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The Channel Tunnel: transport patterns and regional impacts

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ABSTRACT

Since its opening in 1994 the Channel Tunnel has become a key element in the transport infrastructure linking Britain and continental Europe. But, as well as forming part of the Trans-European Rail Network, the Channel Tunnel was also seen as a potential stimulus to trans-frontier collaboration and as a possible catalyst for regional economic development. The aim of the paper is to evaluate the regional impacts of the Tunnel within the Anglo-French frontier zone on both sides of the English Channel. Although millions of passengers travel through the Tunnel every year, numbers have failed to reach the forecast levels and the overall benefits are fewer than had been anticipated. The English Channel still represents a psychological barrier (partly due to language differences) and the frontier zone has failed to develop as an integrated labour market. Moreover, the findings suggest that the Channel Tunnel has only had a limited impact on the spatial economy of the trans-frontier zone in Kent and Nord-Pas-de-Calais. While Ashford has undoubtedly gained from its high-speed rail connection, the greatest impacts have occurred in metropolitan regions further from the Tunnel, including Lille and East London.

1. Introduction

The first serious proposals to construct a rail tunnel between England and France date from the 1850s. During the 1870s, the Channel Tunnel concept was enthusiastically promoted by Edward Watkin, the chairman of the South Eastern Railway, and pilot tunnels extending almost 2 km from the English and French coasts were excavated in the early 1880s. But military objections on the British side proved to be an insurmountable obstacle and political factors were again largely responsible for the abandonment of the project after further preliminary work between 1973 and 1975 (Gibb, 1994). A firm decision to build a fixed link between England and France was finally taken in 1986 and various designs were submitted, including proposals for a bridge and for a drive-through tunnel. The rail tunnel submission by Transmanche Link (TML) was in due course adopted and a 55-year concession (subsequently extended until 2086) was awarded to TML and its close associate Eurotunnel, the company which would manage and profit from the Tunnel on completion. The Channel Tunnel opened in 1994 and represents a remarkable feat of civil engineering: its overall length exceeds 50 km, of which 37.9 km are in the submarine section.

By the end of 2012, over 280 million passengers had travelled through the Tunnel, either on the vehicle shuttle service (*le Shuttle*) between Folkestone and Calais (Coquelles) or on the *Eurostar* passenger service. This provides frequent daily connections between London, Paris and Brussels, with intermediate stops at stations such as Ashford, Calais (Fréthun) and Lille. Following the completion of the final section of the Channel Tunnel Rail Link (later renamed High Speed 1) to St Pancras International in 2007, there is now a direct rail connection between London and Brussels in 2 h and between London and Paris in 2 h 15 min. *Eurostar* also operates a direct service from the UK to Marne la Vallée – Chessy (Disneyland Paris) and a limited winter service to Moutiers and Bourg St. Maurice in the French Alps as well as a restricted summer service to Avignon (Fig. 1). *Eurostar* also plans to expand its provision to include other West European destinations such as Cologne and Frankfurt (Odell, 2012).

The Channel Tunnel has substantially increased the total capacity of the cross-Channel transport system. But it is just one element in a mixed economy, operating in competition with the ferries and airlines. Between 1994 and 2012, the number of cross-Channel passengers using the port of Dover fell by over 7 million and in 2012, the Channel Tunnel accounted for 62% of all cross-Channel passenger journeys through Kent (Table 1). This exceeds the initial estimate by Knowles (1994) that just 40% of Kent's ferry traffic would be diverted to the Tunnel. The *Eurostar service* has also competed very successfully with the airlines on the London-Paris and London-Brussels routes. By 2010, its market share exceeded 80% (Eurotunnel, 2011), again exceeding Knowles' (1994) estimate that the Tunnel would capture 50% of the market on these routes. But although the Channel Tunnel has steadily increased its share of the cross-Channel market, total passenger numbers have failed to

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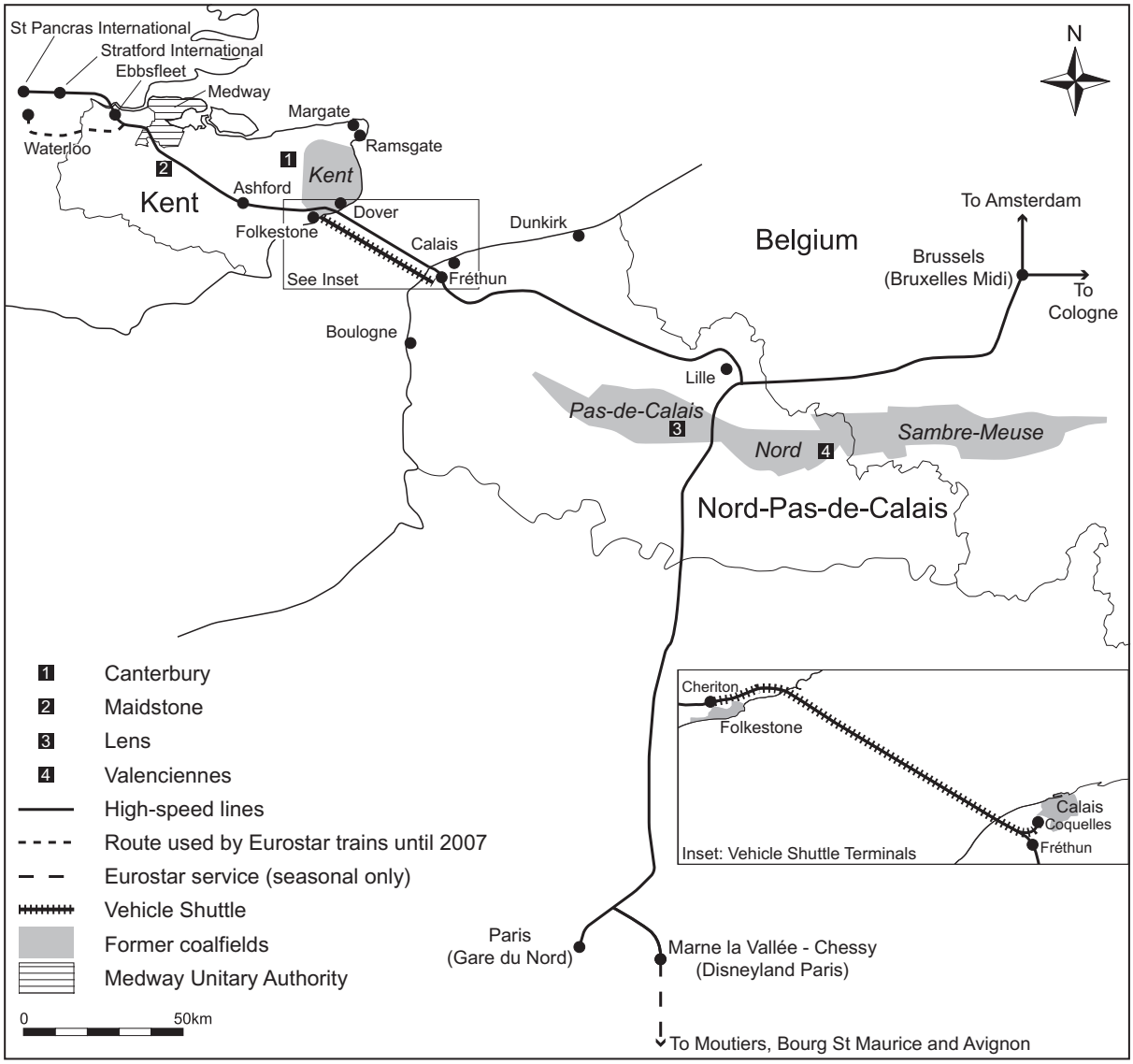

Fig. 1. The Channel Tunnel and the *Eurostar* rail network The figure locates Kent and Nord-Pas-de-Calais in their regional setting. It shows rail passenger and vehicle shuttle connections via the Channel Tunnel and the international stations served by *Eurostar*.

match the optimistic forecasts made prior to its opening. In 1993, British Rail forecast that by the year 2000, there would be at least 19 million *Eurostar* passengers per year, while Eurotunnel's forecast was for 30.2 million *Eurostar* passengers by 2013 (Knowles, 1994). Yet, even in 2012, when *Eurostar* traffic was boosted by the London Olympics, total passenger numbers failed to reach 10 million. The Tunnel has also failed to displace the ferries in the freight sector. In 2010 there were 190 goods vehicle movements through the port of Dover for every 100 via the Channel Tunnel (Table 1) and fewer than six through freight trains used the Channel Tunnel per day (Eurotunnel, 2011) – well below the pre-Tunnel forecast of 35 through freight trains per day within four years of opening (Spencer and Browne, 1994.).

As Flyvbjerg (2008) has shown, it is almost impossible to make reliable traffic forecasts for new transport infrastructure. In the case of the Channel Tunnel, one unforeseen factor was the continuation until 1999 of duty-free sales on international ferries and aircraft journeys within the European Union (though not on rail services), thereby offering a substantial subsidy to the Channel Tunnel's competitors (Knowles 1994). The expansion of low-cost airlines (following full de-regulation of air travel within the European Union in 1997) also marked a fundamental change in the travel market. In 1994, 69.7% of all foreign travel by UK residents was by air and 30.3% by sea. But by 2005, the airlines accounted for 80.7% of foreign travel by UK residents compared with 12.2% by sea and just 7.1% through the Channel Tunnel (Office for National Statistics, 2010a). The delay in the completion of the Channel Tunnel Rail Link also weakened the Tunnel's competitive position, as the potential time savings of high-speed rail were not fully realised until 2007. Moreover, the proposed through passenger services between the British regions and the Channel Tunnel failed to materialise. This was due in part to technical obstacles including the incomplete electrification of the British rail network. But economic considerations were also a factor as the proposed regional rail services could not compete with low-cost airlines offering faster journeys to mainland Europe at lower cost (Knowles and Farrington, 1998). This is yet another reason why the Tunnel failed to meet its traffic forecasts, as British Rail had estimated that 27% of the potential demand for Channel Tunnel rail services in the first year of operation would originate in the rest of the UK, beyond London and the South East (Knowles, 1994).