

EVALUATING THE PERFORMANCE OF PRIVATE FINANCING AND TRADITIONAL PROCUREMENT

SUMMARY REPORT FOR THE ANALYTICAL
FRAMEWORK PILOT PROJECT

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In brief

Using different procurement models where they are best suited should ensure that government can maximise the benefits from infrastructure. The National Infrastructure Commission's analytical framework is designed to develop insights into the merits and shortcomings of procurement models. It requires a robust evidence base of costs and benefits, and data is key to gaining a better understanding of infrastructure investment outcomes. Data collection has been best on privately financed projects. Analysis of costs and benefits of procurement models enables transparency and public accountability, so data for traditionally procured projects needs to continue to improve.

This document sets out the National Infrastructure Commission's summary findings from the pilot application of the analytical framework for assessing procurement models set out in the National Infrastructure Assessment. The Commission collaborated with Highways England on the pilot, using data from five road projects delivered by private financing and traditional procurement. The pilot built on earlier work comparing private financing and traditional procurement performance in the construction phase. The Commission has extended this in making the case for whole life and balanced analysis of costs and benefits of procurement models.

The Commission proposes that the analytical framework is used by public bodies to analyse the costs and benefits of financing and procurement models. The analytical framework should also support project appraisal decisions.

The availability of data is key to robust analysis and the Commission reiterates its recommendation in the Assessment for public bodies taking decisions on strategic economic infrastructure to publish the forecast costs and benefits of their major infrastructure projects at each appraisal stage and to publish outcome costs and benefits at a suitable point after completion. Similarly, the risk transfer relationship for privately financed projects must not be a barrier to key data being shared with public procurers. This report presents the limitations the Commission faced in developing its analysis but demonstrates the insights that can nevertheless be developed. The UK has the opportunity to lead the way in developing approaches to analysis and thus benefit from the best procurement models.

Introduction

The National Infrastructure Assessment identified the need for a better understanding of the costs and benefits of private financing and traditional procurement in the delivery of publicly funded infrastructure. The Commission developed an analytical framework to facilitate development of this understanding, and proposed a pilot of the framework to develop insights on its practical application and identify where it needed to be revised. This report sets out the impact of the pilot findings on the National Infrastructure Assessment proposals and presents an updated analytical framework and lessons to inform future practice. A technical annex provides detail on the pilot methodology and findings.

Background

The rationale for using private finance and skills in infrastructure investment in the UK was driven by a combination of factors. It followed a poor record on traditional procurement delivery. A government survey in 1999 showed 73% of projects exceeded contract prices, and 70% of projects missed the target completion date.¹ The private financing of infrastructure allowed the government to transfer risks associated with project delivery.

Engaging the private sector in infrastructure investment was also a response to the need for capital investment. In the roads sector, faced with funding shortfalls, the Department of Transport in the 1980s explored how the private sector could be engaged on new schemes and upgrades to existing roads.² The New Roads and Street Works Act (1991) gave ministers permission to engage the private sector in developing highways and bridges.

Lastly, the use of private risk capital in the delivery of public services is understood as part of a wider programme of ‘rolling back the state’ that occurred in the transport sector in the 1980s.³ This led the government to look for alternatives to traditional procurement.⁴ Some £51bn of private finance contracts (nominal capital value as at 31st March 2017 and excluding devolved governments⁵) have been used to deliver public infrastructure. Of this £11bn relates to economic infrastructure in the transport and waste sectors.

The Commission's recommendations for investment in economic infrastructure are made in line with consideration of the fiscal and economic remit that has been set by government. The fiscal remit mandates that the Commission's recommendations for the UK's gross public investment in economic infrastructure need to be within between 1.0% and 1.2% of GDP in each year between 2020 and 2050. The Commission must also demonstrate consideration of the impact of its recommendations on bill payers under the economic remit, including the bills paid by the public sector, such as unitary payments under the private finance initiative. Not all the UK's future infrastructure pipeline will be delivered by public financing. At least 30% of the Infrastructure and Projects Authority's infrastructure pipeline (which includes projects outside the scope of the Commission) to 2028 will be delivered by private financed investment, and 15% by the regulated utilities.⁶ Other investments may be best be procured in partnership between the public and private sectors.

The Commission recognises that private financing and traditional procurement are inherently two different models. This presents a challenge to comparing costs and benefits. The multiple objectives of the Private Finance Initiative (PFI) policy influenced by political processes adds further complexity to evaluating policy and project outcomes.⁷

Notwithstanding these limitations, developing an evidence base of costs and benefits of procurement models is still important to support efficiency in infrastructure investment and adoption of best practice. The Commission is engaging internationally with organisations developing approaches to evaluating outcomes under private financing and traditional procurement to share lessons. The international initiatives reflect a focus on developing greater understanding of costs and benefits of procurement models and improving public accountability.

The UK has historically relied on a mixed model of public and private financing of its infrastructure investment requirements.⁸ In Autumn 2018 infrastructure procurement through the Private Finance Initiative and Private Finance 2 (PFI/PF2) model was withdrawn. Capital investment through PFI/PF2 in the last twenty years averaged £3bn a year, and current public investment is £50bn annually.⁹ Although small in its contribution to total capital investment in infrastructure (economic and social), PFI/PF2 was one of the routes by which private finance was channeled to support infrastructure investment. PF2 was only used on six projects.¹⁰ The 'buy now, pay later' nature of procurement through private finance delivered a timing benefit to public sector procurers but created a long term liability for the taxpayer. In the 'buy now' phase, when use of private finance was rising, PFI was popular. As the 'pay later' element has become more obvious, challenges with use of the model have been faced, and political scrutiny raised as investor returns from operations, refinancing, and secondary market sales have become known.

Legal and institutional frameworks, accounting standards, political preferences, and the role of public sector unions are factors that may create a bias towards use of private financing or traditional procurement.¹¹ Analysis by the European Court of Auditors shows the lack of robust analysis of procurement options in some countries has in part led to inappropriate use of the private financing model. The outcome has been projects being overbudget and overtime, and assets underutilised.¹² The case studies in the European analysis are not exactly representative of UK practice as they look at countries with less developed private financing markets. Government fiscal targets¹³ and budget considerations by departments¹⁴ are seen as having contributed to a preference for private financed procurement in the past. The off-balance sheet nature of private financing misrepresents the underlying public finance position¹⁵, creating ‘fiscal illusions’.¹⁶ An improved fiscal position from use of private financing only arises if the expected efficiency benefits are realised.¹⁷

Long term value for money and consideration of whole life factors in selecting procurement strategy needs to be the priority in future. Appraisal of private financing options is on a whole life basis. The same is not necessarily applied to traditional procurement.¹⁸ The analytical framework represents best principles to be considered in procurement decision making irrespective of the procurement model selected. Emphasis on best practice principles supports time-neutral procurement and consistent practice.

National Infrastructure Assessment proposal

An analytical framework for the whole life evaluation of costs and benefits of private financing and traditional procurement was developed by the Commission and presented in a technical annex published alongside the Assessment. The G20 have developed a set of principles promoting quality infrastructure investment.¹⁹ The emphasis of the framework on whole life costs and benefits aligns with one of those principles (raising economic efficiency in view of life-cycle cost). The Commission proposed a pilot of the analytical framework to develop insights on the practical application of the framework and identify where it needed to be refined. Following the pilot, it is the aim of the Commission to develop a consistent evidence base of costs and benefits of private financing and traditional procurement through more detailed analysis.

Background to the development of the analytical framework

Making balanced performance evaluations over the whole life of projects should allow different financing and procurement approaches to be used where they are most beneficial. Analysis of performance outcomes under private financing and traditional procurement has to date focused on construction phase performance only – see Appendix 1. This focus reflects the period when the evaluations were completed. The private financed projects were still in the early years of operation. The Commission's work shows the lack of an evidence base, particularly on public financed projects, has led to the focus on a single dimension, usually short-run cost, as a basis for evaluating the merits or shortcomings of different procurement models. Infrastructure is an enabler of economic and social activities. The evaluation of investment outputs and wider user outcomes needs to account for broader measures of performance in addition to cost.

Pilot with Highways England

Highways England have collaborated with the Commission on a process pilot²⁰ of the analytical framework. The selection of Highways England was based on feedback received from stakeholders, with Highways England held up as an exemplar in data collection. There was considered to be a benefit to applying

the analytical framework to broadly homogenous infrastructure assets such as roads. The pilot commenced in Autumn 2018 looking at five projects managed by Highways England (three delivered by private financing and two by traditional procurement). An Advisory Group meeting over the course of the pilot provided independent challenge to the work. A [technical annex](#) sets out in detail the methodology adopted in selecting projects for the pilot and presents the analytical results.

Main finding: Differences in level of data on private and public financed projects

Data on projects delivered by traditional procurement was limited. This is in part explained by the age of some of the projects selected for the pilot. Further, under traditional procurement, data may be held at the portfolio level (national or regional) making it difficult to access project level data.

The European Centre for PPP Expertise (part of the European Investment Bank) undertook an exploratory comparative analysis of private financing and traditional procurement looking at projects across member states that have used European Investment Bank financing, finding a similar experience relating to availability of data on public financed projects. Improvements in information technology mean retention and management of data by public procurers is getting better.

Better data was available on the private financed schemes. This is influenced by the contract provisions for monitoring and reporting. However, the analytical work highlights areas for future improvement on these projects such as the availability of data on outturn construction costs. Generally, this data is not shared with the public procurer, a reflection of the risk transfer relationship. Where data helps the public procurer gain a better understanding of project performance and the efficacy of a procurement model, sharing this data in future will be a step in the right direction. Improved transparency provisions on PF2 contracts has enabled better analysis of project returns by public bodies.²¹ Appendix 2 is a summary of the data sources used in the pilot analytical work.

The findings from the pilot support the recommendation the Commission made in the Assessment for collection of data on project costs and performance at each appraisal stage and on project completion.²² Where this data is reported at the portfolio level, there is a case for data management systems to be designed in a way that allows project and asset level data to be accessed easily. Data enables the analysis which informs understanding of procurement model performance allowing benchmarking and for lessons to be learnt to improve future practice. Better data collection supports improved risk pricing efficiency, limiting the likelihood of large premiums in contractor bid prices.²³

Implication of main finding on Assessment proposals

Refinement of the analytical framework

Following the pilot, discussion with the Advisory Group suggest there are no significant gaps in the design of the analytical framework, with a few areas proposed for refinement:

Development and refinement of the analytical framework

The analytical framework for evaluating the performance of private financing and traditional procurement– Appendix 3, put forward in the National Infrastructure Assessment was developed in consultation with stakeholders from industry, government, and academia. It proposed that the analysis of costs and benefits of private financing and traditional procurements should:

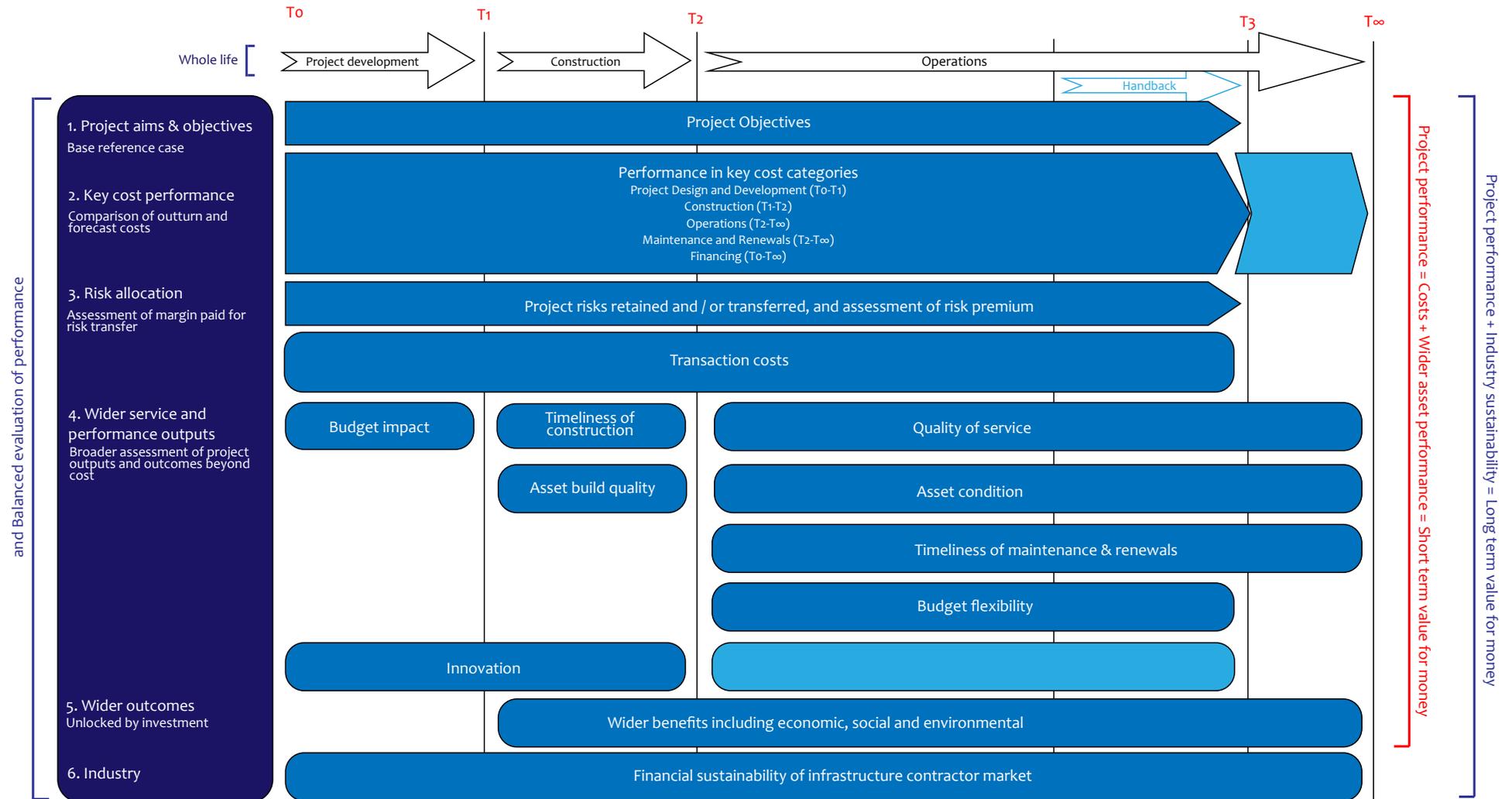
- be over the whole life of the project from the development phase to decommissioning.
- consider the wider context of the economic environment and industry. Including the industry in the analysis recognises the risks transferred down the supply chain. Good project performance and a sustainable industry will lead to long term value for money being realised over the life of projects.
- move beyond the focus on financial measures as a reflection of overall performance by taking account of the wider outputs and outcomes the project is delivering - these include the quality of services, asset quality and condition, and the project management practices enabled by the procurement route such as innovation.

The data provided by Highways England and the project companies (managing the private financed projects) was used to understand the performance of the projects in the dimensions of the framework. Where data or research evidence was limited, such as on innovation outcomes, a qualitative exploratory approach was adopted.

Proposed areas for refinement emerging from discussion of the pilot findings with the Advisory Group are:

- inclusion of the project objectives as a dimension of the framework. This provides the base case against which a project's outputs and outcomes are evaluated. Public financed projects have multiple objectives and seek to drive economic and social outcomes.
- providing explanatory notes to dimensions of the framework and recognising that operations phase activities will be impacted by sector specific characteristics.
- retaining the 'Wider outcomes' dimension in view of growing interest in environmental, social, and governance (ESG) outcomes despite this being one of the areas where lack of data limited analysis.

Figure 1. Infrastructure Procurement



The Commission proposes the refined analytical framework – Figure 1 – is used for ex-post evaluation of costs and benefits of private financing and traditional procurement by public sector bodies in future. The framework is also proposed as an aid to supplement procurers project appraisal considerations.

Explanatory notes to analytical framework (Figure 1)

Evaluation of costs and benefits is over the whole life (T_0 to T_∞) of a project. The ‘Handback’ period applies to private financed projects and reflects the period in which the asset approaches its return to the public procurer’s ownership.

1. The business case sets out the project aim and objectives and is the base reference case against which to evaluate actual costs and benefits, both financial and non-financial.
2. Project costs will include decommissioning costs at the end of the asset’s life, or further capital costs where a procurer decides to refurbish the asset for its continued use. The level of project design and construction costs are influenced by whether a project is a greenfield investment or improvement to an existing brownfield asset.
3. Analysis of risk allocation and consideration of whether ex-post outcomes demonstrate that risk was transferred in practice and if the premium paid represents value for money.
4. In a context with higher operational activity such as staffing in social infrastructure, there may be further performance criteria to be considered to evaluate performance under the ‘Wider service and performance outputs dimension’. Transaction costs should be considered over the project life. At T_0 these involve project origination costs and advisers’ fees for contract drafting for example. At T_1 they include financing arrangement fees including for hedging instruments such as interest rate swaps. In the operations phase starting at T_2 , contract management, benchmarking, market testing, technical advice for improvements to projects, and financial advice for refinancing on private financed projects are considered as transaction costs.
5. Infrastructure is an enabler of social and economic activities. Wider outcomes relate to analysis of economic, social, and environmental benefits. The Commission’s work on [Measuring Infrastructure Performance](#) provides guidance and proposed metrics for evaluating outcomes in some of these areas.
6. Long term value for money is supported by a healthy and competitive infrastructure contractor industry. Value for money is defined as ‘the optimal combination of quantity, quality, features, and cost (price) expected over the whole project’s lifetime’.²⁴

The distinction in cost considerations between greenfield and brownfield projects proposed in the initial framework is now included in the explanatory notes. Reflecting the experience of the project companies managing the private financed projects, innovation is shown as highly likely in the project

design and construction phase. Transaction costs span the life of the project and include contract management. This reflects transaction cost theory. Contract management and monitoring is an important role as the state has moved from being a provider of services to procurer and regulator.²⁵

Developing detailed analysis

The limited availability of data on the public financed projects means progressing to the Commission's second objective of developing a robust evidence base of costs and benefits of private financing and traditional procurement using roads projects is not realistic in the short term. Application of the framework in a different sector may enable further insights to be drawn. The Advisory Group highlighted the potential for further modification of operations phase considerations if the analytical framework is applied in sectors with high operations activities such as social infrastructure. Use of the framework in another infrastructure sector may show different outcomes regarding data availability on public financed projects. It may also enable the detailed analysis that will support development of an evidence base of costs and benefits of private financing and traditional procurement. The Cost Benefit Analysis tool informs project selection and has developed over time. A similar tool for procurement selection²⁶ that has been designed from a robust evidence base is required.

The incompleteness of data to enable robust analysis poses a challenge to improving transparency on project performance. The Advisory Group acknowledged the risk of misinterpretation of analysis published in the public domain where analytical work has been constrained by lack of data. There was consensus on the need for transparency to improve public accountability regardless of data limitations faced.

Lessons to improve future practice

The pilot highlights lessons that can be applied to inform future practice.

The benefit of learning

Highways England's private finance roads contract has evolved over time, becoming more fine-tuned in the payment mechanism for example, to delivering outputs aligned with Highways England's priorities of managing the strategic road network effectively and safely. This reflects the learning benefits at a programme level associated with a new procurement model. Some of the early roads private financed projects were not necessarily seen as priorities in the capital programme, being put forward to test the private sector's appetite for different projects²⁷ and were not the most suitable for private financing. This needs to be accounted for in the evaluation of their performance and drawing conclusions on costs and benefits of the private financing model. The evidence of a learning benefit adds emphasis to the importance of taking a long term strategic view to the design of procurement models.

Adopting a whole life asset management approach

The benefit of integration of construction and operations activities on private financed contracts depends on the expected trade-off between additional construction costs and operations and maintenance savings.²⁸ A whole life costing approach ensures investment in maintenance and renewal is considered alongside initial capital investment decisions. From an asset management perspective, the objective is to ‘spend now to save later’.²⁹ Short termism in maintenance decision making on public financed projects in response to funding pressures needs to be balanced against the longer term economic cost of bringing assets back to a good condition.

The existence of robust asset data delivers benefits in the initial phase of a project, prior to bidding. On the Hounslow local authority private financed roads maintenance contract, the data from the asset management system provided bidders with visibility of asset inventory and condition. This improved risk pricing discussions between the local authority and bidders.

Innovation supports whole life costing and asset management. The qualitative evidence from the pilot shows realisation of innovation is influenced by a number of factors such as technical specification, the risk averse nature of providers of debt financing, and the balance between capital and maintenance investment on projects.

Addressing the flexibility challenge

Long term contracts with high termination costs are a challenge to public procurers, constraining their flexibility to respond to changes to service requirements and cyclical budget pressures. In principle, private financed contracts may have room for a degree of flexibility such as on service outputs. However, this may impact the initial risk allocation.³⁰ The operations and maintenance cost benchmarking work highlights the potential for retendering of services delivered under long term contracts to ensure these still represent best value.

The greater flexibility of traditional procurement can provide a benefit. However, short term funding allocations to address maintenance backlogs do not encourage strategic use of resources. Last-minute funding to address the Department of Transport’s maintenance backlog from the mid-1990s was announced in an Autumn budget. This meant works with long lead times certainly could not be incorporated in the maintenance programme.³¹ In addition, maintenance is not usually undertaken in the winter period. Rescheduling of works also means less sustainable maintenance and renewals choices are selected.³²

Conclusions and next steps

The collaboration with Highways England on the pilot has enabled the Commission to identify where the analytical framework proposed in the National Infrastructure Assessment needed refinement. It has allowed the Commission to build upon previous analysis of private financing and traditional procurement which have focused on the construction phase performance (cost and time), and demonstrated the potential to develop whole life and balanced analysis of procurement models.

The pilot has highlighted the challenge of evaluating costs and benefits of private financing and traditional procurement retrospectively, and using old projects. The main challenge faced has been the limited data on the public financed projects. In part this is due to data being held at a portfolio level (national or regional) such as is the case with network infrastructure. This makes it difficult to access project and asset level data. The pilot shows there is a better record of data collection on private financed schemes. These projects are managed as discrete schemes and have contract provisions for monitoring and reporting. There are areas for improvement on these projects where data is not usually shared with the procuring authority because of the operation of the risk transfer relationship.

The data availability challenge means the Commission's objective of progressing to developing an evidence base of costs and benefits of private financing and traditional procurement is not possible in the short term. The findings on data availability lend further support to the Commission's recommendation in the Assessment for public procurers to collect project data during the appraisal stages and on project completion. This will improve transparency and public accountability and allow lessons to be learnt to improve future practice. The pilot has highlighted the potential insights that can be drawn if practice in data collection improves to enable robust analysis of procurement models' outcomes in future. An evidence base of costs and benefits of private financing and traditional procurement will support efforts to develop procurement selection decision tools. Better data also presents the opportunity to improve the public sector's insights on risk transfer and pricing. This will have relevance to traditional procurement which involves use of contracts and transfer of risk.

The Commission will seek to apply the framework in different contexts, engage with partners internationally to share its experience, and seek to advance efforts to improve practice on project data collection. Lessons and insights can be drawn from the pilot to inform the strategic use of private

and public financing of infrastructure investment in future. The analytical framework sets out best principles to inform procurement decision making that reflects long term and sustainable considerations.

Further research

Competitive tension between alternative infrastructure contractors is key to delivering long term value for money and this is reflected in the inclusion of the ‘Industry sustainability’ dimension in the framework. There was consensus in the Commission’s work on the Assessment and in discussions with the Advisory Group on the importance of this dimension to supporting long term value for money. However, because of the complexity of developing analysis of this area over the short duration of the pilot, no analytical work was undertaken. The dimension is retained as a part of the analytical framework because of its perceived importance, and it is put forward as an area for further research and analysis.

The qualitative review of innovation has provided insights into drivers for innovation. Innovation is key to unlocking efficiency improvements under both private financing and traditional procurement. Further research is required to explore drivers of innovation, including consideration of the impact of risk transfer. The allocation of risks down the supply chain may limit collaboration and partnering between suppliers reducing the likelihood of innovation³³ as project companies enter into turnkey, date and price specific contracts.³⁴

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Appendices

Appendix 1: Previous reviews of private and public financing performance

Appendix 2: Data availability findings on projects in pilot

Appendix 3: Analytical framework proposed in National Infrastructure Assessment

Appendix 1: Previous reviews of private and public financing performance

Study	Results
PFI, <i>Construction Performance</i> , National Audit Office Study (2003)	<ul style="list-style-type: none"> • Price certainty was realised. 29 out of 37 projects did not have price increases after the contract was awarded • 28 out of 37 projects in the census were delivered on time or earlier • Departments were mostly satisfied with design and performance of the assets
<i>Performance of PPPs and Traditional Procurement in Australia</i> , The Allen Consulting Group Report (2007)	<ul style="list-style-type: none"> • Between contract signing and project completion, on average PPPs were completed 3 per cent ahead of time and the traditionally procured projects were 24 per cent behind time • On a PPP contracted value of \$AUD5bn, the cost overrun was \$AUD58m. On traditional procurement with a similar contracted value, cost overruns were \$AUD673m
<i>Ex-ante construction costs in the European Road Sector: A comparison of Public Private Partnerships and Traditional Public Procurement</i> , Fredric Blanc-Brude, Hugh Goldsmith and Timo Valila, European Investment Bank (2006)	<ul style="list-style-type: none"> • Premium on PPP construction costs of 24 per cent • Cost overruns on traditional procured of 24 per cent • The limitation of this study is that bid prices were used for the traditional procurement route. These are subject to change as the project is developed. Private financed projects costs were based on costs nearer financial close which are more certain
<i>Report on the performance of PPP projects in Australia when compared with a representative sample of traditional procured infrastructure projects</i> , National PPP Forum (2008)	<ul style="list-style-type: none"> • Post contract cost escalation on PPPs of 4 per cent, and 18 per cent on traditionally procured projects • Relative to the actual delivery date, there was a 26 per cent average delay on traditionally procured projects completing construction work. In the lead up to financial close, PPP projects are delayed on average by 15 per cent. After financial close on average there is a 3 per cent delay to these projects • Better cost performance of Australian traditionally procured projects relative to UK. 43 per cent of projects within 5 per cent of budget estimates, against 27 per cent in the UK

Appendix 2. Data availability findings on projects in pilot

Data sources were considered as a robust source of evidence where there was an audit trail; they were prepared as part of statutory reporting processes; and where triangulation evidenced to the same fact.

Private financed projects

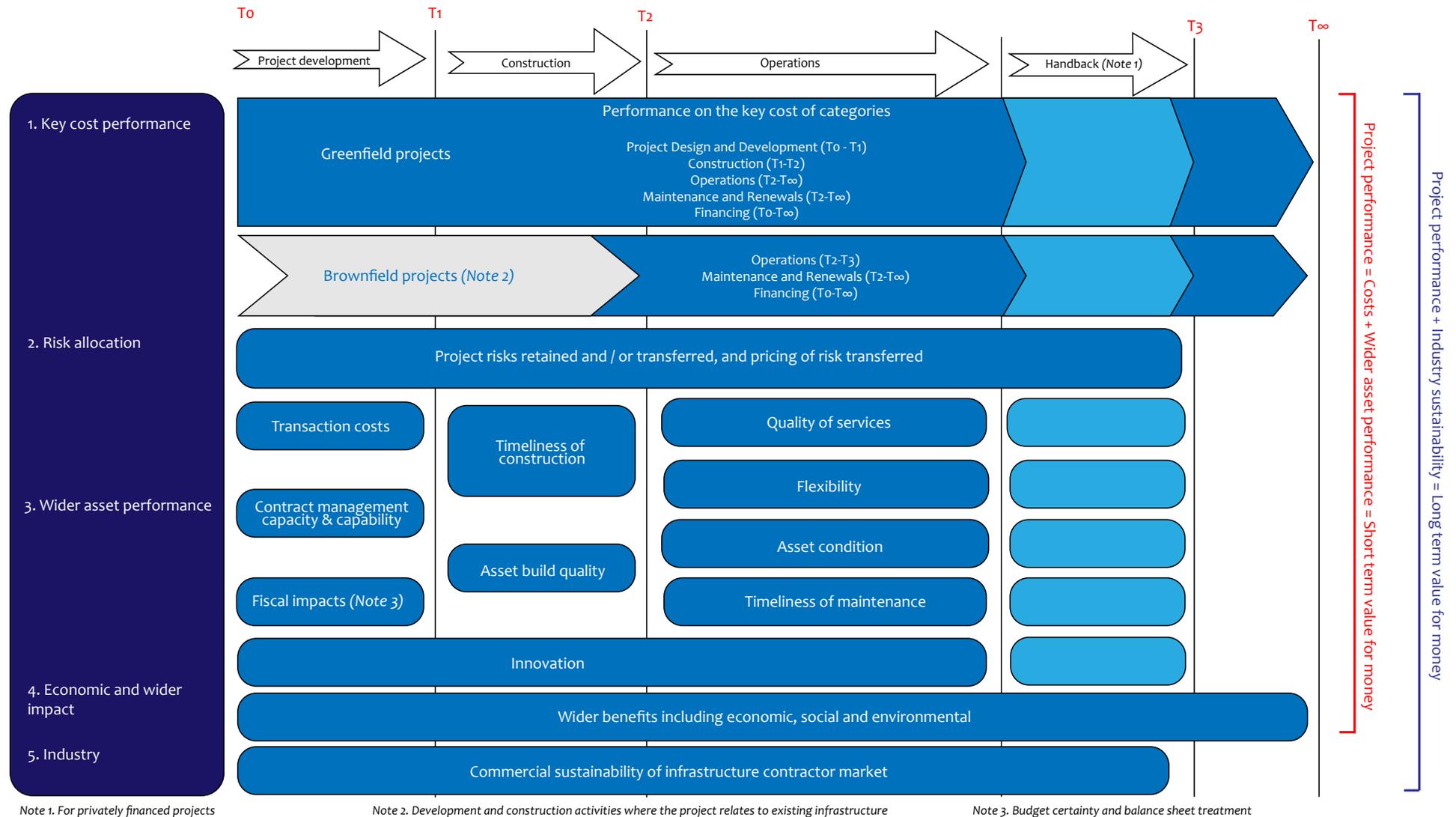
	Data Source	Type of analysis
Key cost performance	<ul style="list-style-type: none"> Financial close models Project company financial accounts from inception to date Highways England analysis of unitary charge payments and regional area operations and maintenance costs Design, Build, Finance and Operate (DBFO) contract. A form of PFI contract 	Quantitative
Risk allocation	<ul style="list-style-type: none"> DBFO contract Financial close models Actual traffic data on Tranche 1 schemes Unitary charge payment analysis Performance deductions data Tender evaluation files for M1/A1 and A419/417 (provided by Department for Transport) Change registers Project company financial accounts from inception to date The Private Finance Initiative: The First Four Design, Build and Finance Operate Roads Contracts, National Audit Office (1998) 	Quantitative and Qualitative
Wider asset performance	<ul style="list-style-type: none"> DBFO contract DPI (DBFO Performance Indicators) Reporting from 2011 to date Project Opening Post Evaluation (POPE) reports Project company annual statutory accounts PWC Contract Management Review report of Highways Agency DBFO contracts (2015) Pavement survey results Operations and Maintenance reports provided monthly to Highways England 	Qualitative

Innovation	<ul style="list-style-type: none"> • Semi-structured interviews with the project companies (RMS Gloucester Ltd, RMS Darrington Ltd, and Connect Plus M25 Ltd); Hounslow Highways Ltd; the Institution of Civil Engineers (ICE); and Chartered Institution of Highways Transportation (CIHT) • Tender evaluation documents for the M1/A1 and A419/417 projects (provided by Department for Transport) • DBFO contract • The Private Finance Initiative: The First Four Design, Build and Finance Operate Roads Contracts, National Audit Office (1998) 	Qualitative
Wider outcomes	<ul style="list-style-type: none"> • Project Opening Post Evaluation reports (for Tranche 2 schemes) • Operations and Maintenance reports • DPI (DBFO Performance Indicators) Reporting from 2011 to date 	Qualitative

Traditionally procured projects

	Data/Information sources	Type of analysis
Key cost performance	<ul style="list-style-type: none"> • Project Opening Post Evaluation (POPE) reports. These disclose construction costs only. 	Quantitative
Risk allocation	Not applicable to schemes	
Wider asset performance	<ul style="list-style-type: none"> • POPE reports (such as on traffic flow outcomes) • Internal analysis provided by Highways England operational area team (pavement intervention costs on A43 improvements only) 	Qualitative
Wider outcomes	<ul style="list-style-type: none"> • POPE reports , covering economic outcomes (including regeneration benefits), environmental, and social (include accessibility) 	Qualitative

Appendix 3: Analytical framework proposed in the National Infrastructure Assessment



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