

# **Crossrail - Costs of Delay**

Prepared in association with



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# Crossrail - Costs of Delay

## Initial Report

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<b>Contents</b>	<i>Page</i>
<b>1. INTRODUCTION</b>	<b>1</b>
1.1 Overview and Summary	1
<b>2. COSTS OF DELAY</b>	<b>2</b>
2.1 Introduction	2
2.2 Impact on scheme costs	2
2.3 Planning Blight	3
2.4 Transport Blight	6
2.5 Loss of Agglomeration Benefits	6
2.6 Loss of User Benefits	7
<b>3. THE BIGGER PICTURE: LONDON'S GLOBAL ROLE</b>	<b>8</b>
3.1 World Cities	8
3.2 The Rise and Fall of Cities	11
<b>4. CONCLUSIONS</b>	<b>13</b>
4.1 Conclusions	13
<b>APPENDIX A</b>	<b>14</b>
FTSE Listed companies in sub sectors: Banks, Real Estate and Publishing	14
25 Largest UK Law Firms	15
40 Investment Banks	16

# 1. Introduction

## 1.1 Overview and Summary

- 1.1.1 Crossrail has been under consideration for many years. Brunel initially proposed an underground route linking mainline services across London in the 1840's and Crossrail has been reported on and recommended by a series of studies since the late 1970's. There have been numerous attempts to get Crossrail approved, funded and implemented. The latest one has now reached the Hybrid Bill stage, which would finally make it possible to implement the scheme. However, no funding has yet been agreed to implement Crossrail and there remains concern that the power to construct the railway will not be matched by the finance to do so.
- 1.1.2 The purpose of this document is to illustrate that delaying the scheme by not providing funds itself raises the total costs of the project and indeed risks the future of other investments in London. Delaying the decision is not a cost-free alternative.
- 1.1.3 A number of different costs of delay are identified and where possible have values placed on them. Some of these are necessarily indicative estimates and many are not to the same level of detail as would be required for the scheme appraisal. In interpreting these values it should be borne in mind that they represent our best estimate, but one that is within a wide range. It has not been possible within the time available to undertake any proper risk analysis.
- 1.1.4 The costs of delay have been grouped into a number of categories:
- Permanent Losses – comprising increases in scheme costs and planning and transport blight
  - Semi-permanent losses – comprising the reductions in agglomeration benefits; and,
  - Delayed benefits – comprising user benefits and other direct impacts of Crossrail
- 1.1.5 Chapter 2 describes the impacts of delay under the three categories listed above. It shows that a years delay in the implementation of Crossrail incurs costs of more than £1.5bn across the categories listed above.
- 1.1.6 Chapter 3 proceeds to a wider discussion of both the future role of London in the world economy, and the implications for the delayed implementation of Crossrail.
- 1.1.7 Chapter 4 then sets out our initial conclusions.

## 2. Costs of Delay

### 2.1 Introduction

2.1.1 The costs of delay are summarised in this chapter with further details provided subsequently. The costs are split into a number of sections:

- 2.2 considers the hard financial costs of delaying Crossrail
- 2.3 looks at the ongoing costs of planning blight, what developments are prevented from proceeding until Crossrail is completed (or scrapped)
- 2.4 considers transport blight, what projects or improvements are blighted by Crossrail
- 2.5 looks at the costs of delay on central London economic growth, both in the short and medium term
- 2.6 looks at the extent of user benefits that would be delayed by such a decision.

### 2.2 Impact on scheme costs

2.2.1 Every one year delay to scheme implementation increases the scheme costs in real terms due to expected price inflation within the construction sector at a faster rate than in the economy as a whole. In addition changes over time in the relevant design standards and legislation further raise the cost.

2.2.2 In 1980 an equivalent scheme to Crossrail (but Victoria to Euston) was costed at £330m (1980 prices). By the time of the Central London Rail Study the cost had increased to £1.4 billion (1990 prices). In 1994 the cost had risen to £1.55 billion, and by 2004 had risen again to about £10 billion (including a large allowance for “optimism bias”).

2.2.3 CLRL’s best estimate at the moment is that without allowing for any changes to legislation or design standards the cost of the project rises by some 3% in real terms every year, so £300m per annum. In addition any substantial delay (more than a year) would require a major re-engineering exercise potentially costing in excess of £100m.

2.2.4 Each year of delay therefore significantly increases the costs of implementation. The table below shows two scenarios. In the first, construction costs rise 2% faster than general inflation and in the second, they rise 4% faster, in both cases inflation is assumed to run at 2.5% per annum.

**Table 2.1: Crossrail capital cost forecasts**

Scenario	Point Estimate + Contingency 1Q02	Inflation at 2.5% RPI + 2% extra over	Inflation at 2.5% RPI + 4% extra over
Base Case	9,380	15,770	17,847
1 year delay	9,450 = 9,380 + 70	16,567	19,097
5 year delay	9,605 = 9,380 + 225	19,975	24,809

2.2.5 Table 2.1 shows three costs for each scenario. The first is the cost in 2002 prices, the second is the cost in nominal prices allowing for 2.5% inflation each year and a 2% construction cost inflation on top of the RPI. The third column is the same as the second but with 4% as the construction cost inflation premium.

- 2.2.6 The Base Case is the current cost estimate of £9,380m, made in Quarter 1 2002. This is made up of £7,030m as the best estimate of costs, with £2,350 (33.4%) contingency on a cashflow basis using the Target Programme. Core and Branch extensions are assumed to start in 2008 and operations start in 2016.
- 2.2.7 For the 1 year delay scenario, the Base Case cashflows have been shifted one year into the future and an additional cost of £70m (1Q02 including contingency) added to the Core Indirect Costs for FY2008/09.
- 2.2.8 For the 5 year delay scenario, the Base Case has been shifted five years into the future, and additional costs of 40+1+1+1+182 = £225m (1Q02 including contingency) have been added to the Core Indirect Costs for FY2008/09 through FY2012/13. The initial £40m is for a rapid shut-down of the project followed by 3 years of tick-over and final year to bring the project back up to full speed.
- 2.2.9 Each of the scenarios has then been escalated using the appropriate inflators, first with an assumption of RPI+2%, and second with RPI+4%.
- 2.2.10 A five year delay essentially doubles the cash costs of the scheme, even at the more limited inflation rate of 2%. Moreover, these costs assume that a delay does not affect in any way the details of the project and its engineering. In practice, this is unlikely. New technology, new standards and new regulation emerge all the time. Any delay significantly increases the risk of required redesign requiring additional costs of construction.

## 2.3 Planning Blight

- 2.3.1 The safeguarding of the Crossrail route, essential if the scheme is to be implemented is not cost-free. It imposes constraints on developments along the route as a whole which have to make adjustments to their design to accommodate the future implementation of Crossrail, but in general those adjustments are relatively cheap to make and do not unduly delay developments.
- 2.3.2 In the case of the sites which will be used as Crossrail worksites the situation is different. Here developments cannot take place until after Crossrail has been implemented (or after the government has said that Crossrail will definitely not happen). There are a number of sites affected.

### ***Bond Street Worksites (Window C4)***

- 2.3.3 Planning permission exists for the redevelopment of 18-19 Hanover Square for an office scheme on seven floors with ground floor retail facilities. Planning permission exists for various alterations to the building as part of a refurbishment that is under construction. There is an undetermined planning application for an additional storey.
- 2.3.4 The development cannot precede Crossrail (development based around Crossrail's basement ticket hall from previous scheme)

### ***Tottenham Court Road Worksites (Window C5)***

- 2.3.5 There are no significant extant planning permissions for development in this location. However, there are proposals for a number of major redevelopments in the area.

- 2.3.6 Consolidated Land intends to develop the Tottenham Court Road site added in AP3 (the third Amendment of Provisions to the Crossrail Bill). No application has yet been submitted. The AP allows Consolidated to develop above the escalator box. The development cannot precede Crossrail.

***Fisher Street Worksite (Window C5)***

- 2.3.7 The London Borough of Camden has previously approved proposals for the demolition of the buildings on this site and the retention of the façade of the listed building at 8-10 Southampton Row.
- 2.3.8 Although at present there are no extant permissions, this is probably because the building has been proposed for use as a site for a vent shaft since the previous Crossrail scheme.

***Farringdon Western Ticket Hall Worksite (Route Window C6)***

- 2.3.9 In May 2004, London Borough of Islington resolved to grant planning permission, subject to the completion of a Section 106 Agreement, for the redevelopment of the Caxton House site, adjacent and including parts of the Cardinal House worksite. This proposal comprises an office development of part eleven, part eight storeys with retail and food and drink uses at street level. The proposal has been designed to accommodate Crossrail and there are a number of conditions on the draft permission to ensure that the implementation of this scheme does not prejudice Crossrail.
- 2.3.10 Conditions attached to the permission by Crossrail have not yet been discharged but Crossrail is not causing a delay. However, in part the delay in proceeding is likely to be as a result of uncertainty about whether Crossrail and Thameslink will proceed.

***Liverpool Street West Ticket Hall Worksite (Route Window C7)***

- 2.3.11 In this location, planning permission already exists for replacement development above the Crossrail ticket hall at 91-109 Moorgate/12-24 Moorfields. Permission was granted in 1999, and renewed on behalf of CLRL in 2004, for a seven storey building to accommodate 265 sq.metres of retail floorspace and 6,568 sq. metres of office floorspace.
- 2.3.12 The development cannot precede Crossrail as it is based around a Crossrail basement ticket hall

***Hertsmere Road Shaft (Window C11)***

- 2.3.13 Planning permission was granted in 2004 for the redevelopment of Hertsmere House for a 63 storey mixed use tower. This development, known as Columbus Tower comprises offices, hotel, serviced apartments, retail and leisure.
- 2.3.14 Conditions attached to the permission by Crossrail have not yet been discharged - Crossrail is working with the developer to finalize the foundation design of Columbus Tower. This process will not greatly delay the development.

**Isle of Dogs Station Worksite (Window C11)**

- 2.3.15 In March 2003, a planning application was submitted on the North Quay site for a substantial development that, if granted, would extend the financial and business district of Canary Wharf. The application comprises 377,984 sq. metres of office with ancillary retail uses. This remains undetermined.
- 2.3.16 There are other proposals in the wider area for substantial development including Wood Wharf, which is estimated to be capable of accommodating over 250,000 sq. metres of offices and housing.
- 2.3.17 Neither development can precede Crossrail.

**Blackwall Way Shaft Worksite (Window Se1)**

- 2.3.18 A full planning application has been submitted for a major residential led mixed use development on the car park site. This development comprises 716 units, together with retail, food and drink, offices and leisure uses, primarily at ground floor. The area required for the intervention shaft is shown on the submitted plans as conservation landscape buffer integrated with a children's play space. This application is broadly supported by the Mayor.
- 2.3.19 Implementation of the permission is independent of Crossrail.

**Table 2.2: Affected Developments**

Name of Site	Proposed Development Gross Floor Area (Sq.m)
Bond Street Station *	15,000
Tottenham Court Road	32,000
Fisher Street *	10,000
Farringdon Western Ticket Hall	16,000
Liverpool Street West Ticket Hall	7,000
Hertsmere Road Shaft	93,000
Isle of Dogs **	650,000
<b>Total GFA</b>	<b>823,000</b>
** : The total GFA may be higher than the figure used in the above calculations	
*: For these worksites, the only consideration used is a 10% value appreciation on the existing structure for which a redevelopment is being proposed	

**The cost of Crossrail delays on property developments**

- 2.3.20 It is not straightforward to value the cost of delaying these developments. The cost really depends on what alternative property developments are available and whether they are equally appropriate uses of funds. It is possible however to conclude that:
  - There is some 800,000 square metres of development space currently being delayed by Crossrail;
  - That space could reasonably accommodate some 50,000 jobs, a significant number;
  - The total value of the developments delayed by Crossrail is likely to be in excess of £8 billion (assuming an average value of £10,000 per square metre) with an annual rental income of £400 million (assuming a 5% yield).



## 2.4 Transport Blight

- 2.4.1 It is not just development schemes that are affected by delays to the implementation of Crossrail, there are also a number of transport projects that would benefit from a rapid decision. These projects include:
- Planned works by LUL at Tottenham Court Road station would be cheaper if they could share the Astoria worksite with Crossrail;
  - Planned works at Whitechapel to be undertaken by Metronet might require compensation if Crossrail is delayed;
  - Crossrail plans to do works at Whitechapel during the closure for ELLX, but if the scheme was delayed those advance works (and consequential cost savings) might not happen
  - The proposed electrification, platform extensions and signalling works by Crossrail may be deferring other planned improvements to those lines;
  - Delaying the congestion relief benefits derived from Crossrail may be encouraging other schemes on either stations or rail services to go ahead even though their benefits would be reduced by Crossrail.
- 2.4.2 It is not possible to place a value on these issues at the present time, but it is clear that clarity on the position of Crossrail would result in better investment decisions being taken across a range of transport proposals.
- 2.4.3 More detailed assessment would be necessary to value the potential savings.

## 2.5 Loss of Agglomeration Benefits

- 2.5.1 One of Crossrail's key objectives is to enable growth within the key employment clusters of central London. This expansion benefits the UK both in enabling individuals to access more productive jobs and also in increasing the overall productivity of central London as the central business district expands. The economic gain to the UK from enabling that growth has been quantified and valued within the appraisal of agglomeration benefits. These calculations have used the procedures developed by CLRL and adopted by the Department for Transport.
- 2.5.2 The loss of benefits can be shown simply as the benefits incorporated into the wider economic benefits within the scheme appraisal. The estimates below are based on the estimates included in the current scheme appraisal. These are currently being reviewed.

**Table 2.3: Loss of Agglomeration Benefits (GDP)**

	Undiscounted (£m)
One year delay	£185m
Five year delay	£1,421m

- 2.5.3 The agglomeration benefits are clearly very important to the case for Crossrail, but there is also a potentially significant difference between them and the transport user benefits. That difference concerns whether these benefits are simply delayed or whether they are permanently lost. The London Plan shows rapid growth in Finance and Business Services (FBS) up until 2026, but currently no growth is included beyond that date. If Crossrail is delayed there

are then issues about whether the growth that was constrained before the implementation of Crossrail will then take place after Crossrail is built or not.

- 2.5.4 If there is a one-off opportunity to capture that employment growth then the loss would not be a temporary loss over one or five years but a permanent one. That would significantly increase the cost of delay. This issue is discussed further in Chapter 3.

## 2.6 Loss of User Benefits

- 2.6.1 Each year that Crossrail is delayed results in a further year of slower and more congested journeys for public transport users in London than would otherwise be the case. Crossrail's impact on travel within London is widespread and extends well beyond users of Crossrail itself. Congestion relief is provided to most underground lines, reductions in interchange movements relieve station congestion, extra capacity provided at new stations serves to relieve some of the worst crowded stations on the system and additional platform capacity is provided at Liverpool Street and Paddington.
- 2.6.2 The value of the lost benefits is available directly from the transport economic appraisal. It is shown both for a one year delay (loss of first year benefits) and a five year delay:

**Table 2.4: Loss of User Benefits**

	Undiscounted (£m)
One year delay	£768m
Five year delay	£4,144m

- 2.6.3 The loss of user benefits is therefore very significant, although it is of course offset by delaying the capital costs of Crossrail. The operating and maintenance costs of Crossrail are typically more than offset by the net increase in rail revenues, although that varies from year to year, so the saving is only the delayed capital expenditure.

## 3. The Bigger Picture: London's global role

### 3.1 World Cities

#### *London competes as a world city*

- 3.1.1 London's role as a world city is built upon its strong business links, cultural activities and lifestyle. While it is in a good position to continue to grow and develop, this dominance should not be taken for granted. Crossrail should be seen as an investment to secure London's continuing competitive status.
- 3.1.2 Considered in this way the risks of delaying the decision over crossrail are more pronounced. Delays may mean that London is unable to take advantage of opportunities which will not be available later, and which would help the city develop even further in future.

#### *Financial Services in London and New York*

- 3.1.3 A clear example of the issues facing the city is provided by the Financial Services sector. London is currently edging ahead of New York in leading the world in cutting edge financial services. However, companies, banks and employees can easily move to other cities if the conditions are favourable. There has therefore been a good deal of research<sup>1</sup> into understanding how these firms choose to locate and what effect policies have on their productivity.
- 3.1.4 Large shifts in employment between cities do happen. The Sarbanes Oxley legislation, which was introduced in the US to combat company fraud in the wake of the Enron scandal, has become a big deterrent to companies listing on the New York Stock Exchange. London has benefited hugely with both the number of public listings and employment growing in response. While financial sector employment fell by over 2,000 jobs between 2002 and 2005 in New York, it increased by 13,000 jobs in London.
- 3.1.5 As a result the New York authorities are increasingly concerned about its position. However, there is nothing embedded in the advantages which London is currently enjoying and the current experience of New York illustrates how easily a key position can be eroded.
- 3.1.6 A number of factors are important to CEOs of global companies<sup>2</sup>. These include the regulatory environment, the availability of skilled staff and the quality of life enjoyed by employees. These qualities are often self-reinforcing. The existence of large numbers of educated bankers draws more candidates to the City and helps ensure that they are well trained. Experienced regulators are able to improve the regulation they provide.
- 3.1.7 Self-reinforcement is one of the mechanisms that has enabled London to remain and develop as a pre-eminent global finance centre, and a reason why it is unlikely to lose this status quickly. However, it is also important to note that self-reinforcing cycles can become self-destructive cycles as circumstances change. Then companies moving away would lead to skilled workers moving which would in turn encourage more companies to move.

<sup>1</sup> "Sustaining New York's and the US's global financial leadership" McKinsey

<sup>2</sup> *ibid*

### ***The importance of Central London for different Sub Sectors***

- 3.1.8 Financial services is not the only sector that is competing for global business and for which a central location is of critical importance. Other important sectors are likely to be those for which a large number of clients, a large specialised workforce, and the presence of international firms are essential. For these firms London is competing with other World Cities. It is in these cities that it is most possible to reap the benefits of agglomeration – the effect of getting together.
- 3.1.9 Initial research<sup>3</sup> into the location of particular activities sheds more light on the location choices of different types of firm.
- 3.1.10 Of the 25 largest British law firms by turnover, all have large central London practices (of which all but 3 are the registered office). Further to this every one of the 25 largest Global law firms have offices in central London. Clearly for law, London is a very important market.
- 3.1.11 Of 40 large Investment Banks all but one is located in Central London, with the exception being based in Kent. 72% of Publishing and 75% of Real Estate Holding and Development firms listed on the FTSE are located in Inner London.
- 3.1.12 For other sub sectors locations are more spread across the country. Of the 9 FTSE listed commercial banks only four are Headquartered in London, with two in Edinburgh, and one each in Leicester, Bingley and New-castle-upon-Tyne. Many of these banks were formed from local building societies and the historic location seems to have remained very important to these businesses.
- 3.1.13 The costs of delay to different sectors are likely to vary depending on how important a central London location is to their business. For very sensitive sectors relocation to another world city appears more likely than simply relocation to elsewhere in London or Great Britain.
- 3.1.14 This means that jobs lost (or not gained) in London are lost to the UK as a whole. The confidence to maintain investment in London is thus a benefit to the whole country. That confidence requires trust that infrastructure will be fit for purpose and that public authorities will maintain its contribution to the city's investment.

### ***Crossrail's Role in Supporting Competitiveness***

- 3.1.15 Crossrail has many important contributions to make to London's competitiveness.
- Faster journeys — direct to Heathrow from the City, Isle of Dogs and the West End and also indirectly to Gatwick (via Farringdon) and Stansted (Liverpool Street);
  - Enabling growth by overcoming transport capacity constraints currently facing central London employers which would otherwise become increasingly severe; and,
  - Improving the quality of the travelling environment for Crossrail users but also for millions of other rail users through reduced on-train congestion and the provision of new large stations

<sup>3</sup> See Appendix A for a list of the companies and their locations

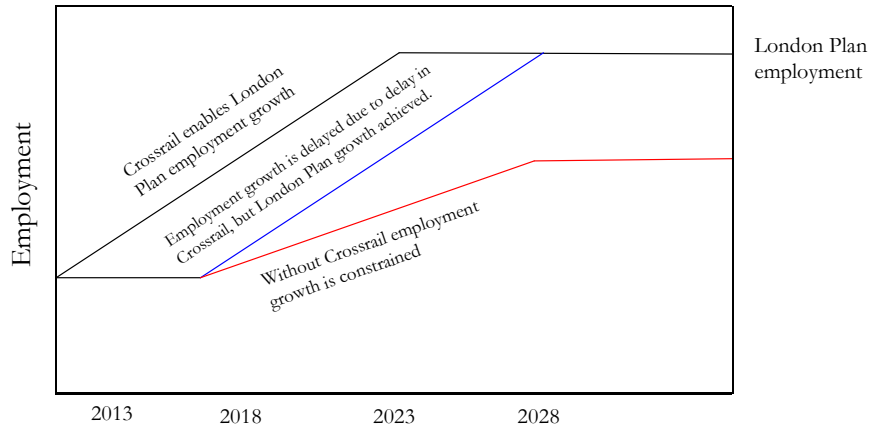
- 3.1.16 It therefore supports both the expansion of the labour market, access to client and supplier markets, and improvements in quality of life. These are the key factors for location decisions.
- 3.1.17 HM Treasury's 2006 report 'Financial Services in London: Global Opportunities and Challenges', acknowledged the importance of quality of life issues.
- "The quality of the living and working environment is a significant factor affecting the location decisions of international financial services firms. According to a 2005 survey on London's competitiveness for the Corporation of London, London ranked behind Paris, almost level with New York, and well ahead of Frankfurt on quality of life measures. London is a dynamic and diverse city, and unquestionably one of the world's most creative capitals. However the Government recognises that there has been historic underinvestment in aspects of the capital's infrastructure and, to help improve quality of life, it is increasing investment in the UK's transport system and tackling a historic UK weakness by addressing longstanding imbalances in the housing market."<sup>4</sup>
- 3.1.18 This point was also made in the report "Four world cities: a comparative study of London, Paris, New York and Tokyo" which was commissioned by the now Department for Communities and Local Government.
- "This depends partly on forces beyond London's control, and partly on how London positions itself to take advantage of the opportunities of the future. Government needs to maintain the right economic climate for business and trade to prosper, and encourage investment in public transport, the environment and flagship facilities and attractions to accommodate and entertain the international businessperson and tourist of the future."

### ***Growth Paths for London***

- 3.1.19 Overall London competes with other world cities for the location of global firms. What is the impact of a delay to Crossrail likely to be for these companies?
- 3.1.20 As congestion increases business relocation and expansion is likely to be displaced to other cities. In the long term this would lead to the strengthening of these other locations relative to London, due to the increased size of their labour and client market. They would then be in a better position to attract even more jobs away from London.
- 3.1.21 The ability to recoup these jobs once capacity constraints are relaxed due to the opening of Crossrail depends on the relative strength of the other employment centres, and the timeframe over which location decisions are made. In particular it takes time to establish offices and it is likely that some opportunities will simply be missed.
- 3.1.22 The impact of the Sarbanes Oxley legislation shows how closely tied New York and London are in the competition for financial services jobs, and how quickly jobs can move between the two cities. However we do not yet know how easily New York will recoup this employment if its regulation is changed for the better.
- 3.1.23 Within the analysis we have assumed that the employment growth made possible by building Crossrail will be available whenever it is implemented. This is illustrated in Figure 3.1, which shows the possible growth paths for London, until the end of London Plan employment forecasts in 2027.

<sup>4</sup> Financial Services in London: Global Opportunities and Challenges: Section 3

**Figure 3.1 Possible growth paths for London to 2028**



- 3.1.24 Beyond 2028 the effect of delays to Crossrail may become more pronounced. Firstly because London's further growth will be enabled or constrained by the transport system. Secondly because current growth leads to future growth. A significant loss of competitive position now could see London lose its lead in its global services, and miss out on even more opportunities later. Even if other possibilities emerge for future investment, the risk is that a loss of confidence in UK's willingness to invest in the infrastructure to support growth and employment could undermine the future of London as a core world city.
- 3.1.25 The 'loss of competitive situation' scenario represents a worse case situation, in which the costs of delay become very large.
- 3.1.26 In summary, capacity constraints are likely to reduce employment growth in London. Companies that relocate elsewhere due to these constraints will strengthen other cities compared to London, damaging our future competitiveness.
- 3.1.27 Additional delays make it more likely there will be significant missed opportunities, rather than simply delays to growth.

### **3.2 The Rise and Fall of Cities**

- 3.2.1 While we do not expect that London will 'fall from grace' for businesses in the very near future, there are significant historical precedents for the decline of leading cities.
- 3.2.2 A recent article in Nature magazine by Professor Michael Batty entitled 'Rank Clocks' showed data on the rise and fall of the largest US cities since the 1790s and global cities since 200 BC.
- 3.2.3 The US cities data shows the population of the top 100 metropolitan areas at every census. New York city has remained dominant since the records began. Complacency however is unwise, as the rise and fall of other cities, and the periods of stagnation and decline in New York city itself has shown.
- 3.2.4 The most dramatic declines between 1950 and 1990 have been primarily in large North-western 'rustbelt' cities:

**Table 3.1: City and Urban Area Populations 1990, 6 of the largest US cities**

City	1950	1990	change 1950 to 1990
St Louis city, MO	856,796	396,685	-54%
Pittsburgh city, PA	676,806	369,879	-45%
Cleveland city, OH	914,808	505,616	-45%
Detroit city, MI	1,849,568	1,027,974	-44%
Buffalo city, NY	580,132	328,123	-43%
Newark city, NJ	438,776	275,221	-37%
Rochester city, NY	332,488	231,636	-30%

- 3.2.5 Many of these cities (in particular Detroit, Pittsburgh and Buffalo) were founded on heavy industries and, in particular, the manufacture of automobiles. Global competition saw these industries losing their competitiveness with urban decline as the result. This is not because their products ceased to be in demand, but rather because other cities in other countries became more important producers. In recent years many of these cities have been undergoing large redevelopment and restructuring programs which is beginning to enable a change back to growth.
- 3.2.6 This issue is more dramatically illustrated in records of cities dating back to the ancient world. Babylon, Rome and Constantinople were at some times pre-eminent capitals of vast civilisations. Time and tides have dramatically changed each one's role and position in the world.
- 3.2.7 The lesson is that current dominance does not guarantee future success, and that cities should be aware that it is possible for tables to turn.

## 4. Conclusions

### 4.1 Conclusions

- 4.1.1 Delay is not a cost-free option, and this report has attempted to identify their scale and nature. Delay means:
- That project costs increase;
  - That user and wider economic benefits are lost; and,
  - That potential developments or improvements are delayed.
- 4.1.2 This report suggests that each year delay will result in:
- An increase in scheme costs by £300m or more;
  - A loss of user benefits of circa £800m; and,
  - A loss of wider economic benefits of circa £200m (and rising)
  - A loss of £400m in yield on the delayed property investments.
- 4.1.3 The central estimate for total costs of delay are therefore in excess of £1.5 billion per annum or around £4m per day. It need to be borne in mid that these values lie within a fairly wide possible range.
- 4.1.4 Some of these costs are unambiguous losses which cannot be recouped. This is clearly the case with construction costs, planning blight and transport blight. Losses of user benefits can potentially be recouped in the future – the value of these depends on the treatment of future notional benefits against nearer term ones. Losses of agglomeration benefits have elements of each of these. It is not at all clear that losses can simply be moved into the future. Not only may losses not be recouped but there could be potential negative feedback as well.
- 4.1.5 All the reports which have investigated London's global competitiveness have concluded that an ailing public transport system is likely to be a brake on London's future growth. Historical evidence from the rise and decline of cities, and recent employment changes from increased US regulation, reminds us that change does occur, and that current dominance is no guarantee of future success. Missed employment opportunities may be lost forever, and not simply delayed until the opening of Crossrail.



## APPENDIX A

### FTSE Listed companies in sub sectors: Banks, Real Estate and Publishing

Sub Sector	Company	Registered Office
Banks	HSBC HLDGS	London
Banks	ROYAL BANK OF SCOTLAND	Edinburgh
Banks	GROUP PLC	Edinburgh
Banks	BARCLAYS	London
Banks	HBOS	Edinburgh
Banks	LLOYDS TSB GROUP	London
Banks	STANDARD CHARTERED	London
Banks	NORTHERN ROCK	Newcastle-upon-tyne
Banks	ALLIANCE & LEICESTER	Leicester
Banks	BRADFORD & BINGLEY	Bingley
Real Estate Holding & Development	LAND SECURITIES GROUP	London
Real Estate Holding & Development	BRITISH LAND CO	London
Real Estate Holding & Development	LIBERTY INTERNATIONAL PLC	London
Real Estate Holding & Development	HAMMERSON	London
Real Estate Holding & Development	SLOUGH ESTATES	Slough
Real Estate Holding & Development	BRIXTON	London
Real Estate Holding & Development	DERWENT VALLEY HLDGS	London
Real Estate Holding & Development	MAPELEY	London
Real Estate Holding & Development	GREAT PORTLAND ESTATES	London
Real Estate Holding & Development	QUINTAIN ESTATES & DEVELOPMENT	London
Real Estate Holding & Development	LONDON MERCHANT SECURITIES PLC	London
Real Estate Holding & Development	CAPITAL & REGIONAL	London
Real Estate Holding & Development	COUNTRYWIDE PLC	Witham
Real Estate Holding & Development	GRAINGER TRUST PLC	Newcastle
Real Estate Holding & Development	SHAFTESBURY	London
Real Estate Holding & Development	SAVILLS	London
Real Estate Holding & Development	DAEJAN HLDGS	London
Real Estate Holding & Development	WORKSPACE GROUP	London
Real Estate Holding & Development	ST.MODWEN PROPERTIES	Birmingham
Real Estate Holding & Development	BIG YELLOW GROUP	Bagshot
Real Estate Holding & Development	UNITE GROUP	Bristol
Real Estate Holding & Development	MINERVA	London
Real Estate Holding & Development	CLS HLDGS	London
Real Estate Holding & Development	WARNER ESTATE HLDGS	London
Real Estate Holding & Development	HELICAL BAR PLC	London
Real Estate Holding & Development	TOWN CENTRE SECURITIES	Leeds
Real Estate Holding & Development	DTZ HLDGS	London
Real Estate Holding & Development	MUCKLOW(A. & J.)GROUP	Halesowen
Real Estate Holding & Development	DEVELOPMENT SECURITIES	London
Real Estate Holding & Development	MOUNTVIEW ESTATES	London
Real Estate Holding & Development	MARYLEBONE WARWICK	London

Real Estate Holding & Development	BALFOUR GRP	Reading
Real Estate Holding & Development	MCKAY SECURITIES	London
Real Estate Holding & Development	FREEMPORT	Edinburgh
Real Estate Holding & Development	TEESLAND PLC	London
Real Estate Holding & Development	PRIMARY HEALTH PROPERTIES	London
Real Estate Holding & Development	LONDON & ASSOCIATED	London
Real Estate Holding & Development	PROPERTIES	Edinburgh
Real Estate Holding & Development	SMART(J.)& CO(CONTRACTORS)	London
Real Estate Holding & Development	PANTHER SECURITIES	Cardiff
Real Estate Holding & Development	CARDIFF PROPERTY	London
Real Estate Holding & Development	STEWART & WIGHT	London
Real Estate Holding & Development	FLETCHER KING	London
Real Estate Holding & Development	OEM	London
Real Estate Holding & Development	ASDA PROPERTY HLDGS	London
Publishing	REED ELSEVIER	London
Publishing	PEARSON	London
Publishing	REUTERS GROUP	London
Publishing	YELL GROUP	Reading
Publishing	DAILY MAIL & GENERAL TRUST	London
Publishing	INFORMA	London
Publishing	UNITED BUSINESS MEDIA	London
Publishing	EMAP	London
Publishing	TRINITY MIRROR	London
Publishing	JOHNSTON PRESS	Edinburgh
Publishing	EUROMONEY INSTITUTIONAL	London
Publishing	INVESTOR	London
Publishing	DATAMONITOR	WORCESTER
Publishing	METAL BULLETIN	PARK
Publishing	BLOOMSBURY PUBLISHING	London
Publishing	CENTAUR MEDIA	London
Publishing	INCISIVE MEDIA	London
Publishing	WILMINGTON GROUP	London
Publishing	FUTURE	Bath
Publishing	SANCTUARY GROUP	London
Publishing	HAYNES PUBLISHING GROUP	YEOVIL

## 25 Largest UK Law Firms

In the UK	Global
<i>Clifford Chance</i>	<i>Clifford Chance</i>
<i>Linklaters</i>	<i>Linklaters</i>
<i>Freshfields Bruckhaus Deringer</i>	Skadden ARPS Slate Meagher & Flom
<i>Allen &amp; Overy</i>	<i>Freshfields Bruckhaus Deringer</i>
<i>Lovells</i>	Latham & Watkins
<i>DLA Piper</i>	Baker & McKenzie
<i>Eversheds</i>	<i>Allen &amp; Overy</i>
<i>Slaughter and May</i>	Jones Day
<i>Herbert Smith</i>	Sidley Austin

Simmons & Simmons	White & Case
Ashurst	Weil Gotshal & Manges
Norton Rose	Mayer Brown Rowe & Maw
CMS Cameron McKenna	Kirkland & Ellis
Pinsent Masons	<i>DLA Piper (US)</i>
Addleshaw Goddard	Sullivan & Cromwell
SJ Berwin	Greenberg Traurig
Denton Wilde Sapte	Shearman & Sterling
Berwin Leighton Paisner	WilmerHale
Taylor Wessing	O'Melveny & Myers
Hammonds	Morgan Lewis & Bockius
Clyde & Co	Mcdermott Will & Emery
Irwin Mitchell	Cleary Gottlieb Steen & Hamilton
Nabarro Nathanson	Gibson Dunn & Crutcher
Wragge & Co	Simpson Thacher & Bartlett
Beachcroft Wansbroughs	<i>Love/ls</i>

#### 40 Investment Banks

ABN AMRO	Europa Partners Ltd.
Anglo & International	Fox-Pitt, Kelton
ANZ Bank	GE Commercial Finance
Arbuthnot Latham	GML International Ltd.
Baird	Goldman Sachs
Bank of America	Greenhill
Bear Stearns	Lazard
Beer Mergers	Lehman Brothers
BNP Paribas	Merrill Lynch
Cazenove & Co.	Mirador Consulting Ltd
CIBC World Markets	NM Rothschild & Sons
Citigroup	Nomura International
Climate Change Capital	Numis Securities
Close Brothers	Panmure Gordon
Commerzbank	RBC Capital Markets
Credit Agricole	Schroders
CSFB	Seymour Pierce
Daiwa Securities SMBC	Smith Barney
Deutsche Bank	Standard Bank
Dresdner Kleinwort	UBS