How Not to Bungle a Public-Private Partnership (PPP): Lessons from the London Underground PPPs

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1. Introduction

The vicissitudes of the 20th century have demonstrated time and again that neither the market nor the state is infallible in its endeavours. The ‘state’ – represented by the public sector – and the ‘market’ – embodied by the private sector – both have their share of successes and failures. One key lesson from these successes and failures is that both the state and the market can complement each other by joining together when appropriate to avoid the mistakes that they are susceptible to committing when engaged in an activity alone. This realization, combined with fiscal imperatives, led to the birth of a partnership between the public and private sectors. This union is referred to by various monikers but is most commonly known as a public-private partnership (PPP).

The London Underground Limited Public-Private Partnerships (LUL PPPs) are unique due to their complexity, large scale\(^1\), and embodiment of the use of PPPs to overcome difficulties in public funding and implementation of infrastructure projects. LUL PPPs were inked in 2002-2003 despite facing several controversies. The LUL PPPs consisted of three separate PPP arrangements over a 30-year period, with two different private infrastructure companies (Infracos) – two with Metronet (Metronet BCV and Metronet SSL, together referred to as Metronet or the Metronet PPPs or the PPPs) and one with Tube Lines.\(^2\) Right from the start, there were problems with this arrangement, especially for the two Metronet PPPs. These problems eventually led to the public sector taking over all three PPPs after both of the private concessionaire companies fell into administration.

The Metronet PPPs went into administration within the first five years of their 30-year concession period. This case provides a fascinating opportunity to delve into two specific reasons for their failure, namely, (1) a failed supply chain arrangement, and (2) excessive government guarantees of the bank loans made to the Metronet PPPs. Rather than drawing any broader normative conclusions about PPPs in general, the objective of this study is to analyze and understand the specific reasons for Metronet’s failure to benefit future PPPs. As the U.K. Secretary of State for Transport at the time of the Metronet PPP’s collapse said, “It is of great

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\(^1\) London’s subway system is one of the largest and complex systems in the world. When the Metronet PPPs were signed in 2003, together they represented the largest PPP to be signed until then. Johnson & Fahey, 2003, 21.

\(^2\) Metronet was a consortium of WS Atkins, Balfour Beatty, Bombardier Transportation, EDF Energy, and Thames Water. Tube Lines was a consortium of Amey, Bechtel, and Jarvis.
importance to us that we fully understand why Metronet failed so that we can learn the appropriate lessons for the future.”

The lessons from this episode offer both guidance and safeguards for global practitioners – from public sector officials, private sector investors, lenders, advisers, to other key stakeholders – on avoiding similar pitfalls and structuring better PPPs.

2. London Underground Limited Public-Private Partnerships

2.1. Background to the LUL PPPs

For several decades since the nationalization of ‘The Tube’ (London’s subway system) after World War II, its infrastructure continuously deteriorated due to chronic underinvestment by the public sector. Under the traditional model of public sector ownership and management, spending on the Tube’s infrastructure was uncertain because it was contingent on annual public expenditure reviews. This caused the state of the Tube’s assets to suffer, resulting from years of budgetary uncertainty. Every year the London Underground Limited (LUL) submitted budget requests projecting three years into the future, with a firm budgetary allocation for the first year and provisional amounts allocated for the following two years. When repeating the process in the subsequent year, there was considerable uncertainty about whether LUL’s actual budget for that year would even be close to the provisional figure agreed to in the previous year. This annual funding uncertainty compromised effective planning and execution of infrastructure investment. Furthermore, the experience of the Jubilee line extension and the Central line upgrade in the 1990s left the government with little confidence that the management of LUL could be relied upon to manage infrastructure investment on the scale needed to modernize the Tube.4

In 1997, the Labour Party swept to power based in part on its promise to deliver better public services. Although its leadership excluded the idea of completely privatizing public services, the Labour Party did commit itself to partially involving the private sector in its efforts to modernize and improve infrastructure.5

This policy stood in contrast to the Conservative government’s approach of complete privatization, a legacy of Margaret Thatcher. In 1992, the Conservative government initiated the

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4 Comptroller and Auditor General, National Audit Office, 2004b, 9.
Private Finance Initiative (PFI), which provided for what were essentially annuity (availability payment) style PPPs.\textsuperscript{6} The Labour government also adopted the idea of leveraging private sector expertise and finance, preferring to use the more palatable terminology of ‘public-private partnership’.\textsuperscript{7} In May of 1997, the Labour government began examining options for modernizing the Tube, and in March 1998 announced that it would pursue a PPP approach.\textsuperscript{8} Immediately, the Mayor of London, Ken Livingstone, opposed the PPP and argued that Tube’s modernization could be achieved by raising capital through a bond issue and implementation by the public sector. The U.K. government ultimately prevailed over the Mayor of London, but not before dealing with two rounds of judicial reviews and considerable public opposition to the PPP approach for modernizing the Tube.\textsuperscript{9}

2.2. Rationale for and Objectives of the LUL PPPs

Although lack of funding certainty severely constrained LUL’s ability to undertake long-term maintenance and renewal initiatives,\textsuperscript{10} LUL also had a poor track record of delays and cost overruns, demonstrated by the substantial cost overruns of over 30% on both the Jubilee line extension and Central line upgrades in the 1990s. The public sector failed to complete both of these projects on time, and also failed to deliver the expected improvements in passenger journey times. These factors strongly influenced the government’s decision to adopt a PPP approach for the Tube’s infrastructure maintenance, upgrades, and renewal.\textsuperscript{11}

The government wanted to achieve two major objectives from the LUL PPPs. First, it wanted to ensure stability of funding for Tube’s infrastructure by leveraging the private sector’s ability to raise the capital required on a long-term basis.\textsuperscript{12} Second, it sought to avail of the private sector’s expertise in project management of major infrastructure enhancements on the Tube. This arose

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\textsuperscript{6} The principle of PFI was that the public sector would contract with the private sector on a long-term basis, often between 20 and 30 years, to deliver services to the public sector rather than an asset. For instance, the private sector would design, build, operate and finance an asset, such as a hospital, school or prison, to public sector’s specifications, and then rent it out to the public sector for use at a price under a long-term contract. Upon expiry of the term, the asset would revert to public ownership. Economist, 2003.

\textsuperscript{7} Economist, 2003.

\textsuperscript{8} Comptroller and Auditor General, National Audit Office, 2004b, 9.

\textsuperscript{9} Comptroller and Auditor General, National Audit Office, 2004b, 6.

\textsuperscript{10} Comptroller and Auditor General, National Audit Office, 2004a, 4; Comptroller and Auditor General, National Audit Office, 2004b, 9.

\textsuperscript{11} Finn, 2007, 6; Comptroller and Auditor General, National Audit Office, 2009, 11.

\textsuperscript{12} Finn, 2007, 7; Comptroller and Auditor General, National Audit Office, 2009, 11.
from a belief that the private sector was better positioned to manage underperformance as well as the cost and time overrun risks that ailed the public sector.\textsuperscript{13}

In addition to the stated public sector funding and performance shortcomings, there was a larger political commitment at play that influenced the pursuance of LUL PPPs. The prevailing political atmosphere at the time was a combination of mistrust in the public sector’s ability to deliver services in an efficient and effective manner, and the desire to avoid the complete privatization of public assets. In the 1990s, the U.K. government evolved PFI as a compromise between retaining public ownership of assets and using the private sector’s expertise in public services delivery to overcome prior failures.

Although PFI was an initiative of the Conservative government, the Labour Party under Tony Blair was also strongly committed to this strategy. In these circumstances, when PPPs were the fashion of the day within the U.K. government, LUL PPPs were in essence a highly strategic political initiative. This also explains the decision to retain operations of the Tube under the public sector while relying on private sector capital and expertise for infrastructure modernization.

2.3. **Scope of the Metronet PPPs**

As part of the PPPs, Metronet was in charge of nine track lines, about 700 kilometers of track, 150 stations, 350 trains, and 120 kilometers of deep underground tunnels. Metronet was mandated to maintain the infrastructure assets and inject capital investments when necessary. Throughout the 30-year contract, Metronet was required to invest about £17 billion for maintenance, renewal, and upgrading the Tube’s infrastructure. In return, Metronet would earn an annual indexed infrastructure service charge (ISC). The ISC was contingent on Metronet satisfying specific output requirements linked to key performance measures. The output specification considered maintenance and related work, and required investments in Tube’s assets. Performance was judged against four basic metrics – availability and reliability of services, journey duration, ambience, and service points. LUL could make deductions from the ISC to ensure that Metronet performed its responsibilities under the PPPs.\textsuperscript{14}

\textsuperscript{13} Finn, 2007, 7.
\textsuperscript{14} Comptroller and Auditor General, National Audit Office, 2009, 13.
2.3.1. **Structure**

In preparing the Tube for the PPPs, certain structural changes were made to the way the Tube was organized as part of the overall structure. The Tube was vertically unbundled into two segments – infrastructure and operations. It was recognized that the public sector had a satisfactory performance history in handling public-facing operations of the Tube, and therefore it was decided that LUL would continue to own and operate the Tube.\(^\text{15}\) Although it remained unsaid, it must be noted that the public’s opposition to the sale of public assets may have influenced the public sector’s retention of the Tube’s operation.

On the other hand, maintaining, upgrading, and renewing of Tube’s infrastructure – areas of public sector weakness – were transferred to the private sector consortiums. Furthermore, the 12 track lines were horizontally split across three separate Infracos. Metronet was in charge of two of the three Infracos – Metronet BCV and Metronet SSL (the Metronet Infracos).\(^\text{16}\) The figure below provides a graphic description of the structure of the LUL PPPs and the status of various stakeholders in the overall structure.

\(^{15}\) Comptroller and Auditor General, National Audit Office, 2004b, 2.

\(^{16}\) Comptroller and Auditor General, National Audit Office, 2004b, 11-13.
2.3.2. Stakeholders and Responsibilities

On the public sector's side there were several agencies that were involved in the LUL PPPs. The U.K. Department for Transport (DfT) and the Secretary of State for Transport were primarily responsible for instituting the PPPs before handing over day-to-day management of them to LUL, a subsidiary of Transport for London (TfL). Even after the agreements of the LUL PPPs were signed and their management transferred to TfL, DfT continued to be involved by making an annual grant of £1.1 billion to TfL to cover LUL’s ISC to Metronet and Tube Lines, providing ongoing assurance to Metronet’s lenders that it would not stand by and do nothing if LUL was unable to meet its financial obligations to Metronet.17

17 Comptroller and Auditor General, National Audit Office, 2004b, 11-23.
Metronet was a consortium formed by five private companies including WS Atkins, Balfour Beatty, Bombardier Transportation, EDF Energy, and Thames Water. The coming together of these consortium members as strategic investors was premised on the non-overlapping and complementary skills that they brought to the table. Each consortium member contributed a relevant skill for the fulfillment of Metronet’s responsibilities under the PPPs. Metronet guaranteed subcontracts for maintenance and capital works to its shareholders, thereby providing them an exclusive role in the supply chain. This arrangement, known as a ‘tied supply chain’, was aimed to guarantee the availability of resources at a firm price.\(^{18}\) The details of the tied supply chain are: Balfour Beatty as the contractor; Atkins as the consulting engineering; Bombardier for building of the trains and signaling systems; and Thames Water and EDF Energy for water and power supply, both having a historic working relationships with the Tube.\(^{19}\) The figure below provides a graphic representation of the tied supply chain arrangement.

**Figure 2: Metronet’s Tied Supply Chain Arrangement**

In terms of responsibilities, Metronet was expected to invest at least £ 16.9 billion over the 30-year period for the maintenance and upgrade of the Tube’s infrastructure, of which £ 6.9 billion had to be made over the first 7.5 years (up to September 2010). In return for carrying out the maintenance and upgrades, Metronet would be receive monthly payments of ISC indexed to annual inflation, and subject to bonuses and abatements depending on the performance of the Metronet Infracos. DfT provided grant funding of approximately £ 1 billion to TfL to finance

\(^{18}\) Comptroller and Auditor General, National Audit Office, 2004b,12.

\(^{19}\) Johnson & Fahey, 2003, 22.
payments by LUL to Metronet and Tube Lines, of which roughly £ 600 million was earmarked for Metronet.  

2.4. Cost Uncertainty

One of the biggest problems facing both the public and private sectors in pricing the PPPs was the lack of complete information regarding the exact condition of the Tube’s infrastructure. The Tube was extremely old and vast, and suffered from years of neglect. In this case it was not possible for the stakeholders to reach an agreement on the condition of the less accessible parts of the Tube’s infrastructure. The London Assembly’s Transport Committee put it aptly when it said, “When the PPP started it was in many ways a leap in the dark... Quite simply, no one really knew what was down there.”

Given the lack of complete information regarding the condition of the Tube’s expansive infrastructure, both the private and public sectors were unable to accurately estimate the cost of future maintenance and upgrades to the infrastructure, exposing them to the risk of cost overruns.

As both the public and the private sectors struggled to price potential cost overruns, a compromise was reached: the risk was to be shared between both entities. Metronet’s responsibility for cost overruns during the first 7.5 years was capped at £ 50 million for each of the Metronet Infracos, provided the additional costs were incurred in an economic and efficient manner. This was termed the ‘Materiality Threshold’, which was the level of the cost overrun below which the Metronet Infracos could not claim additional funds from LUL. Interestingly the phrase ‘economic and efficient’ was not defined in any of the PPP agreements. As part of the overall PPP framework, the U.K. government created the position of an independent PPP Arbiter through [The] Greater London Authority Act of 1999. If the parties to the PPPs asked, the Arbiter was given the final word in judging – based on good industry practice – what was considered economic and efficient for dealing with assets in each particular classification and set of circumstances.

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20 Comptroller and Auditor General, National Audit Office, 2009, 12.
22 Comptroller and Auditor General, National Audit Office, 2004b, 37.
2.5. Periodic Reviews

A more structural response to the uncertainty over the state of Tube’s assets was the inclusion of periodic reviews of the PPPs. The lack of complete information on the state of Tube’s assets, even to the incumbent public sector owner and operator, and the long tenure of the PPP agreements, were causes of concern for Metronet and its lenders.\(^\text{24}\) Nobody had experience pricing against output specifications for such a large and extended program of work. Such incompleteness of information, and the resulting uncertainty over the value of the work to be completed, necessitated a less traditional scheduling of the PPP agreement.\(^\text{25}\) As a hedge against the cost uncertainty, the 30-year PPPs were broken into four, 7.5-year sections. The first phase would end in mid-2010 and was set aside as a soft landing that presented the opportunity for the Metronet Infracos, through the maintenance of their assets, to accumulate knowledge of the condition of the infrastructure of the lines they were responsible for.\(^\text{26}\) At the end of the first review period, the terms of the PPPs would be renegotiated based on the updated information available after 7.5 years of exposure to the Tube’s infrastructure assets. Splitting up the 30-year contract acted as a built-in mechanism allowing a periodic review of the PPP arrangement and enabling the parties to renegotiate key terms of the PPP agreements.\(^\text{27}\)

Although this was an innovative solution for overcoming the problem of cost uncertainty, it is worth noting that when there are difficulties in measuring costs and allocating risks, undertaking a PPP is the wrong strategy for a public sector that seeks value for money. Even with this innovation, the glaring absence of complete information and the uncertainty of costs should have cautioned the U.K. government about the potential challenges that lay ahead, especially in a complex PPP.

3. Financing the Metronet PPPs

The financing of the two Metronet Infracos (equally split) consisted of £ 2.98 billion, raised through a multi-tranche structure that included equity from the shareholders of the Metronet Infracos, a bond issuance, a syndicated loan and a loan from the European Investment Bank (EIB). Equity consisted of £ 350 million and debt was £ 2.63 billion. The highlight of this

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\(^{24}\) Comptroller and Auditor General, National Audit Office, 2004b, 17-18.  
\(^{25}\) Comptroller and Auditor General, National Audit Office, 2004b, 4, 17.  
\(^{26}\) London Assembly Transport Committee, 2007, 11.  
\(^{27}\) Comptroller and Auditor General, National Audit Office, 2004b, at 1.
structure is the use of hybrid non-recourse project finance along with a government guarantee of the debt.

On the liabilities side of the balance sheet, £1.03 billion worth of bonds were issued of which £330 million were index-linked bonds guaranteed/wrapped by Financial Security Assurance (FSA); the remaining £700 million of bonds were guaranteed/wrapped by Ambac. A senior loan of £1 billion was raised through a syndicate of lenders consisting of Abbey National, CIBC, Deutsche Bank, and the Royal Bank of Scotland. The EIB committed to supporting the modernization of the Tube with £900 million in term loan facilities, of which £600 million was made available to the Metronet Infracos. The table below provides the financing structure.  

<table>
<thead>
<tr>
<th>Source of Finance</th>
<th>(£ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds</td>
<td>1,030</td>
</tr>
<tr>
<td>Syndicated Loan</td>
<td>1,000</td>
</tr>
<tr>
<td>EIB Loan</td>
<td>600</td>
</tr>
<tr>
<td><strong>Total Debt</strong></td>
<td><strong>2,630</strong></td>
</tr>
<tr>
<td>Atkins</td>
<td>70</td>
</tr>
<tr>
<td>Balfour Beatty</td>
<td>70</td>
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<tr>
<td>Bombardier</td>
<td>70</td>
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<tr>
<td>EDF Energy</td>
<td>70</td>
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<tr>
<td>Thames Water (RWE)</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td><strong>350</strong></td>
</tr>
<tr>
<td><strong>Total Capital</strong></td>
<td><strong>2,980</strong></td>
</tr>
</tbody>
</table>

### 3.1. Government Guarantee

Given the risks involved in the PPPs, Metronet’s lenders were asking for some form of government protection for the amount lent to the Metronet Infracos. In the autumn of 2000, this protection was provided through a guarantee from the government; it would pay the lenders a sum set at a minimum of 90% of the debt, which was known as the ‘underpinned amount’. As the negotiations progressed, increased perceptions of risk led the lenders to seek even greater protection. 29 This increased perception of project’s riskiness was a result of Railtrack being placed in administration in October 2001. The failure of Railtrack illustrated the risks of costing maintenance and renewal of assets when their condition was not well known. Additionally, there

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was increased political opposition to PPPs that provoked negative sentiment towards the LUL PPPs.  

Eventually, the DfT conceded to this request and assured the lenders that it would back up to 95% of the amount lent in the event of a termination of the PPPs. To this effect, should a default event occur, TfL was guarantor of 95% of the Metronet’s borrowings. Furthermore, DfT gave assurances to Metronet’s lenders that it would not stand by and do nothing if LUL was unable to meet its obligations. While DfT did not formally guarantee Metronet’s loans, the Secretary of State for Transport gave this assurance to Metronet’s lenders.

It is important to point out that the cost of private sector borrowing and the overall return to Metronet’s shareholders, estimated to be in the range of 18%-20%, was much higher than the public sector’s 4.5% cost of borrowing. DfT considered the higher cost of private sector borrowing, despite the guarantee provided, as a reasonable cost to pay for risk sharing, and scrutiny of the deal and the performance of Metronet Infracos by the lenders.

4. Failure of the Metronet PPPs

4.1. Metronet’s Administration

Problems with the Metronet PPPs began right from the start. Significant delays and cost overruns accompanied a deteriorating working relationship between the public and private sectors. Metronet managed to improve performance in a few areas, but largely lagged behind in its delivery of promised performance improvements and investments. Even as its performance was lagging, a larger problem in the form of cost overruns was brewing in the background. By 2007, Metronet had incurred significant cost overruns even as LUL and Metronet engaged in negotiation to reach a settlement about these increased costs. In February 2007, LUL publicly made it clear that it did not consider it possible to reach a negotiated settlement with Metronet over its cost increases and that Metronet should use its contractual right to seek an Extraordinary Review of the Arbiter to recover the additional money that it was claiming.

30 Comptroller and Auditor General, National Audit Office, 2004b, 25
32 Finn, 2007, 9; Comptroller and Auditor General, National Audit Office, 2004b, 5.
33 House of Commons Transport Committee, 2008, 4-5.
Metronet waited until 28 June 2007 to ask for an Extraordinary Review from the Arbiter to recover the cost overruns of over £1 billion. On 16 July, the Arbiter provisionally determined that at an interim level Metronet was entitled to only a small portion of the cost overrun - £121 million increase in ISC of the £551 million claimed for Metronet BCV for the next twelve months. Metronet was of the opinion that a similar outcome awaited Metronet SSL, and therefore filed for administration on 18 July 2007. As a result of the failure of Metronet Infracos, LUL had to buy 95% of Metronet’s outstanding debt obligations from its private sector lenders in February 2008, rather than repaying this debt over the 30 years of the contract. DfT made a grant of £1.7 billion to aid LUL in this buy-out.

While this was the immediate cause of the failure of Metronet, a pronouncement of either the success or failure of the PPP is contingent on determining if the costs were incurred in an economic and efficient manner, and why such large cost overruns occurred. There is no reason to doubt the validity of the determination reached by the Arbiter, especially because Metronet did not challenge this decision. As a result, the following discussion seeks to highlight the deeper structural reasons leading to these costs being incurred – costs that ultimately led to the demise of the Metronet PPPs.

### 4.2. Reasons for the Failure of the Metronet PPPs

In the light of the failure of the Metronet PPPs, studies were initiated to understand the causes for the collapse. They include a report by the National Audit Office (NAO) of the U.K., as well as a detailed investigation by the Transport Committee of the Select Committees of the U.K. Parliament. Several troubling aspects of the workings of the Metronet PPPs, both in the public as well as the private sectors, were identified in these investigations. These include agency issues within the public sector, lack of transparency and accurate information, and the weak powers accorded to the Arbiter. However, two reasons that were fundamental to Metronet’s collapse are: (1) the tied supply chain arrangement that failed due to poor corporate governance and subcontracting, and (2) the high level of government guarantees of the private sector’s debt.

#### 4.2.1. A Supply Chain Arrangement Gone Wrong

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34 House of Commons Transport Committee, 2008, 4-5.
It is common in infrastructure projects to have sponsors or a group of sponsors involved in the construction and management of the project or have other commercial ties to the project – for instance, in the form of suppliers or customers.\(^{36}\) In large infrastructure PPPs especially, this allows several strategic investors to join hands and successfully execute a project.\(^{37}\) In the case of financial sponsor led PPPs, immediately after transaction closure various components of a project are typically unbundled into separate sub-contracts, wherein concerns are raised over the nature of such partnerships and the performance risk for the various unbundled pieces of the PPPs. Equity participation by subcontractors helps overcome this problem, by allowing risk transfer to align the interests of subcontractors with those of the public sector.\(^{38}\)

As mentioned earlier, in the Metronet PPPs, most of the subcontracts were awarded to the various sponsors of the Metronet Infracos. About 60% of the projected capital expenditure in the first 7.5 years was to be delivered by the sponsors of the Metronet Infracos. It was argued that this structure, termed a ‘tied supply chain’, would ensure that Metronet benefited from ‘certainty of price and resources’ throughout the 30-year contract. This was an appealing guarantee given that the costs of many major construction projects tend to escalate rapidly.\(^{39}\) The London & Continental Railways Limited project to build the Channel Tunnel Rail Link – a high-speed railway between St. Pancras Station in London and the Channel Tunnel – used a similar tied supply chain structure to successfully deliver the project.\(^{40}\)

**Failure of Corporate Governance.** In the Metronet PPPs, there was a large mismatch between what was intended at the time of signing the PPP agreements and what transpired in reality. Just months before Metronet filed for administration, the Transport Committee of the House of Commons found that Metronet’s preferred supplier model was largely to blame for the problems at Metronet. The model allowed Metronet to subcontract almost all of the work being undertaken to its five composite companies, leading to two developments. The first occurred when the work on maintenance and upgrades slipped; Metronet lacked the necessary clout to discipline and take action on these failings. Secondly and more worryingly, the Arbiter said that that he was unable

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\(^{36}\) Brealey, 1996, 28.


\(^{38}\) Grimsey & Lewis, 2004, 111.


\(^{40}\) Comptroller and Auditor General, National Audit Office, 2009, 55.
to determine a clear line of payments between Metronet and its partners, leaving Metronet open
to suggestions that the payments had been made to the suppliers, unrelated to the work actually
carried out.\textsuperscript{41} Relying on a report by Ernst & Young on the Channel Tunnel Rail Link, the NAO
further reasoned that the difference in outcome between the two projects was the result of a
genuine partnership and policy of total transparency in the Channel Tunnel Rail Link project,
qualities that were lacking in the Metronet PPPs.\textsuperscript{42}

The shareholders of Metronet, in addition to receiving dividends on their equity investments,
benefitted from lucrative supply chain subcontracts with the Metronet Infracos. Some
subcontracts were structured in a manner where payments did not necessarily relate to actual
work, but were based instead on contractual payment dates and not delivery. This resulted in a
situation where subcontractors (who happened to be the shareholders as well) were not
necessarily suffering due to late delivery on the Metronet Infracos’ capital program. In this
manner, 30 months into the PPPs (September 2005), LUL estimated that subcontractor payments
to Metronet’s shareholders totaled £ 875 million.\textsuperscript{43}

Merely blaming the tied supply chain structure is naïve and simplistic because the awarding of
subcontracts to shareholders is not an uncommon practice. As noted above, this arrangement
does in fact have certain benefits. Therefore the question in this case is, “why did the tied supply
chain structure not work in the case of Metronet PPPs?” It was not the tied supply chain \textit{per se}
but certain enabling factors that led to the abuse of the supply chain system. The absence of a
proper corporate governance structure in the Metronet Infracos created circumstances propitious
for the abuse of this structure. This lack of governance concerned the relationship between the
five shareholders of Metronet Infracos as shareholders and as subcontractors. Many of the
Metronet Infracos’ decisions required unanimous agreement by all the five shareholders,
however these shareholders unfortunately had different motivations catering to their roles as
suppliers rather than as shareholders.\textsuperscript{44}

\textsuperscript{41} London Assembly Transport Committee, 2007, 4.
\textsuperscript{42} Comptroller and Auditor General, National Audit Office, 2009, 55.
\textsuperscript{44} Mayor of London, Transport for London, 2006, 11.
Even when problems with the tied supply chain were brought to the notice of the shareholders, there were serious doubts as to whether they were committed to doing anything about them.\textsuperscript{45}

The extent that conflict of interests permeated the Infracos is demonstrated by the fact that the non-executive director of Metronet, Graham Pimlott, was threatened with litigation when he tried to reduce the amount of work being awarded to the shareholding companies.\textsuperscript{46} Even Chris Bolt, the Arbiter of the LUL PPPs, opined that under the control of the shareholders, the managing director of Metronet did not have as much freedom to decide on an efficient supply chain that a managing director would normally have.\textsuperscript{47} He concluded that it was possible to successfully operate a tied supply chain if there was a clear distinction between the roles of shareholder and supplier.\textsuperscript{48}

\textit{Failed Risk Allocation Between the Metronet Infracos and Subcontractors.} The structure of Metronet’s tied supply chain arrangement reflects a serious failure in risk allocation between key stakeholders. Risk allocation is a critical aspect of PPPs, with each risk allocated to the party that is best able to manage it. By definition being able to best manage a risk means to manage it at the lowest cost, thereby reducing the long-term costs of the project. Not surprisingly, construction risks are typically best managed by the subcontractors who actually have the most control over construction related matters. Merely having project sponsors as subcontractors or requiring subcontractors to have equity participation does not assure efficient risk transfer. Besides equity participation in a PPP, and especially in a project finance transaction, construction related risks such as delay and cost overruns are transferred to relevant subcontractors by drafting the core subcontracts on a back-to-back principle whereby the subcontracts mirror the terms of the PPP agreement between the public sector and the private sector concessionaire.\textsuperscript{49}

In the Metronet PPPs, the risk of cost overruns beyond the Materiality Threshold that was not economic and efficient was to be borne by the Metronet Infracos. The back-to-back principle of subcontracting dictated that this risk would be transferred to the subcontractors. However, this was not done. Payments to Trans4m (owned by four out of five of Metronet’s shareholders), the

\begin{footnotesize}
\begin{itemize}
  \item House of Commons Transport Committee, 2008, 8.
  \item House of Commons Transport Committee, 2008, 8, Ev 27.
  \item House of Commons Transport Committee, 2008, 8, Ev 6.
  \item House of Commons Transport Committee, 2008, 8, Ev 6.
  \item Burbury & Dahlawi, 2013.
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subcontractor for station upgrades, were based on the actual costs of works undertaken without any limits on cost incurred. This contrasts with Bombardier’s contract for rolling stock and signaling, which was output-based and implied that Bombardier had to achieve clear milestones before receiving payments of a firm price subjected to the agreed upon indexation. It is therefore not surprising that the increased costs of station upgrades contributed the largest part of cost overruns. By March 2007, Metronet projected that the station upgrade program would cost £1.1 billion more than it had originally bid. Clearly, the subcontractors did not share the risk of cost overruns and were not incentivized to act in an economic and efficient manner. Instead, this risk was locked up in the two Metronet Infracos, backed only by the equity investment of its shareholders. As a result, Metronet was nothing more than a buffer zone between its parent companies and the obligations under the Metronet PPPs. Under this skewed structure, the shareholders of Metronet – acting as subcontractors – reaped the rewards of the subcontracts, while the Metronet Infracos – both the companies with few assets and little real purpose beyond acting as an intermediary between LUL and Metronet consortium members – absorbed all of the risk.

It is worthwhile to consider whether such a supply chain structure would have performed better if independent third parties were the subcontractors instead of the shareholders of Metronet. Alternatively, would the cost overruns have occurred had payments to the subcontractors been made subject to the Arbiter’s determination that they were incurred in an economic and efficient manner?

The answer is probably negative in both scenarios. The adopted structure of Metronet’s supply chain subcontracts lacked both appropriate commercial incentives and viable checks and balances for the subcontractor to limit cost overruns. Consequently, the House of Commons Transport Committee rightly chastised the public sector for failing “to foresee that Metronet’s proposed tied supply chain model, which guaranteed the lion’s share of work to its parent companies, did not include the necessary safeguards.”

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4.2.2. High Level of Government Guarantee of Metronet’s Debt

As is the case in many PPPs, the LUL PPPs were structured as project finance transactions. A key financial feature of project finance transactions is a high level of leverage accompanied by off-balance sheet debt for the sponsors (i.e. the debt amount is not supported by any collateral provided by the sponsor of the infrastructure project). The providers of debt rely primarily on the cash flows from the project company as the funding source for repaying the debt. In other words, project finance makes debtors’ returns contingent upon the success of the project. The high stakes for lenders involved in this structure amounts to a transfer of economic risk that incentivizes them to take a keen interest in the management of project to protect their investment.53 Through legal covenants, the debtors are also able to control the actions of the project company, allowing them to effectively manage this risk. This was seen as one of the key benefits of the LUL PPPs, wherein the government wanted to transfer the risk of delays and cost overruns to the private sector.54

In this case, due to the high level of guarantees provided by the government, the banks lending money to the Metronet Infracos had limited downside risk; in the event of a termination or failure of the Metronet PPPs, they would still recover 95% of the loan amount.55 Essentially, the lenders stood to lose very little irrespective of the outcome of the project. As a result, it is argued that the banks only monitored the rate of spending by Metronet but did not compare it closely enough to delivery, and failed to identify the extent of the cost overruns.56 In the aftermath of Metronet’s filing for administration, Steve Allen, Managing Director of Finance at TfL agreed, saying that “the banks being 95% guaranteed did blunt some of the incentives that you usually expect to see from private finance and some of the rigour that you look for in terms of their policing of the contracts.”57

The NAO calculated the amount at stake for Metronet based on what the lenders had lent up to July 2007. The lenders made loans of £ 627 million to Metronet, of which only £ 31 million was at risk. Even this loss was largely offset by the earnings made by banks through loan set-up fees

53 Harris & Krueger, 1999.
54 Comptroller and Auditor General, National Audit Office, 2009, 22.
55 Comptroller and Auditor General, National Audit Office, 2004b, 5.
56 Comptroller and Auditor General, National Audit Office, 2009, 23.
57 House of Lords Select Committee on Economic Affairs, 2010a, 180.
of £ 19.4 million and the margin on interest charged of £ 11 million.\textsuperscript{58} There was some defence offered in favour of the banks by Steve Allen, who said “\textit{When we were negotiating with the Metronet banks... we found that they did care about losing 5% of their money...}” This negates the idea that the banks would just walk away and wash their hands of the PPPs if there was trouble.\textsuperscript{59}

Despite the claims made on behalf of the lenders, certain actions of the banks point towards a complacent approach. Under the terms of the PPPs, LUL and Metronet could jointly request the Arbiter to produce an annual report on the economy and efficiency, and good industry practices followed by the Metronet Infracos. The Arbiter did not have the power to unilaterally produce such a report, and both LUL and Metronet agreed not to seek it. Per the terms of the lending agreements, Metronet secured a waiver from the banks from seeking the Arbiter’s annual report for 2005, which had the potential to publicly highlight issues with Metronet’s poor performance.\textsuperscript{60} Furthermore, in case of cost overruns, the lending agreement terms gave the lenders certain rights to secure information and become more involved in decision-making processes at Metronet. In this respect, from March 2006 the banks consistently waived the right they had to stop Metronet from drawing down its debt.

Commenting on such waivers by the lenders, the Arbiter said, “\textit{I am surprised that they did not exercise those rights sooner and more vigorously than they did.}”\textsuperscript{61} Finally, it is also posited that the banks stopped further withdrawal of funds by Metronet only after they were told that further lending might not be covered by the 95% guarantee.\textsuperscript{62} These actions along with NAO’s analysis of the banks’ money at risk, clearly indicates that the key benefit of project finance – the effective supervision of the management of the project company by lenders – was non-existent in the case of the Metronet PPPs due to the high level of government guarantees provided to the lenders.

\textsuperscript{58} Comptroller and Auditor General, National Audit Office, 2009, 22.
\textsuperscript{59} House of Lords Select Committee on Economic Affairs, 2010b, 180.
\textsuperscript{61} House of Commons Transport Committee, 2008, Ev 3-4, 7.
\textsuperscript{62} House of Commons Transport Committee, 2008, 11, Ev 24-25.
Having found that the high level of guarantees created a situation of moral hazard, it is useful to look into the circumstances in which the government guarantee was incorporated into the PPPs and what lessons this provides. Reflecting on circumstances in which such high guarantees were given by the public sector, Steve Allen said “there was a perception at the time that this was what was required, you had three large contracts to design and a limited appetite in the bank market to provide that debt and they wanted some contractual underpinning in order to take on those risks. I am not sure that the economic arguments were very strong; I think it was more a pragmatic argument of what you needed to do in order to sign a contract.”63

In essence, the agreement to increase the level of the government guarantee to the banks from the original 90% to 95% occurred at quite a late stage to fundamentally get the contract closed. As an important lesson for the future, Allen said, “I would say that when somebody says that in order to get these contracts away we need to be able to offer this sort of underpinning to the banks that is telling you something about the complexity of the structure that you are trying to let and that should be a very strong warning light that this is not a contract that can be let to the market on a sensible basis.”64 In a telling reproach of the U.K. government’s actions, the Select Committee on Economic Affairs of the House of Lords recommended that the public sector should not guarantee large proportions of debt in order to make highly leveraged PPP projects happen.65

4.3. Tying Together a Fatal Combination

Whereas the Metronet PPPs drew constant criticism for their poor performance right from the beginning, the financial failure of the Metronet Infracos was the final nail in the coffin of the mandarins of LUL PPPs. A poorly structured supply chain and high level of government, two integral features of the Metronet PPPs, structurally flawed as they were, together contributed towards a monumental fiasco. The U.K. government having implemented a number of PFIs through the 1990s, one would have expected that the experience of implementing PFI projects would come in handy in the structuring of the Metronet PPPs. In the light of the failure of Metronet, LUL reckoned that at the time of entering into the PPPs, two assumptions were made about controls within Metronet’s structure: that shareholders would collectively prevent rogue

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63 House of Lords Select Committee on Economic Affairs, 2010b, 180.
64 House of Lords Select Committee on Economic Affairs, 2010b, 180.
behaviour within the tied supply chain arrangement, and that the lenders would impose effective financial discipline if Metronet’s management did not. Unfortunately, both these assumptions proved to be wrong.66

There is nothing inherently problematic when sponsors of an infrastructure project are commercially involved through construction, supply chain or management contracts, or if subcontractors have an equity involvement in the project. However, the inability of the designers of the PPPs to foresee the complete implications of the tied supply chain arrangement, especially in the light of the potential for cost overruns and the high level of the government guarantee, was fatal.

This episode highlights the importance of aligning risks and incentives in PPPs, especially in project finance transactions. With a significant portion of cost overrun risk locked up in the Metronet Infracos and the public sector guarantee of Metronet’s debts, the public sector eventually bore much of the risk. In fact, it was posited that the public sector did not completely comprehend the risk allocation under the PPPs. The Arbiter, Chris Bolt said, “… I think there has been some misunderstanding about the scale of risk transfer from the public sector to the private sector.”67 A poor comprehension of risk transfer negates the purported value for money a PPP seeks to achieve. A leading commentator on PPPs warned the public sector to “be careful to avoid entering into PPP arrangements whose financial implications are misunderstood, or not understood at all, thus undermining the benefit of the PPP.”68

Projects sponsors often have incentives to finance PPPs with a high ratio of debt to equity (leverage) because this typically enables equity investors to achieve higher rates of return. The flip side is that highly leveraged projects are more vulnerable to default and bankruptcy,69 because when “the shareholders have a very limited amount of equity in the company there comes a point when actually they would rather let the company fail than continue…”70 With the risk transfer to the sponsors limited to the extent of their equity investment, one way to avoid

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68 Yescombe, 2007, xv.
70 House of Lords Select Committee on Economic Affairs, 2010b, 180.
complacency is for the public sector to ensure that the sponsors contribute a larger equity stake in the project through a minimum equity ratio. Such a stipulation is particularly important when the government is guaranteeing lenders’ investments.\(^{71}\)

In the case of LUL PPPs, with much of the risk borne by the public sector, Metronet’s shareholders mostly stood to gain from tied supply chain and potential cost overruns (subject to the Arbiter’s approval) as only their equity of £ 350 million (£ 70 million for each shareholder) was exposed to risk. While a tied supply chain arrangement is not a bad idea in itself, the designers of the PPPs should have foreseen the negative impact of combining it with a high level of government guarantee. With the default of debt not being an issue of concern for them, Metronet’s shareholders sought rewards not only from their equity investments but also from the supply chain contracts. Supervision by the lenders, which was supposed to act as a check against the abuse of supply chain contracts, failed because the banks had little to lose from the collapse of the PPPs in light of the extremely high level of government guarantee of Metronet’s debts.

5. Conclusion

The episode of the Metronet PPPs indicates that even in the light of the U.K. government’s history with PFIs, no amount of prior experience or examples will assure a foolproof structure. Every PPP structure, including the allocation of risks and incentives, needs to suit the circumstances of each individual case. A holistic approach to risk allocation that takes into consideration the overall implication of the different features of a PPP is needed. Features that worked in earlier transactions will not necessarily work in the future, especially if the enabling conditions of the prior transaction are not present. These are important lessons for professionals involved in the design and structuring of future PPPs, where significant amounts of taxpayer money are at stake.

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