon); and (iii) Shannon airport was separated from the Group in 2012. In addition, there was significant change in the external regulatory environment with the establishment of an independent regulatory body to replace traditional government regulation. This new structure resulted in increased regulatory oversight in the areas of price, investment and quality of service.

⁵⁸ Bus Éireann, Dublin Bus and Irish Rail incurred losses on PSO contracts of €7.9 million, €82.1 million and €109.4 million respectively between 2008 and 2014.

The conceptual model of commercialisation adapted from the work of Dunsire *et al.* (1988, 1991) was applied to the analysis of the DAA's performance. This model allows for an examination of change across a number of areas (capital market status, product market competition, regulation and the internal environment) and the subsequent impact of these changes on performance. In terms of productivity (measured by TFP), there was no evidence of improved performance over the period of analysis as a result of the continued commercialisation of the company. Instead productivity was adversely affected in certain instances by the substantial capital investment programmes implemented by the company. This investment was however geared towards increasing infrastructural capacity and it is important to recognise that the long-term benefits of this type of investment will not immediately be reflected in any productivity analysis.

The same model of commercialisation is used in the analysis of An Post (1984-2014) presented in chapter 5. An Post underwent a sustained period of commercialisation following its transformation from a government department to a commercial SOE in 1984. This evolution coincided with great change in the external environment as the market for letter mail was gradually liberalised and regulatory responsibilities were transferred from government department level to an independent regulatory authority with the establishment of ComReg in 2002.

In terms of performance, the continued commercialisation of An Post led to large productivity gains from 1984 to 2007, but this positive trend was reversed from 2008 onwards. Although the wider economic crisis was a major factor in this regard, the sustained decline in output over this period was predominantly associated with a fall in traditional letter mail volumes as a result of increased competition from alternative e-communication methods. Although the digital revolution has presented opportunities in the parcel and packet market through growth in e-commerce, it has also shrunk the market for traditional letter mail by providing more convenient electronic communication methods such as e-mail. Moreover, An Post is constrained in its ability to adjust to this challenge given its USO and regulatory constraints relating to tariffs and quality of service.

7.2 Implications of the Research

When considering the performance of SOEs a number of questions arise. First, how is performance defined? Second, how is performance measured? Third, what factors other than ownership should be analysed in explaining performance? There is no straightforward answer to any of these questions and as such the concept of performance is an elusive one (Martin and Parker 1997). This research grapples with all of these questions when analysing SOE performance in an Irish context.

Theories such as property rights and public choice provide insight into the perceived lack of efficiency in the public sector, and explain the impetus for reforms such as corporatisation, commercialisation and privatisation. This research recognises the fact that there are various organisational types that exist between the two extremes of a government department and a fully private firm, and public enterprise represents just one of these types. In analysing the complex and dynamic process of commercialisation within public enterprise, this research draws upon theories from several streams including organisational theory, governance, political theory and management. In this context, the findings from this research should be of relevance to policymakers, stakeholders in SOEs and academics within the field of economics, public management and political science.

In academic terms, this thesis demonstrates the value of in-depth research on performance that adopts a mix of performance indicators. Although recognising the benefit of financial measures, the research highlights the fact that financial profitability cannot be the sole criterion for judging performance given the fact that SOEs were created to achieve economic, social and political objectives. Thus, the additional use of productivity based indicators enables a deeper understanding of SOE performance. In addition, this research demonstrates the value of a case based approach to performance measurement. These studies allow for analysis over an extended time period and in this respect capture the long-term impact of changes in the internal and external environments that tend to be overlooked in non-case based comparative studies based on short time periods.

This research shows that public ownership is still important in Ireland, suggesting that government continues to regard state control of certain industries as the preferred option. In addition, there is evidence that Irish citizens support continued public

ownership in certain key network industries that provide non-commercial services of a public nature. However, it is the public nature of these services that gives rise to the ongoing challenge for SOEs to balance the need for commercial viability with the requirement to provide non-commercial services.

The performance analysis sheds light on a number of areas that require further scrutiny on a policy level. Firstly, an inadequate system of subvention payments has had an adverse effect on the financial viability of some SOEs. Given that these subvention payments are confined to the transport (bus and rail) sector there is scope for the development of an overarching policy that clearly outlines what is required of these SOEs in terms of public service provision and makes a commitment to covering the cost of such provision in full. For example, New Zealand introduced the *SOE Act* in 1986 to ensure that in the case of each SOE any non-commercial objectives are identified and that the enterprise is paid an explicit subsidy equal to the loss incurred. Secondly, it is evident that conflict can arise between the objectives of some policies applied to SOEs. Several SOEs are required to invest in the upkeep of core infrastructure which poses a significant drain on the financial resources of the enterprise (as evidenced in the performance results presented in this thesis). At the same time, these SOEs are required to pay a dividend to the state and if this cannot be covered by cash reserves the funds must be raised elsewhere (through borrowing or the sale of assets).

The analysis of the DAA and An Post in this study, in addition to the recent events surrounding the financial instability of Bus Éireann and Irish Rail, demonstrate the tension that exists between commercial and non-commercial objectives. These companies have lost revenues as they operate in markets characterised by increased competition and regulatory oversight yet are constrained by public policy particularly in the areas of investment and PSO/USO. In the case of Bus Éireann, a reduction in PSO funding at a time when competitive pressure is increasing has threatened the financial viability of the company. Similarly, indirect competition from alternative e-communication methods has shrunk the market for traditional letter mail yet despite this decrease in revenue An Post must still continue to provide a USO without subvention from government.

Going forward the main challenge for government in relation to commercial SOEs is the balancing of public missions and financial viability. Unless increased financial support

is provided it is inevitable that the role of SOEs must change. The limited options in this regard include: 1) SOEs withdraw from public service provision and allow these services to be provided under some form of privatisation arrangement; or 2) some activities relating to PSO/USO are outsourced to private operators. Both options present risks in terms of service provision as full or partial privatisation will not necessarily result in improved financial and economic performance or better delivery of public service (Parker and Saal 2003; Florio 2004). Overall, it is evident that policy applied to SOEs has the potential to significantly impact the productivity of the enterprise. As a result, SOE policy in Ireland needs to be viewed through a new lens. This process should be undertaken by an impartial body with functions similar to those of the Oireachtas Joint Committee on State-Sponsored Bodies that operated in the 1970s.⁵⁹

7.3 Limitation and Suggestions for Future Research

Although extensive steps were taken to ensure the rigour of the research, it should be acknowledged that there are some inherent limitations to the study. These limitations largely relate to the lack of available data for some companies and reservations regarding reliability and generalisability of the study's findings. The focus on Ireland limits the generalisability, however, the compact nature of Ireland's SOE sector (in comparison to other European countries) provided a good template for a country-wide analysis. Limitations relating to the availability of data were largely attributable to concerns regarding the commercial sensitivity of the data.

In the context of future research, there are a number of areas that merit further attention. First, there is a case for applying the conceptual model of commercialisation to the other seven companies reviewed in chapter 3. Each company has its own individual story of commercialisation and a more in-depth analysis of each would provide a greater understanding of the internal and external factors that impact performance

Second, given that the productivity of several of the companies reviewed in this thesis was impacted by high levels of investment concentrated in short periods, there is potential value in revisiting the analysis of these companies (and the DAA in particular) at a later date to examine if the long-term benefits expected of this type of investment

⁵⁹ This committee had responsibility for examining the Reports and Accounts and overall operational results of each SOE. It would then report to the Houses of the Oireachtas and make recommendations where appropriate.

translate into improved productivity. In addition, the analysis of the energy companies could be re-visited if data relating to physical outputs becomes available in the future.

Third, due to a lack of available data, it was not possible to conduct an international comparative study on the performance of SOEs. A more detailed analysis of the commercialisation of Irish SOEs compared to other suitable countries would prove useful as benchmark studies often highlight additional factors that may not have been apparent within a country specific analysis.

Finally, government policy on SOEs also provides a possibly fruitful direction for future research. While chapter 2 provided insights into the thrust of SOE policy at different stages, there is much scope for further research based on a more conceptualised approach to understanding government policy, its formation and implementation over time. The development of a more concise conceptual framework for the analysis of government policy would provide opportunity for understanding the objectives of government policy and factors that drive decisions. Possible approaches towards a conceptualised framework could build on earlier studies by Christensen (2015) who uses a historical institutional framework to analyse SOEs as a mode of governance in marketisation. Other studies that are not strictly focused on SOEs but do point to potentially suitable conceptual frameworks include: Sheppard and Beck (2016) who use a framework that includes building capacity, obtaining legitimacy and balancing interest to examine policy on Public-Private Partnerships in terms of the impact of adoption patterns on the sustainability of PPPs in the post-crisis period; and, Merceille and Murphy (2017) who developed a methodological framework based on the concept of accumulation by dispossession to analyse different forms of privatisation.

7.4 Conclusion

The adoption of privatisation and liberalisation policies over the last 40 years led to a major re-think about public enterprise and the role it should play in modern economies. Whereas the era of privatisation suggested that the prominence of public enterprise was close to an end there has however been a resurgence of interest in SOEs, primarily as a result of concern around public finances in the wake of the global economic crisis. Although the scope of public enterprise has expanded in recent years to include sectors such as banking, it is through key infrastructure sectors that provide vital public services, that SOEs make their most significant contribution.

This is certainly true in the case of Ireland where SOEs play a major role in the economy and the lives of its citizens. These enterprises have been subject to enormous change over the last few decades. The requirement for some SOEs to provide services of a non-commercial nature creates a natural tension with other commercial objectives and ensuring financial viability that is further exacerbated by regulatory and funding constraints. The findings from this research indicate that SOE performance is strongly influenced by the conflicting nature of these objectives. It is imperative that future policy is based on clearly formulated commercial and non-commercial objectives, realistic targets for commercial performance and adequate government support for the fulfilment of public missions.

Such an approach would greatly enhance our understanding of how SOEs perform. All too frequently public enterprises become a hot topic of public debate when they encounter financial difficulties. The focus on largely profit based measures of SOE performance tends to limit the debate and distracts from a full understanding of how SOEs perform given the actual rationale for their existence and the constraints they operate under. The analysis conducted in this thesis illuminates a number of these constraints in the Irish context (but which are applicable elsewhere). These include the requirement to provide unprofitable services for which they are not fully compensated and the requirement to make large scale infrastructure investments that diminish short run performance but are designed to generate social benefits in the long-run. It is worth emphasising that many of these issues were highlighted in the literature and public policy reports on SOEs in the 1980s. What is different in 2017 is that SOEs in a number of sectors operate in newly liberalised environments. The increased competitive pressures on the commercial services these companies provide undermine the financial performance of SOEs and threaten their financial viability. This highlights the need for a deeper more nuanced debate about SOE performance and the critical role they play in the modern Irish economy and society. It is imperative that this debate is evidence based. The analysis presented in this thesis can make an important contribution in this regard.

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Appendix A: SOE Statutory Obligations and Public Missions

Table A1: SOE Statutory Obligation and Public Mission

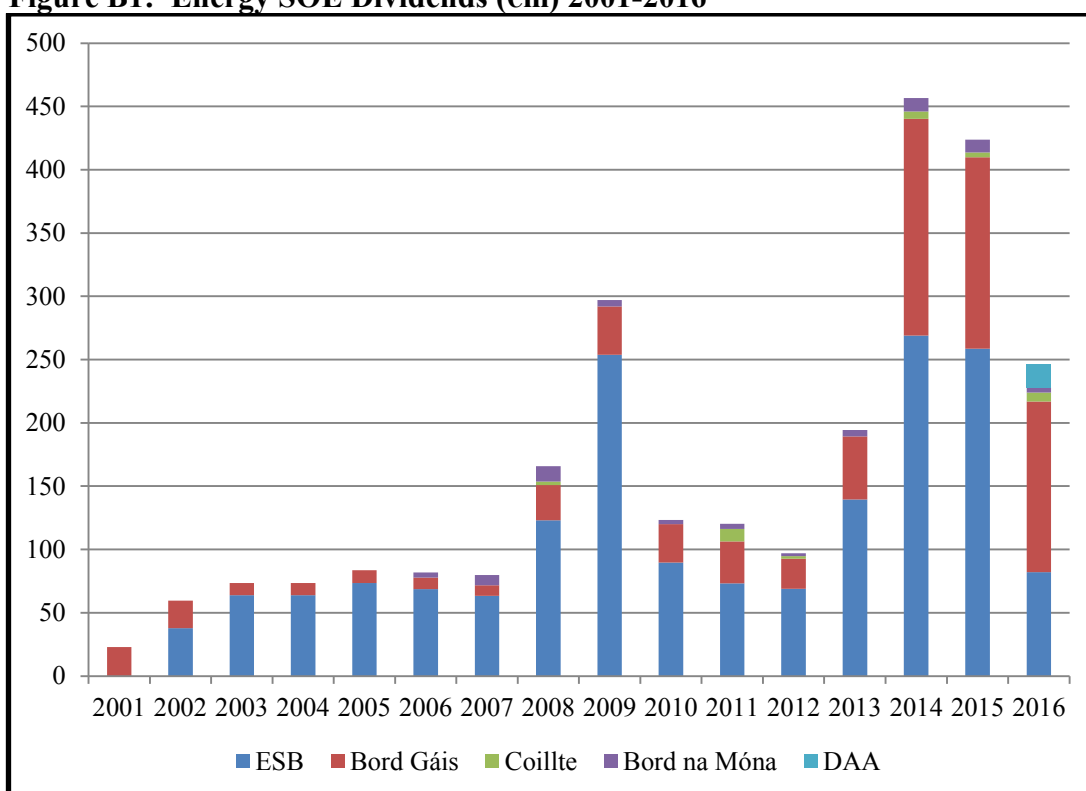
	Statutory Obligation	Public Mission
Bord Gáis	Transmit and distribute natural gas; sell and supply natural gas; purchase or otherwise acquire natural gas from any source; prepare, process or treat natural gas; provide, operate and maintain capital infrastructure. (Gas Act, 1976)	“Bord Gáis’ core mission is to be Ireland’s sustainable provider of customer-led energy solutions. The key elements of the resultant vision are to provide efficient, competitive, and safe energy services to all our customers, and to generate returns for our shareholder whilst continuing to build the financial strength of the business to support ongoing investment. We are also committed to creating a safe and attractive place to work for all our employees”. (Bord Gáis Website).
Bord na Mona	Produce and market turf products; foster the production and use of turf; acquire bogs and other land; and manage, develop and work bogs and other land. (Turf Development Act, 1946)	“Bord na Mona will continue to fully utilise its peat land resources to create value in order to develop a portfolio of sustainable infrastructure in Ireland, to support customers’ requirements for renewable energy, water and resource recovery, whilst driving profitability and shareholder return.” (Bord na Mona Annual Report 2013).
Coillte	Carry on the business of forestry and related activities on a commercial basis; establish and carry on woodland industries; participate with others in forestry and related activities consistent with its objects, designed to enhance the effective and profitable operation of the company; and utilise and manage the resources available to it in a manner consistent with the above objects. (Forestry Act, 1988)	“To be a sustainably managed Irish-based international forestry and forest products and services company which harnesses the full potential of all the company’s resources, including its forests, lands, staff and financial resources. To generate optimum commercial returns on its investments by providing outstanding products and services to its customers, while managing its businesses in an environmentally, socially, and economically sustainable fashion” (Coillte Website)
Electricity Supply Board (ESB)	Produce and generate electricity; control, manage and maintain in good repair and condition its capital infrastructure; distribute, utilise and sell electricity; and, control, co-ordinate, and improve the supply distribution. (Electricity Supply Act, 1927)	“To bring sustainable and competitive energy solutions to all customers” (ESB Annual Report 2013).
Córas Iompair Éireann (CIÉ)	The railway company shall provide a railway service and a road freight service; the Irish bus company shall provide a passenger service by road, except so far as such a service is provided by Dublin bus; and the Dublin bus company shall provide a passenger service by road for the city and county of Dublin. (Transport Act, 1986)	“CIÉ’s vision is aligned to our statutory mandate which is to provide socially necessary bus and rail transport in a well-functioning, integrated manner which contributes to balanced regional economic development and social cohesion at a reasonable cost. Currently CIÉ has devolved certain of these functions to three operating subsidiaries through the 1986 Act – Bus Átha Cliath, Bus Éireann and Iarnród Éireann”. (CIÉ Annual Report 2013)
DAA	Conduct its affairs so as to ensure that the revenues of the company are not less than sufficient to meet all charges which are properly chargeable to its revenue account, generate a reasonable proportion of the capital it requires, and remunerate its capital and pay interest on and repay its borrowings; to take such steps to ensure the efficient operation, safety, management and development of its airports; to conduct its business at all times in a cost-effective manner, and to regulate operations within its airports. (State Airports Act, 2004)	“To manage our airport business profitably, meeting customer needs and creating gateways for 21st century Ireland”. (DAA Website)
An Post	Provide a national postal service within the State and between the State and places outside; and, meet industrial, commercial, social and household needs of the State for comprehensive and efficient postal service. (Postal and Telecommunications Act, 1983)	“To provide world class postal, distribution and financial services with unrivalled local community access and global connections”. (An Post Annual Report 2013)

Source: Company Annual Reports

Appendix B: SOE Dividend Policy

Figure B1 highlights the increased dividend payouts by energy SOEs since the onset of the Irish economic crisis in 2008. Between 2001 and 2007, total dividends from the ESB, Bord Gáis, Coillte and Bord na Móna amounted to almost €475 million. This rose to a total of €2.106 billion over the period 2008-2016 with the majority of this amount paid by the ESB (€1.36 billion) and Bord Gáis (€660 million).

Figure B1: Energy SOE Dividends (€m) 2001-2016



Source: Authors' calculations from data sourced from annual reports and annual Exchequer statements.

While approximately €585 million of the ESB's dividend payments and €150 million of Bord Gáis' dividend payments between 2008 and 2016 are the result of special dividends, much is due to higher dividend payout policies imposed by the Government. For example, prior to 2008, Bord Gáis paid out 10 per cent of its previous year's profits in dividends. This was increased to 20 per cent in 2008 and 30 per cent from 2009 onwards. In October 2013, the ESB revised its dividend policy at the request of the Minister for Communications, Energy and Natural Resources. Under the revised policy, the ESB is to increase its dividend pay-out ratio from 30 per cent of normalised profits after tax to 40 per cent by 2017.

The special dividends paid by the ESB and Bord Gáis represent a noteworthy development in terms of Government policy towards the SOE sector in the post-crisis environment. In the ESB's case, the company was directed by the Government in 2012 to sell €400 million in assets by the end of 2014 and to pay the proceeds to the Exchequer in the form of a special dividend. The sale of assets imposed on the ESB was to help meet the Government's agreed upon targets for privatisation revenues with the Troika under the terms of its bailout agreement. The ESB raised just over half of the required €400 million through the sale of its 50 per cent stakes in two international tolling plants – Marchwood Power in the UK and Bizkaia Energia in Spain – in November 2013 and May 2014 respectively.⁶⁰

To raise the remainder of the funds for the special dividend, the ESB announced in October 2013 that it would sell two of its peat-fired generation stations in Ireland. However, after a detailed review the ESB reversed this decision in July 2014 and instead announced that it would borrow the money needed to pay the remaining €213.7 million it owed the Government. In a similar development, Bord Gáis announced in July 2014 that it would be paying a special dividend of €300 million financed by company borrowing to the Exchequer. The payment arose from the refinancing of company debt after the sale of its retail division where Bord Gáis calculated that the resulting lower repayments would allow it to borrow an extra €300 million without affecting its current repayments.⁶¹

The financing of over €500 million in special dividends to the Exchequer through ESB and Bord Gáis borrowings raises the risk of increasing the indebtedness of these SOEs in the short term and creates potential pressure to increase consumer prices in the medium to short term, thus hindering investment and competitiveness policy goals. These developments are consistent with other Government initiatives such as the use of Public Private Partnerships (PPPs) to facilitate public investments in infrastructure by off-balance sheet means. It remains to be seen whether or not these developments serve the long-term interests of the SOEs, consumers and taxpayers.

⁶⁰ Source: ESB annual reports, 2013 and 2014.

⁶¹ Paul, M. "Bord Gáis group in red after Whitegate plant writedown", *Irish Times*, 16 July 2014. Available at: <http://www.irishtimes.com/business/energy-and-resources/bord-g%C3%A1is-group-in-red-after-whitegate-plant-writedown-1.1868416>

Outside of the two main energy SOEs, both Bord na Móna (€68.4 million) and Dublin Port (€89.5 million) have both contributed considerable dividend payments to the Exchequer from 2008 to 2016. In the case of the latter, dividends have been paid despite its pending large-scale investment in the deepening of the main navigation channel at the port. Similarly, the Dublin Airport Authority was also directed by the Government to begin paying dividends again in 2016, when it paid out €18.3 million, despite its planned major investment in a second runway at the airport. The Commission for Aviation Regulation, which regulates charges at Dublin Airport, openly questioned the feasibility of the DAA being able to simultaneously “make allowances for investments needed to develop the airport efficiently and economically, protect users from higher airport charges, and provide for [...] a dividend” (CAR 2014, p.33). This tension between earning a return from its shareholding in an SOE and the ability of an SOE to invest in future capacity is an issue that is likely to come increasingly to the fore in the short term as most SOEs move forward with significant capital expenditure programmes over the coming years.

Appendix C: Table of Financial Results for the DAA 1994-2014

Table C1: DAA Financial Results 1994-2014

Year	Turnover (€000)	PBITE (€000)	Net Profits (€000)	Capex (€000)	Employee Numbers
1994	246,570	43,337	34,984	32,300	2,672
1995	269,831	50,930	43,240	30,478	2,659
1996	293,699	55,924	49,527	28,701	2,742
1997	313,368	60,347	54,271	72,313	2,797
1998	338,216	76,436	60,942	88,874	3,151
1999	371,949	65,325	39,413	127,126	3,341
2000	424,993	83,070	45,616	81,290	3,341
2001	438,320	67,203	11,567	124,024	3,438
2002	420,874	75,912	36,223	85,952	3,431
2003	436,868	48,641	6,927	68,984	3,387
2004	465,688	69,907	31,148	23,607	3,453
2005	524,982	94,070	50,086	49,743	3,620
2006	590,586	116,353	165,962	200,726	3,657
2007	623,364	150,079	347,526	52,297	3,163
2008	630,940	117,929	47,074	320,323	3,237
2009	546,716	65,399	-13,267	144,685	3,103
2010	558,153	91,401	33,110	979,417	2,971
2011	557,492	93,749	30,193	109,305	3,032
2012	574,611	112,804	19,439	26,183	3,016
2013	500,589	100,006	38,158	64,891	2,588
2014	563,792	86,784	19,260	63,765	2,813

Source: DAA annual reports. Note: results for Shannon Airport not included in 2013 and 2014 figures.

Appendix D: Table of Financial Results for An Post 1984-2014

Table D1: An Post Financial Results 1984-2014

Year	Turnover (€000)	PBITE (€000)	Net Profits (€000)	Capex (€000)	Employee Numbers
1984	190,485	-6,827	-478	4,368	11,871
1985	212,245	-2,291	-2,291	8,905	11,948
1986	233,537	855	855	7,425	11,951
1987	247,389	3,526	2,001	11,009	10,701
1988	241,570	2,074	805	10,705	10,269
1989	250,219	-4,624	-3,371	16,141	9,871
1990	295,770	-12,467	-11,048	13,756	9,812
1991	272,382	-3,710	-3,993	9,325	9,564
1992	309,362	-374	52	16,272	9,722
1993	345,146	9,267	6,074	26,944	10,241
1994	366,743	13,839	7,390	24,253	10,102
1995	377,238	11,406	9,159	18,741	9,908
1996	406,621	15,024	7,717	23,935	9,895
1997	468,054	17,684	7,975	27,315	10,130
1998	494,319	10,534	6,396	27,916	10,463
1999	538,634	13,390	128,420	43,693	10,767
2000	572,909	9,781	51,889	63,914	11,174
2001	624,924	-6,687	-5,342	83,490	11,382
2002	682,996	-17,396	-70,469	64,936	11,877
2003	709,209	-42,891	-32,049	20,893	11,945
2004	750,193	-3,007	11,137	5,725	11,754
2005	752,887	16,197	40,710	10,253	11,379
2006	818,827	14,665	95,705	18,681	11,312
2007	875,983	29,126	43,335	10,246	11,161
2008	850,043	31,235	33,215	38,931	11,173
2009	804,216	5,741	-29,065	51,414	11,271
2010	805,120	5,838	-24,682	47,254	11,288
2011	806,714	2,216	347	35,998	11,276
2012	807,295	-17,484	-39,377	28,774	11,240
2013	811,693	-11,463	5,869	22,288	11,041
2014	820,557	5,887	24,161	9,871	11,682

Source: An Post Annual Reports.