

MARITIME TRANSPORT IN IRELAND: HOW PORTS CAN ENCOURAGE ECONOMIC GROWTH

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Ireland's economic development has placed unprecedented pressure on the country's infrastructure. Jessica Ferguson examines the importance of ports to Ireland's economy and points out that capacity constraints are now at crisis levels. Solutions to this problem are discussed, with the Bremore proposal emphasised as the most feasible option.

Introduction

"Whosoever commands the sea commands trade; whosoever commands the trade of the world commands the riches of the world, and consequently the world itself"¹

The gains from trade, and consequently economic growth, are well documented, empirically evident, and desirable. Yet, as Kondratieff and other economists have discovered², with every boom comes a downturn in a cyclical fashion that is inevitable (McAleese, 2004). Ireland has experienced major economic, social and political change in recent years. 'Peaks' and 'troughs' are readily identifiable; the recession of the 1980s was dramatically replaced by the booming 1990s, migration patterns have reversed from a position of net emigration in the eighties to net immigration today, major unemployment in the eighties succumbed to almost full employment during the mid to late 1990s, the Irish population is at its highest figure in 130 years and the future of Northern Ireland looks bright. In 2007 it is evident that another economic fluctuation has occurred; the Celtic Tiger, characterised by extraordinary economic growth rates in Ireland from the mid to late nineties, has peaked and left major implications for transport in its aftermath. This essay will look at capacity issues at Irish seaports, an indirect consequence of the preceding economic boom. Particular attention

¹ Sir Walter Raleigh, (Garrison and Levinson, 2006:206).

² Kuznets, Juglar and Kitchin

will be paid to Dublin Port and remedies required to encourage Ireland into the next stage of the economic cycle.

The Irish Economy: Exports and Ports

As a small open economy, Ireland is highly dependent on trade for economic prosperity and sustainability. Exports currently comprise over 80 per cent of Gross Domestic Product (McCall, 2006). In 2005, total Irish exports reportedly reached a value of €88 billion, an increase of 4.7 per cent on 2004, (Gurdgiev et al., 2005). During its most recent peak in the mid to late nineties, Ireland's economy was growing at an annual average rate of 8-10 per cent – a figure perfectly exemplifying the results achievable via openness to international trade. A good quality infrastructure system is also a crucial prerequisite³ for such healthy economic performance. As an island located on the periphery of Europe's lucrative market, Ireland has a particular interest in maritime transport. McCall (2006) and the Department of Transport (2005) both believe that 99 per cent of Ireland's foreign trade uses "*the maritime supply chain*" (Department of Transport, 2005:10). Given Ireland's location, it is clear that ports, being the essential link between sea and land transport, play a vital role in Ireland's trade activities and hence its economic growth.

The Ports Defined: Role, Purpose and Performance

Ports, by definition, are "*bi-directional logistics systems*" (Paixão and Marlow, 2003:358), receiving goods from ships, transporting them to land, and vice versa. They are the central link in complex supply and logistics chains (Banister et al., 1995). The explicit role of a port is to provide berthage, pilotage, towage, stevedore services and terminal and handling facilities (Mangan and Hannigan, 2000), consequently enhancing competitiveness and facilitating business flexibility and adaptability (Paixão and Marlow, 2003). Transport has a limited intrinsic value but accommodates the performance of other activities (Barrett, 1982). While ports cannot guarantee an economy's prosperity, they do support its growth indirectly (Cole, 2005).

³ Other prerequisites may include FDI (Foreign Direct Investment), political and constitutional stability, labour market flexibility, a highly educated, quality workforce, technological innovation, favourable taxation schemes and more.

The Irish Maritime Development Office (IMDO) has praised both large and small Irish ports for their record performance and contribution to trade in recent years. They handled an astonishing 84 per cent of the total volume and 58 per cent of the total value of trade in 2004 and managed to improve on that in 2005. The Central Bank suggests 2006 and 2007 will produce figures mirroring this positive. These figures and predictions indicate that efficient handling and management of trade flows at Irish ports is a crucial contributor to Ireland's competitiveness and economic performance (Gurdgiev et al., 2005).

A Capacity Crisis

One important consideration arising from these optimistic outlooks for the future is capacity. Economic growth has been the norm rather than the exception in developed economies since the industrial revolution (McAleese, 2004). The positive, welfare enhancing results of the Celtic Tiger have led to externalities aplenty; congestion, bottlenecks and capacity problems are consequences that have the potential to damage the Irish economy's performance.

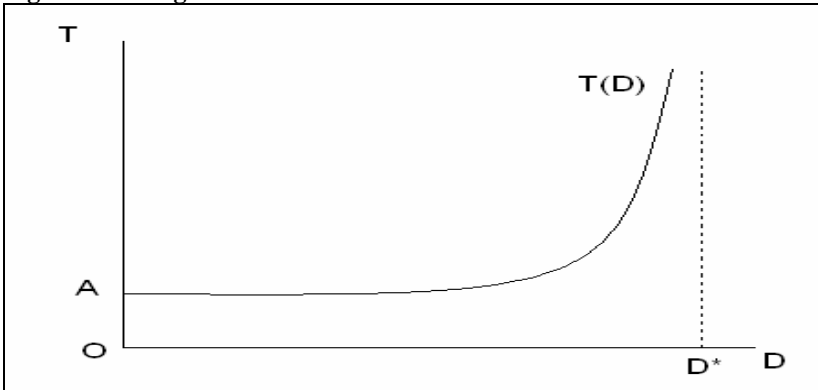
The Deterministic Model of Congestion

Capacity in a transport system can be illustrated by Figure 1. The 'deterministic model of congestion' (Vanags, 1977, as referenced in Brooks et al., 2002) treats the throughput of a port as if it were a flow and relates the output of the system to the cost of producing it⁴.

The three variables of the model are:

- q = rate of flow
- T = average time spent in the system
- D = average density of traffic in the system

⁴ The costs, in this case, are time costs

Figure 1. Vanags' Model

(Vanags, 1977, as referenced in Brooks et al., 2002).

OA is the time spent in the system under perfect conditions, i.e. when density is zero or very low. As density increases, T increases. D^* is the system's maximum physical capacity, and as D tends towards D^* , T increases without bound.

Ireland has approximately 30 ports, yet 80 per cent of trade flows through just four key ports, namely Dublin, Cork, Shannon and Rosslare (Mangan and Hannigan, 2000). In their Trade and Transport Study 2005/2006, the Irish Exporters Association warned that Ireland's ports are at risk of a capacity crisis as trade flourishes⁵. They believe port capacity, particularly at Dublin port, will literally run out sooner than expected⁶. Enda Connellan, chief executive of Dublin Port, has already been forced to turn customers away due to the capacity issues at the port (O'Brien, 2006). Both Irish Ferries and Stena Line predict growth rates of about 5 per cent for their freight service this year, a strong pace that will only intensify capacity dilemmas. IBEC's transport director, Reg McCabe, has also stressed the likelihood of "bottlenecks in the Republic's ports, which are struggling to handle record freight volumes" (McCall, 2006:24). This has been echoed by The Economist Intelligence Unit in their Country Profile (2006). Independent research conducted by Baxter Eadie Ltd. and ORM Consulting in 1998 and 2000 produced results reiterating this problem, specifying that key ports would experience major shortfalls (as referenced in Department of Communications, Marine and Natural Resources, 2005).

⁵ Total volume of international trade (imports and exports) is increasing by approximately 10 per cent

⁶ i.e. capacity at Dublin Port is tending towards D^*

The Future of Exports, Ports and Economic Performance

If Irish exports are to follow the global incremental trend, the capacity issue needs to be addressed immediately and resolved adequately, otherwise our international competitive position will be jeopardised. A capacity crisis will essentially increase the cost of doing business, thereby reducing productivity, efficiency and economic vitality. We are essentially victims of our own success, and the capacity problem is an urgent matter of concern if Ireland is to progress into the next economic era successfully.

Hindsight may allow us to determine the future stance of congested ports. When tackling the capacity problems, reflecting on history and preceding trends is a valuable exercise as it can potentially steer us from errors in the future (Baker, 1999).

Transport Standards and Economic Performance

Higher living standards typically persuade heavy investment in transportation (Fromm, 1969). In Ireland, this was first witnessed in the 1950s as the country realised it had an under-developed transport system in conjunction with a developing economy. This led to the formation of the Industrial Development Agency (IDA) and other semi-state bodies that encouraged industrial growth. Ireland now experiences vibrant economic growth alongside insufficient investment in transport, resulting in congested facilities, bottlenecks and capacity problems around the country.

Some Additional Considerations

As Cole (2005) reminds us, a high quality transport system and more efficient and competitive ports, cannot in isolation guarantee future spells of economic growth⁷. In addition, the amplitude of economic fluctuations of recent times actually appears to have diminished in magnitude (McAleese, 2004).

Nevertheless, with globalisation, more countries are joining the World Trade Organisation, businesses are increasingly adopting 'just-in-

⁷ Ireland currently suffers from high inflation reflected in astronomical house prices and escalating household debt, social problems such as increasing crime rates and a widening gap between the rich and the poor, and an inadequate health service, all of which may also restrain economic progression.

time' practices (Gordon, 1991) and consumers are becoming wealthier. There is substantial and sustainable demand for port services, the nature of which inspires economic growth. In reality, recent rapid economic growth is putting severe pressure and strain on infrastructure. The actual effects a downturn, however subtle today, could still have detrimental consequences (McAleese, 2004; Baker, 1999).

Resolutions: Implemented and Proposed

Ports Policy Statement 2005

Given the importance of the ports to the economy, the Irish Government launched the 2005 Ports Policy Statement which acknowledges the capacity concerns and proposes to encourage the following:

1. Private sector investment and involvement in the state owned ports in an attempt to enact the desirable 'landlord' model.⁸
2. Healthy competition within and between ports.
3. Mergers where plausible.
4. A more integrated transport system to facilitate the ports in linking sea and land transport.
5. Increased consultation and negotiation between port stakeholders and the Department of Communications, Marine and Natural Resources and the Department of Transport.

However, the IEA has expressed scepticism towards the Government's 2005 statement due to long lead times that are to be expected with development programmes.

Alexandra Road Extension

The Dublin Port Company has tried to relieve its capacity problems by applying to develop a 21-hectare site, namely the Alexandra Road Extension. However, the project has been plagued by delays in issuing the necessary licence, effectively adding insult to injury (The Irish Exporters Association, 2005).

⁸ A mix of public and private ownership and operation (Department of Transport, 2005)

Containerisation

In retrospect, containerisation has been one of the most influential advancements for the maritime industry. It has revolutionised the operation of ports by reducing transfer times, damage, theft, labour costs, administration and paperwork, and also increasing handling abilities and scale economies (Kraft et al., 1971).

Ro-Ro, Lo-Lo, Speed and Capacity

Ro-Ro (Roll-on, Roll-off) and Lo-Lo (Lift-on, Lift-off) technologies, as well as increases in ship capacity and shipping speed, are other innovations that have advantageously influenced the maritime industry.

Bremore

In order to overcome the capacity problems at the ports today, perhaps a more radical and dramatic step is required. The Progressive Democrats (PDs) have an ambitious solution – relocate Dublin Port to Bremore (Logue, 2006). The proposed project, titled *A New Heart for Dublin*, could generate many benefits for Dublin Port, Dublin city, its commuters and the economy as a whole. At its new Bremore site, Dublin Port would benefit from:

1. A site capable of significant expansion.
2. Deepwater port facilities.

Larger modern vessels require sufficiently dredged facilities to promptly manoeuvre in and out of ports. The optimal ship size is defined at the point where cost per ton, at sea and in port, is at a minimum (Jansson and Shneerson, 1982, as referenced in Brooks et al., 2002). Deciphering the optimal ship size is an important and rational economic task for ship owners and port operators alike. The Bremore Port claims to have the ability to accommodate these larger vessels.

Excellent transport links such as the M1 and the nearby Dublin-Belfast rail line and M50. These inland connections are crucial to the swift flow of traffic from sea to land and vice versa⁹. Landward infrastructure, in effect, extends and assists the services a busy port provides. Ports benefit greatly from multi-modal transport combinations. Meanwhile, the current

⁹ Ireland's largest ever infrastructure project developed from the importance of hinterland to a port. The Dublin Port Tunnel, which opened to traffic on the 20th of December 2006, was a Government initiative aiming to improve the commute from Dublin Port to the major motorways and surrounding hinterland, and vice versa, to reduce traffic congestion in Dublin's city centre. The Dublin Port Tunnel effectively acts as an ancillary service, enhancing Dublin Port's overall service provision.

site of Dublin Port would be transformed into a ‘Manhattan-style skyline’ (Logue, 2006:26) and would be redeveloped for valuable residential, commercial and recreational purposes.

The PDs’ suggestion has received support from the Taoiseach (Logue, 2006), Dublin Transport Office, Irish Road Hauliers’ Association, Chambers of Commerce of Ireland, Dublin Docklands Development Authority and Dublin City Centre Business Association.

A New Heart For Dublin also has its opponents, such as the Minister for Communications, Marine and Natural Resources, Pat ‘The Cope’ Gallagher, who has no intentions to relocate Dublin Port, and IBEC’s transport director, Reg McCabe, who believes the move would be “an almighty risk” (Logue, 2006:26).

The Bremore proposal: Costs and Benefits

Any investment in transport should ideally be accompanied by and based on the results of a thorough cost benefit analysis. It is common to see infrastructure projects run over budget and over time, as was the case with the highly anticipated Dublin Port Tunnel for example. Given the significant role of Dublin Port in the economy, and its strategically attractive location at the hub of economic activity, deems the Bremore move the perfect candidate for extensive cost benefit analysis.

Costs

The costs of such a project would no doubt be immense. Notwithstanding that, the social costs must be considered via shadow prices which adjust the market by including factors such as:

1. Devaluation of residential property at Bremore, and the nearby Balbriggan, as a new port arrives on their doorstep.
2. A build-up of traffic at Bremore and surrounding areas. Dublin’s road congestion problems, namely trucks clogging up the city centre streets due to business at Dublin Port, will be transferred to Bremore as a result of the port’s relocation.
3. The Dublin Port Tunnel will become obsolete as its main focus. The trucks who commute to and from Dublin Port would now operate primarily out of Bremore.

4. The immense inconveniences due to construction and diversions over the estimated 20 years it will take to complete the relocation.
5. The possibility that the port at Bremore could face premature obsolescence if it does not thoroughly consider the future potential of ship size development and thus cannot accommodate an increase in the future.

Benefits

Despite these costs, both social and monetary, the benefits to be sought from this large deepwater port are very appealing and potentially revolutionary. In some respects, the move to Bremore is just what Dublin Port and the Irish economy require. As the IEA and many others have expressed, the lack of adequate capacity at key ports will be the biggest challenge for the export industry in the short to medium term. The Bremore proposal would, undeniably, be a huge scale project carrying a lot of risk and expense. Equally, it could prove to be Dublin Port's saviour and the perfect stepping stone towards economic prosperity and competitiveness.

Conclusion

The key ports around Ireland play a fundamental role in the conduct and accomplishments of the Irish economy. They handle a significant and increasing proportion of the volume of trade travelling by sea. Given their record performance in recent years alongside the Celtic Tiger economy, the ports have now realised a capacity crisis. Their amenities are being so intensively utilised today in response to a dynamic economy that they may struggle to perform in the future.

Kondratieff explored the notion of cycles and fluctuations in business and economics. Schumpeter¹⁰ added to his discoveries with theories of innovation. In order to nurture and sustain the future of ports, especially the most congested, Dublin Port, radical innovation is required. Remedies such as the Ports Policy Statement 2005 and the Alexandra Road Extension are rife with typical planning delays and long lead times. Past inventions in the maritime sector such as containerisation, Ro-Ro and Lo-Lo, have been

¹⁰ Joseph Schumpeter, an Austrian economist. His famous theory of innovation and entrepreneurship can be found in his 1939 *Business Cycles*, in which he builds on Kondratieff's waves of economic growth by hinting that 'clusters' of innovations spark long term economic growth.

beneficial but new issues need to be addressed. I conclude that the PD's Bremore proposal has much appeal. In relation to Kondratieff and Schumpeter, it may prove to be the right innovative ingredient to see the ports and the Irish economy exist prosperously and successfully in the next stage of the economic cycle.

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