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Public Private Partnership (PPP)– a project delivery method that risks becoming expensive for the central government

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In this Debt Office Commentary, we analyse the Public Private Partnership (PPP) project delivery method from a central government perspective.[1] *Simplified, PPP involves a private company, through a separate project company, receiving an assignment to implement a government infrastructure in its entirety. The project company is also responsible for a bridging financing that is repaid by the ordering party over a longer period. Our analysis focuses mainly on fiscal effects, financing costs and possible socio-economic benefits. Our assessment is that the possible socio-economic benefits of PPP are uncertain and difficult to justify in relation to the disadvantages of this project delivery method. The disadvantages mainly consist of clearly higher financing costs and a worsening in government budgetary discipline and transparency. We therefore conclude that the central government should refrain from using PPP*

[1] The views expressed in this edition of Debt Office Commentary are the authors' own and should not be perceived to be the Swedish National Debt Office's view of these matters. The Commentary has been produced in consultation with an editorial team consisting of Jill Billborn, Mårten Bjellerup and Ellen Karlberg, which has provided good guidance. Furthermore, the authors would especially like to thank Niclas Elofsson for his great help with the analysis and fruitful discussions. The authors would also like to thank and Peter Englund, Nils Gottfries, Hans Lindblad, Mattias Persson, Magnus Rystedt and Anna Seim for their valuable opinions during the course of the work.

1. Introduction

A well-functioning infrastructure, such as roads and railways, is important for economic growth. However, large government infrastructure investments are costly. If the rate of infrastructure investment is to be significantly increased, this means that other central government budget expenditure needs to be given lower priority to a relatively large extent.

Against this background, the project delivery method Public Private Partnership (PPP) is sometimes put forward as a solution to be able to implement a larger number of infrastructure investments. This is partly because PPP involves an investment initially being financed by private capital, with the government repayment of this being pushed forward in time, thereby burdening central government budgets to a lesser extent in the immediate future. Proponents of PPP also point out that, in comparison with other project delivery methods, the use of private capital brings socio-economic efficiency gains in construction, operation and maintenance.

Several government investigations and reports have dealt with PPP, some of which have advocated making greater use of this project delivery method, or at least testing it.[2] Nevertheless, PPP is rare in Sweden. It is likely that one reason for this is the assessment that PPP solutions risk being expensive for the ordering party. Another is that public finances have been strong and continue to be so, which reduces the incentive to use financing solutions that push investment costs into the future. In some other European countries, such as the UK, France, the Netherlands and Portugal, the use of PPP has been much more common than in Sweden.

This Debt Office Commentary analyses the advantages and disadvantages of PPP. Much of the reasoning is conducted on a theoretical basis, but there is also some supporting empirical evidence from countries where more PPP projects have been implemented. The analysis is based on a central government perspective and focuses on transport infrastructure investments. However, PPP can occur throughout the public sector and is also used in the construction of hospitals, schools, prisons, etc. Regardless of the type of public ordering party and investment, the arguments for and against are often similar. For example, the much-publicised New Karolinska Hospital (NKH), commissioned by Stockholm County Council (now Stockholm Region), is one of the few Swedish PPP projects to have been implemented.

By way of introduction, the different project delivery methods used in infrastructure investments are described together with their distinguishing characteristics. This is followed by a description of the implications of using PPP in terms of government fiscal measures, budgetary discipline and transparency. The subsequent section contains an account and analysis of the advantages and disadvantages of PPP from a socio-economic perspective. Finally, our conclusions are presented.

[2] See for example Swedish Government Official Report SOU 2017:13 and department memorandum 2000:65.

2. Project delivery methods for infrastructure investments

The project delivery methods used in the infrastructure sector, such as in the construction of a new road, can be simplified into five main groups: *traditional contracting*, *turnkey contracting, functional contracting, functional contracting with overall commitment and PPP*, see figure 1.[3]

Figure 1. Project delivery methods – the contractor's commitment

Traditional contracting	*Turnkey contracting*	*Functional contracting*	*Functional contracting with overall commitment*	*PPP*
• Execution	• Execution • *Detail planning*	• Execution • Detail planning • *Maintenance (extended guarantee period)*	• Execution • Detail planning • Operation and maintenance for a long period • *System planning (partly)*	• Execution • Detail planning • Operation and maintenance for a long period • System planning (partly) • ***Private financing***

Source: The Swedish National Debt Office.

A *traditional contract* means that the public ordering party performs detailed project planning, usually through a separate procurement of this service. In the next stage, one or more contractors are procured to implement the project. The responsibility for coordination can be given to the contractor, who in turn procures subcontractors. Alternatively, the ordering party takes care of the coordination. The traditional contract has long been the dominant project delivery method for investments in transport infrastructure. The principle is that the ordering party requests that a particular volume of resources be allocated based on a detailed project description. In a *turnkey contract*, the ordering party procures a contractor that performs both planning and construction. The contractor can therefore influence the details of the work to be done to a greater extent than in a traditional contract. Within the framework of a *turnkey contract,* it is common to make some functional requirements in the procurement. Functional requirements involve the ordering party describing a service that it wants implemented or a facility it wants to be able to use later rather than describing in detail which work tasks the engaged party is required to perform.

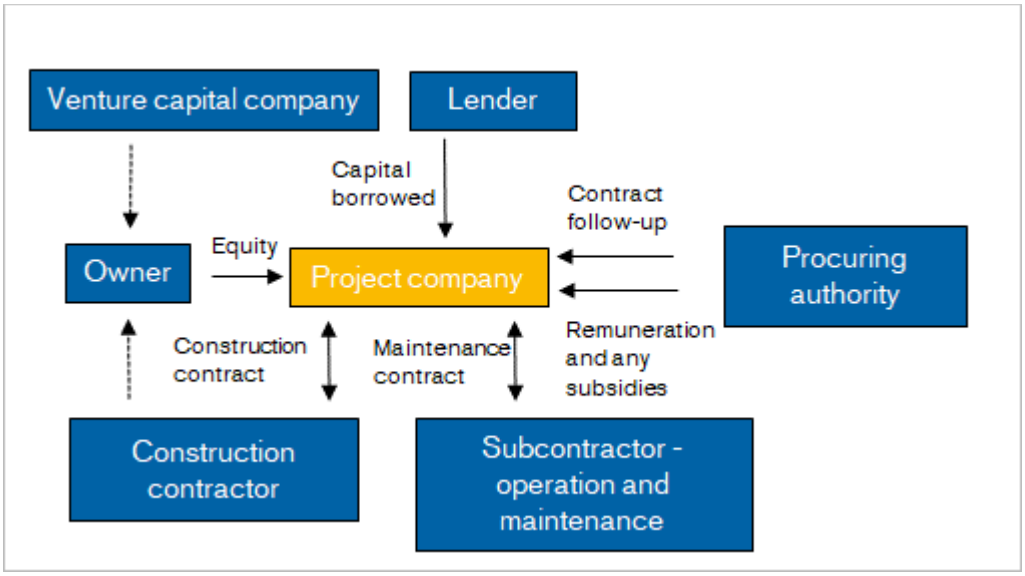
A further development of turnkey contracting is *functional contracting.* Normally, this contains a larger number of functional requirements as well as an amendment in the form of a maintenance obligation that is sometimes referred to as an extended guarantee period. By means of a functional contract, three separate procurements (planning, construction and operation and maintenance) are combined into one. A key difference from the traditional contract is that the focus shifts from invested resources to results. The ordering party asks for

[3] For an example of a more detailed description of the structure of a PPP and other project delivery methods, see the Swedish National Road and Transport Research Institute (VTI) research (2007).

a particular function. The boundary between turnkey and functional contracting is not razor sharp, because a turnkey contract may contain functional requirements, whereas a functional contract does not exclusively have to be based on functional requirements. A functional contract where the contractor has a longer commitment to operation and maintenance is referred to *as functional contracting with overall commitment.*

Public Private Partnership (PPP) in simple terms is a project delivery method in which one or more private companies, through a special project company, have a single commitment for a government investment.[4] As with a functional contract, the project company's commitment includes planning, construction, operation and maintenance. Figure 2 describes an example of the structure of a PPP.

Figure 2. Example of a PPP structure



Source: Swedish Government Offical Report SOU 2017:13.

The project company is also responsible for financing the project during the contract period. This bridging financing, which is then repaid by the ordering party, is made through equity and loans that the company raises on the capital market.

The repayment of a PPP, including the bridging financing, usually takes place by the project company receiving an annual payment from the ordering party during the contract period. In most cases, the contract period is long, for example 20 or 30 years. The repayment of the

[4] A PPP could contain variants where, for example, the public body is a minority shareholder in the project company. The form of reimbursement in a PPP can also vary to some extent.

project company's financing can also be partly or entirely made via user charges. However, the use of user charges does not fundamentally alter the analysis of the advantages and disadvantages of using PPP – even though some additional aspects arise.[5] Several of the advantages and disadvantages of PPP are related to the financing.

3. Financing of infrastructure, public finances and budgetary discipline

The choice of the form of financing impacts the effects on the public finances of infrastructure investments, and thus potentially also budgetary discipline etc.

3.1. Different ways of financing infrastructure and the effects on public finances

The main rule in the Budget Act (2011:203) is that infrastructure investments are to be financed using *appropriations,* in connection with expenses arising, although the financing can be done in another way if the Swedish parliament (Sveriges riksdag) so decides. The most common alternative financing is *intra-government loans.* For example, the Government – after approval by the Swedish parliament – has given the Swedish Transport Administration the right to finance certain investments using loans from the Swedish National Debt Office. There are also examples of state-owned companies having borrowed from the Debt Office to finance an investment *(non-government loans).*[6] In many respects, PPP acts as loan financing, given that a bridging financing with private capital is ultimately repaid by the central government. As with loan financing, PPP needs to be approved by the Swedish parliament.

Swedish Government Official Report SOU 2017:13, section 4.3 describes in more detail the impact of different forms of financing on public finances. Its main conclusions concerning PPP are detailed below, assuming that the cost for a project is the same regardless of the form of financing.

A PPP involves expenditure under the expenditure ceiling being pushed forward and distributed over a longer period than in the case of both appropriation financing and intra-governmental and non-governmental loans. Compared with appropriations and loans, this arrangement also has a more balanced effect on central government debt and the government's budget balance.[7] This follows since the government does not initially raise loans but instead repays

[5] Another type of PPP is one that is based on concessions, i.e. the government gives a private operator the right to operate an infrastructure facility for a long period of time. Concessions raise other issues for the government. However, as they are relatively rare, both in number and in the public debate, they are not further discussed in this analysis.

[6] For example, Botniabanan AB raised loans in the Debt Office for the construction of the Botnia line. These loans were later taken over by the Swedish Transport Administration.

[7] This applies on the assumption that the actual investment does not push aside other items of government expenditure that total the same amount.

the project at a later date. The effects on central government net borrowing/lending and the Maastricht debt will be the same as in the case of loan financing and appropriation financing, if a PPP is classified as part of the public sector in the accounts.

In the case of a PPP being classified as part of the private business sector, the effect on capped expenditure, budget balance and central government debt is the same as if the PPP scheme were classified in the public sector, provided that the final financing is made with tax funds.[8] The impact on the public sector's net borrowing/lending and the Maastricht debt is an even more projected and lengthy profile than if the arrangement was classified as in the public sector.

3.2. PPP risks reducing transparency and budgetary discipline

It is not reasonably possible to argue that PPP is a workable method of avoiding or reducing the burden on public finances.[9] In the end, without the use of user charges, it is public money that pays for the investment.

Rather, the advantages of the main rule of the Budget Act on appropriation financing should be stressed. This rule contributes to good order, where the government's budget process is transparent in terms of decisions and priorities. It also provides good possibilities to follow up the budget process and to create budget discipline. This would risk being worsened with PPP because the long repayment period in a PPP can be used in the short term to keep expenditure below the expenditure ceiling, in order to reduce the need to prioritise between different expenditures. This risk is amplified by the fact that the repayment only begins when a project is completed.

The fact that a PPP contract is extensive and relatively complicated can also contribute to reduced transparency surrounding the government's future expenditure. Reduced transparency, in combination with a worsened scope for follow-up, increases the risk of investments being made without weighing them up against other investments that potentially have a greater socio-economic value for citizens. Finally, given that much of the repayment is pushed far into the future, thus constituting mortgages on future budgets, the room for manoeuvre for future decision-makers is reduced.

To sum up, PPP gives no increased scope for investments, whilst at the same time resulting in negative consequences for government budget discipline. If greater scope for large infrastructure investments is considered necessary, this can instead be achieved by re-prioritisation of expenditure or an increase in the expenditure ceiling, within the fiscal policy framework.

[8] On the other hand, a PPP in the form of a concession, with full user financing without government grants or guarantees, would probably be classified as outside the public sector and would thus not have any impact at all on public finances.

[9] The conclusion in SOU 2017:13 is similar.

4. Increased financing costs and other disadvantages of PPP

In addition to the consequences in terms of transparency and budget discipline, PPP involves other disadvantages. Among these, increased financing costs is the most prominent.

4.1 Increased financing cost

An obvious disadvantage of PPP is the substantially greater financing cost of projects resulting from private bridging financing through the project company. The cost increase has two causes. Firstly, the central government can borrow more cheaply than a private operator, something that is partly due to its right to tax citizens. Secondly, the project company, like other private companies, needs equity as a buffer for negative outcomes. Equity entails a cost in the form of a required rate of return.

Project companies in a PPP tend to have creditworthiness that is somewhat less than the highest levels on the scale of credit agencies, something that appears to be mainly due to a high financial risk resulting from high loan-to-value ratios and low shares of equity. A lower creditworthiness leads to a higher cost of loan financing, not least because the project company's financing often has a long maturity that can correspond to the entire lifespan of the project.

The generally high financial risk in the project companies is made possible by what is normally low business risk, see for example Hellowell and Vecchi (2012). In a project with availability fees, there is no exogenous revenue risk. Availability fees mean that in the case of a new road, for example, the project company receives payment when the road is available for traffic at the agreed quality, and not based on how much the road is used. Such a solution involves the owners only taking endogenous risks linked to the construction and maintenance of the facility – risks that the owners usually have good possibilities of managing. In a model calculation example, the Debt Office has previously demonstrated the significant increase in financing cost.[10] For a PPP that is repaid over 50 years, the total amortisation and interest payments (in nominal amounts) amounted to 233 per cent of the project's financing requirements. This compares with 141 per cent calculated on the central government's funding cost for the same amount. If the same calculation example instead assumes a 25-year repayment period, the cost of financing by a PPP changes to 167 per cent of initial funding requirements – compared with 121 per cent based on the central government's funding costs. Given that a PPP often amounts to a multi-billion sum, these differences lead to significant cost increases in absolute

[10] See the Swedish National Debt Office (2017). The calculation example was based on a PPP in which the capital structure of the project company was assumed to consist of 90 per cent loans and 10 per cent equity. Furthermore, the project company's loan financing was assumed to be 2.5 percentage points more expensive than the central government's funding cost via the Debt Office, and the loans were assumed to have a linear amortisation. In the example, the owner's required rate of return on equity amounted to 12 per cent. Finally, it was assumed that the bridging financing would be repaid with tax funds or user charges.

terms.[11] For a theoretical project that costs SEK 25 billion to implement, the cost increase would amount to SEK 23 billion in the first calculation example, where the repayment period is assumed to be 50 years.

Another observation is that periods of increased risk premiums in the financial market, such as during the years following the outbreak of the last financial crisis, have been proven to be particularly ineffective in initiating PPP projects. [12] The risk premiums for private operators tend to increase more than for public operators during such periods. As a result, the financing cost to the project company is significantly greater than the cost of borrowing for the public sector. This has been demonstrated, for example, in the UK.[13] Changed capital requirements for banks, in the aftermath of the financial crisis, have in many cases also resulted in an increase in the cost of PPP financing. This is particularly true because the PPP agreements, and the loan financing, have long maturities that may lead to higher capital requirements than in the past (see Hellowell, 2013).

Potential efficiency gains with PPP therefore need to be substantial to exceed the increased financing cost. In addition, there are other drawbacks with PPP to be considered.

4.2. Higher transaction costs

PPP contracts are generally more extensive and complex than other project delivery contracts. As a result of this, such contracts have higher transaction costs, such as increased costs for financial and legal advisory services and more extensive administrative processes. This cost increase varies in size depending on the complexity of the relevant project but it can potentially be significant.

For example, a study of 55 PPP projects in the UK, see Dudkin and Välilä (2005), shows that the transaction costs, prior to the signing of the contract, amounted to an average of 7 per cent of the project's value. The public procurer accounted for about half of this cost, which does not include follow-up costs and potential renegotiations during the contract period. Nilsson (2009) writes that studies of PPP procurements in the UK indicate that the transaction costs can be up to three times greater for PPP compared with more traditional forms of procurement. At the same time, it is necessary to take into account that traditional procurements often involve a need over time to re-procure different services, something that reduces this difference in transaction costs.

[11] In practice, the underlying project needs to be large enough, in terms of amounts, to justify the transaction costs that are added in a PPP.

[12] The cost of ongoing PPP projects for the public sector, in connection with increased risk premiums, may also increase. However, the cost increase in this case depends on the design of the contract, i.e. the extent to which the contract means that the cost increase is transferred to the ordering party.

[13] See House of Commons (2011), page 56.

4.3. Requirements for the ordering party to have a high level of competence

The fact that PPP contracts are more extensive and complex than other types of project delivery contracts places high demands on the ordering party's competence. Lack of competence can easily result in agreements that are incomplete or incorrect. Such agreements risk resulting in the final costs being significantly greater than planned. This may, for example, arise in the design of the agreement in the areas of risk diversification or incentive structure, but also regarding clauses that regulate renegotiations and the potential bankruptcy of the project company.[14]

If the ordering party lacks relevant competence or is unable to maintain it over time, which can be both difficult and costly, an unequal relationship will arise between the contracting parties in terms of knowledge and proficiency. Complex agreements also entail high demands on internal governance and control of different processes to limit the risks arising in a PPP.

5. PPP and socio-economic efficiency gains

The drawbacks of PPP must be weighed against the benefits that may arise. Potential benefits can be found in the socio-economic efficiency gains that project delivery methods can generate because of built-in incentive structures. At the same time, there is uncertainty about such efficiency gains.

5.1. Better risk management

A common argument is that PPP enables risks to be distributed efficiently between the contracting parties, i.e., between the private contractor and the public ordering party (see for example EPEC, 2015). The risk allocation should be based on the starting point that the different risks are allocated to the party best placed to deal with them. This reduces the likelihood of a negative event occurring, and if such an event does occur, the consequences may be less costly. For example, optimised risk-allocation could mean that the private contractor is responsible for risks related to construction and environmental costs – while the public ordering party is responsible for political risks and losses resulting from events such as natural disasters and wars (*force majeure)*.

But is PPP better placed than other project delivery methods to achieve a well thought out risk allocation? The risk allocation should be largely about contract design, rather than the choice of project delivery method. For example, a PPP is not required in order for the private contractor to bear risks related to design and technical execution or environmental damage during the implementation. Similarly, most project delivery contracts can factor in the ordering party bearing political risks and being responsible for cost increases related to *force majeure.*

[14] Risks that are associated with renegotiations and bankruptcies have also been noted by Sonnerby (2017) and the Swedish National Institute of Economic Research (2017).

The differences between different types of project delivery method, in terms of the conditions for generating a good risk allocation, are therefore likely to be limited.

It is also argued that the fact that the private operator has made a long-term investment of equity in the project company makes an optimal risk allocation easier, an aspect that is described in more detail in coming sections.[15]

5.2. Increased efficiency as a result of private financing

The private capital of the project company (loans and equity) is an argument for PPP providing stronger incentives for efficiency compared to other project delivery methods.

Lenders provide efficiency in that they represent an enhanced control function for the project. This follows since the lenders' analysis can more easily focus on the risk in the specific project, i.e. the risk in the particular project company. With other project delivery methods, specific project companies are unusual, with the project in question being only one of many projects affecting the contracting company's income statement and balance sheet.

It is also argued that the equity, which the project company's owners have normally invested for the long term, contributes to increased efficiency. This long-term approach, combined with PPP having a more back-heavy repayment profile than other project delivery methods, binds the private contractor to the project. This could, for example, lead to a better negotiating situation for the government if the PPP contract has to be renegotiated, which can be compared with other project delivery methods whereby the contractor receives more of its remuneration at an earlier stage.

The fact that lenders can act as a strong control function for the project is likely to be true in most cases. However, the efficiency gain from this is not necessarily of crucial significance, given that an even more fundamental incentive should be the profit motive of the project contractor. This strong incentive exists regardless of project delivery method and whether the loans are on the company's own balance sheet or in a project company.

It is probable that an efficiency gain can be achieved by the private company making a long-term contribution with the project company's equity, thereby resulting in the company being tied to the project for a longer period (see for example VTI, 2017). At the same time this effect is counteracted by the limited ownership risk in the project company. The project contractor's first choice alternative to PPP, and a separate project company, is of course to put the project on its own balance sheet. In such circumstances, any losses would not be restricted to the capital invested in the project company, as they would be in the case of PPP. All other things being equal, such an arrangement should entail higher risk-taking for the project contractor compared with using a project company, thereby providing an even stronger incentive to streamline project work.

[15] For example, see section 6.2 in SOU 2017:13.

For example, the fact that the owner's risk is reduced in a PPP is described in SOU 2017:13 regarding central government transport infrastructure. This report states, inter alia, that "... one reason for setting up a separate project company is precisely to limit the owners' risk-taking in the project".[16] The impact of such risk mitigation on efficiency is difficult to assess, as is the positive contribution of lenders to the efficiency. The outcome depends on a number of different conditions. An important factor is the amount of equity in the project company.

The Debt Office has previously studied a number of project companies. The conclusion was that the share of equity was generally relatively low in these companies. The capital structure normally contained 10 per cent equity; the remaining financing consisted of loans. Projects with revenue streams that consisted of availability fees, and therefore lacked exogenous revenue risks, had slightly lower equity. Projects financed by user charges had somewhat higher equity.

It should be added that the stake in the project company does not always consist of equity. Not infrequently, it comes partly in the form of subordinated loans from the owners. The subordinated loans are often subject to relatively high interest rates. Furthermore, ownership structures involving holding companies established in countries with low capital taxation are not uncommon, which allows the tax on owners' returns to be reduced.

5.3. A strong life cycle perspective

PPP offers improved conditions for a so-called life cycle perspective, whereby the contractor, as a consequence of having overall responsibility (planning, construction, operation and maintenance) during a long contract period has strong incentives to find cost-effective solutions.

This means that the contractor is more likely to carry out a project at the lowest possible total cost, compared with a situation where separate contractors are procured to the different parts of a project. There is much to suggest that a life cycle perspective has advantages, especially in projects where there is a clear link between the actual execution and the future costs for operation and maintenance.

The life cycle perspective, combined with relatively large degrees of freedom for the contractor in PPP contracts, may also stimulate innovation in a project. It has therefore been advocated that PPP can contribute to higher productivity in the construction sector. This is a sector that has long seen comparatively low productivity.[17]

However, a life cycle perspective is not unique to PPP. The life cycle perspective is primarily derived from the contractor's overall responsibility for a longer period and not from the

[16] See Section 5 of the sub-report. Note that this committee comes to a different conclusion as to the appropriateness of using PPP than that presented in this analysis.

[17] See for example SOU 2012:39, Nilsson (2009) and SOU 2002:115.

bridging financing. Thus, this type of efficiency gain can also be obtained with other project delivery methods, such as different variants of functional contracts.

Although there is an advantage to long-term agreements allowing for a life cycle perspective, it should be noted that these also lead to increased uncertainty. This is because the difficulty in anticipating different future events increases the longer an agreement extends. Compared with other forms of project delivery methods, the risks of poorly designed PPP contracts may therefore be greater. The main risks arise from situations in which, for some reason, a project is proceeding less well than planned, which may lead to the need for renegotiation of contracts or bankruptcy of the project company.

There is no clear answer as to whether the benefits of long contractual periods outweigh their inherent risks. Historically however, renegotiations of PPP agreements have been common, leading to uncertainty about the cost outcome. The risk of substantial additional costs is likely to increase if the ordering party's responsibility, to provide a service to its citizens, leads to a deterioration of that party's negotiating position during a renegotiation.

5.4. Faster implementation and better budget control

It is also advocated that PPP provides an incentive structure that leads to projects being finished faster, see for example EPEC (2015). This is because the repayment to the project company normally starts only when the project is completed. For a project company, it is of great significance if a cash flow is received according to plan (or even earlier), as opposed to it being delayed. If a project is completed ahead of time, there will also be a socio-economic gain for the ordering party, as the object in question (for example, a road) can be used earlier by the citizens.

It is also advocated that PPP is better placed to keep a budget, which is mainly explained by the fact that the remuneration of the project company has a large element of fixed pricing.

Our assessment is that PPP contains incentives for faster completion, and that this can also lead to socio-economic gains. On the other hand, it is likely that the agreement structure of a PPP will take longer to put in place than the average project contract, as the contract involves more parties and is complex. All else being equal, this will delay the completion of the project.

However, the strength of the argument that PPP provides better budgetary control is limited, since it is mainly based on the actual remuneration structure of the contract (fixed-price compensation), something that can also be achieved with other project delivery methods.

5.5. Weak bid competition reduces the potential for efficiency gains

A related issue, which is probably important, is how incentive structures and possible efficiencies are affected by a limited competitive environment. Weak competition can be assumed to hamper potential efficiency gains.

Successful procurement often requires several competing offers. At the same time, competition in the construction sector is relatively limited. This is also likely to be one of the reasons why the sector has historically experienced weak productivity growth. However, a low level of competition adversely affects all project delivery methods. But as PPP projects tend to be large with complex agreements, there are a limited number of players able to execute such projects. It is not therefore unreasonable to assume that PPP involves a lower level of competition than the average for procurements. Evaluations carried out in the UK also indicate that competition in PPP procurements is characterised by poorer levels of competition than other procurement forms, see for example House of Commons (2011) pages 30 and 57.

5.6. Empirical studies concerning efficiency gains

It can be noted that empirical information relating to PPP is relatively limited, despite the fact that a large number of PPP projects have been implemented globally. One reason for this is that the long contract periods mean that many PPP projects have not yet been completed. Existing empirical studies originate mainly from the UK, where significant numbers of PPPs[18] have been started or completed in recent decades.

In VTI (2007) several conclusions from empirical studies conducted before 2007 were compiled. Amongst other observations, the report notes that the UK is the country with the greatest experience of PPP, and that PPP projects are often completed on time and within budget.

However, a later UK study suggests that there was no convincing evidence that PPP projects would be completed faster or more cheaply (see House of Commons, 2011, pages 55-59). Another important conclusion of this study is that it had not been possible to find evidence that increased efficiency would outweigh the more expensive financing cost associated with PPP.

Another report, from the UK National Audit Office (the UK equivalent of Sweden's Riksrevisionen), highlights two examples that indicate greater financing costs in PPP (see section 1 in National Audit Office, 2018). The first example is an analysis of a group of schools procured with PPP. For these schools, the cost was estimated to have been 40 per cent higher than projects financed by government borrowing. The second example is an earlier study of hospitals, in which costs were estimated to be 70 per cent higher with PPP.

Hare (2013) reviews the PPP projects initiated in the UK during the period 1997 to 2010, pointing to both advantages and disadvantages. Amongst other observations, it was noted that the PPP contracts have been innovative in terms of the use of land, real estate and financing methods. However, the author points out that the PPP programme has not been the great success initially promised, and that the main 'advantage' has been that public investments have been made outside the budget, and without increasing public debt. Furthermore, it is noted that only a slightly more balanced increase in public expenditure over the time period

[18] In the UK, although this project form is usually referred to as Public Private Partnership (PPP) it is also sometimes referred to as Private Finance Initiative (PFI) or Private Finance 2 (PF2).

would have freed up sufficient room to run all the projects in the programme using conventional project delivery methods.

During the autumn of 2018, the UK Government announced that it was ceasing to use PPP (see HM Treasury, 2018). The decision was primarily motivated by various evaluations having criticised PPP for having low flexibility and that the form of procurement represented a financial risk to the UK government.

Palcic et al. (2018) analyse eight PPP motorway projects that were completed in 2010 in the Republic of Ireland. The analysis shows that the financing cost for the project companies was relatively high, which in combination with the costs of renegotiation with lenders to the project companies that have made losses, indicates that the PPP projects have not been economically viable. The authors also point to the need to improve access to economic data for PPP companies, the need for further analysis and, in particular, the need for a government evaluation of implemented projects.

Overall, there are several unanswered questions requiring further analysis, relating to efficiency gains, the form of the project company and its driving forces. In addition, projects differ on a case-by-case basis, which is why it is risky to draw general conclusions as to whether efficiency gains arise from PPP, or the size of any such gains. But the review of advantages and disadvantages indicates that the efficiency gains are hardly sufficiently extensive to justify the greater financing costs and other disadvantages of PPP.

6. Conclusions

The disadvantages of PPP are clear. PPP risks impairing transparency in terms of decisions and priorities and the central government budgetary discipline. In addition, PPP involves a significantly higher financing cost because the Swedish state's borrowing cost is lower than the financing cost of the private project company.

While the disadvantages are clear, the benefits, in terms of socio-economic efficiency gains, are uncertain. They are largely based on theoretical arguments, such as risks being reallocated in a more optimal way or that better incentive structures are created. A decisive factor here is whether it is possible to design contracts with the correct properties, not least in view of the complexity of the projects. It is likely that the contracts will be defective and that material risks are not allocated sufficiently well in advance. When such risks materialise, the government often has a weak negotiating position due to the projects often producing services that are important to the community. The theory that PPP provides the government with more predictable costs can therefore be turned on its head.

Neither have the theoretical advantages been proven empirically. The empirical studies that have been made, mostly in the UK, have in several cases instead suggested that PPP tends to be ineffective for the public sector. This has also prompted the UK to stop using PPP.

It cannot be ruled out, however, that for certain individual projects, PPP can be a socio-economically efficient project delivery method. But the outcome of using PPP is characterised

by an asymmetry, where the potential profit is uncertain and likely to be small, while the potential loss may be substantial.

Our conclusion therefore is that the central government should also refrain from using PPP in the future. It is more appropriate to continue to evaluate the socio-economic efficiency gains that can be achieved by making greater use of different forms of turnkey and functional contracts. These are project delivery methods that partly have the same potential advantages as PPP, while at the same time lacking the disadvantages arising from private financing.

In this way, the management of public finances can also continue to be governed by clear and simple rules in accordance with the Budget Act created during the 1990s, which has served the public finances well since that time.

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