

# **A Road to Success Under Construction?**

*Examining the Constraints of Public-Private Partnerships in Sweden*

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Thomas Hallström, Hugo Martinsson, Jonathan Roxenheim

## Abstract

- Title:** A Road to Success Under Construction? Examining the Constraints of Public-Private Partnerships in Sweden
- Authors:** Thomas Hallström, Hugo Martinsson and Jonathan Roxenheim
- Tutors:** Carl-Henric Nilsson, Dept. of Business Administration, School of Economics, Lund University; Ulf Jensen, Dept. of Real Estate Management, Faculty of Engineering, Lund University
- Issue:** Public-Private Partnerships (PPP) have been embraced across the globe the past decades, with the driving forces varying across countries. Considering the relatively scarce usage of PPP in Sweden it appears highly relevant to identify the constraints for realising PPP projects. The outcome of such a study provides better understanding on what factors could constrain countries with low utilisation, as well as what could drive PPP usage in countries with high utilisation.
- Purpose:** The purpose of this thesis is to identify the constraints of realising public-private partnerships in Sweden and suggest measures to overcome them.
- Method:** By assessing Sweden's PPP readiness in the Economist Intelligence Unit's (EIU) Infrascopes index, low-scoring PPP readiness areas are identified. By combining the low-scoring areas and critical success factors for PPPs, three major areas were identified as the major constraints.
- Conclusions:** This thesis has identified three major constraints of realising PPP projects in Sweden; *insufficient evaluation, inadequate organisational support and knowledge* and *political resistance*. The first refers to the lacking capacity of evaluating public and private alternatives. The second refers to the insufficient coordination of support and capturing and sharing of PPP knowledge. The third refers to the lack of political will to conduct PPP projects and the underlying arguments. Measures involve the establishment of a formalised and systematic evaluation tool for the first constraint. A domestic and international PPP knowledge infrastructure is recommended for the second constraint. Finally, nuancing the debate, an investigation of alternative financing forms and the establishment of a clear decision-making tool for is suggested for the third constraint.
- Keywords:** Offentlig-privat samverkan, OPS, public procurement, public-private partnerships, PPP, risk allocation theory, decision-making, life cycle

## Acronyms

<b>AP3</b>	Tredje AP-fonden (Third Swedish National Pension Fund)
<b>BKK</b>	Byggandets Kontraktskommitté (Construction Contracts Committee)
<b>C</b>	Centerpartiet (The Centre Party)
<b>CSF</b>	Critical Success Factor
<b>EIU</b>	Economist Intelligence Unit
<b>ESV</b>	Ekonomistyrningsverket (Swedish National Financial Management Authority)
<b>FM</b>	Facilities Management
<b>FP</b>	Folkpartiet Liberalerna (The Liberals)
<b>KD</b>	Kristdemokraterna (The Christ Democrats)
<b>KKV</b>	Konkurrensverket (The Swedish Competition Authority)
<b>LOU</b>	Lagen om offentlig upphandling; SFS 2007:1091 (The Public Procurement Act)
<b>LUF</b>	Lagen om upphandling inom områdena vatten, energi, transporter och posttjänster; SFS 2007:1092 (The Act concerning Public Procurement within the areas of water, energy, transport and postal services)
<b>M</b>	Moderaterna (The Moderate Party)
<b>MP</b>	Miljöpartiet (The Green Party)
<b>NKS</b>	Nya Karolinska Solna
<b>PFI</b>	Private Finance Initiative
<b>PPP</b>	Public-Private Partnerships
<b>PSC</b>	Public Sector Comparator
<b>S</b>	Socialdemokraterna (The Social Democrats)
<b>SPV</b>	Special Purpose Vehicle
<b>TV</b>	Trafikverket (The Swedish Transportation Administration)
<b>V</b>	Vänsterpartiet (The Left Party)
<b>VFM</b>	Value For Money
<b>VTI</b>	Statens väg- och transportforskningsinstitut (The Swedish National Road and Transport Research Institute)

## Concept definitions

**Concessionary agreement** - A contract where an operator takes all the risk for providing a service and charges the end-user for doing so.

**Critical Success Factor** - Those few key areas of activity in which favourable results are absolutely necessary for a manager to reach his/her goals.

**Value For Money** – Outperforming or achieving the requested value to the lowest possible cost.

**Infrastructure** - The essential facilities and systems supporting a country, city, or area. For example: transportation, schools and hospitals.

**Traditional procurement** - The most frequently used forms of publicly funded procurement.

**Public Sector Comparator** - The accumulated price, for which a project could be realised by traditional procurement, which is compared to the accumulated price for a PPP alternative.

**Public-private partnerships** - A consortium of private companies, undertaking the projection, construction, maintenance, financing and ownership of a facility during a predetermined period on behalf of a public client.

**Special Purpose Vehicle** - A company with the sole purpose of the financing, projection, construction and maintenance of a facility in a Public-Private Partnership project. The SPV is typically owned by a consortium of companies and has the contractual agreement with the public client.

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# 1 Introduction

*This chapter covers the background of the problem area, a brief history of the development of PPPs and explains the purpose of the thesis.*

## 1.1 Background

Infrastructure is by most considered to be a cornerstone in societal development. The positive relationship between public infrastructure investments and economic growth is today widely acknowledged by both academics and practitioners (Égert, Kozluk, & Sutherland, 2009; The World Bank, 2014). In most countries, the public sector is responsible for realising infrastructure projects – a task included in public procurement.

Meanwhile, the population of earth is forecasted to increase heavily. United Nations projects the world's population to reach 9 billion by 2050 and subsequently highlights the evident need for infrastructure supporting this growth in population (Standard & Poor's, 2014a). Even today, needed infrastructure spending heavily exceed actual spending (Figure 1) with recent discussions emerging as to whether tax funds sufficiently will support social welfare in the future (Lundberg, 2013). Some even go as far as estimating the global gap between investments needed and available public funds to increase to 500 billion USD annually in 2030 (Standard & Poor's, 2014a).

Considering the strong growth of the world population, the importance of a country's infrastructure policy and the growing investment gap, the question of the most effective resource utilisation in public procurement arises.

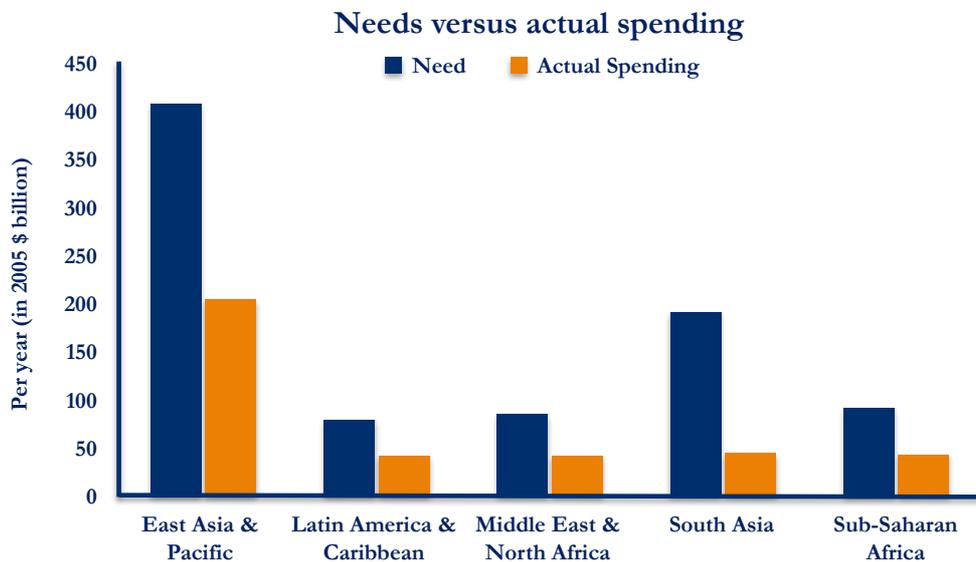


Figure 1: 2011 Infrastructure need versus actual spending (The World Bank Group of Twenty, 2011)

In recent years, a discussion regarding the effectiveness of public procurement and a lack of innovation in the construction industry has emerged (Bröchner, 2012; Nilsson, 2009). It is argued that traditional publicly funded procurement forms, where a public entity pays private contractors to carry out a predetermined and specific project, too often

involve exceeding cost and delays. Such procurement simply does not deliver the value for money (VFM) that potentially could be achieved. Meanwhile, in the past decade, many states have struggled with massive budget issues, partly because of inadequate public finance control, resulting in difficulties to realise desired infrastructure investments (Nilsson, 2009).

These three factors - effectiveness, innovation and finance - are the main drivers for Public-Private Partnerships (PPP). PPP is an umbrella term for alternative forms of realising and/or financing projects aiming to construct all kinds of infrastructure. Just as the name implies, PPP means collaboration between the tax-funded public sector and the profit-driven private sector. The goal of PPPs is to handle public investments from a life cycle point of view in an efficient way by high qualitative standards. This is done by contracting a private entity to undertake the projection, construction, maintenance and, perhaps most important, financing and ownership of a facility during a predetermined period. The phenomenon of PPP dates back to the 1990s in the United Kingdom, introduced under the device Private Finance Initiative (PFI) (L. Andersson & Sirén, 2009). Since 1990, the European PPP market has increased from 2 realised projects worth 1.387 billion EUR to 118 realised projects worth 15.750 billion EUR in 2009 (Kappeler & Nemoz, 2010). PPP is furthermore used to various extent across countries, as exemplified by the European PPP activity in 2013 displayed in Figure 2.

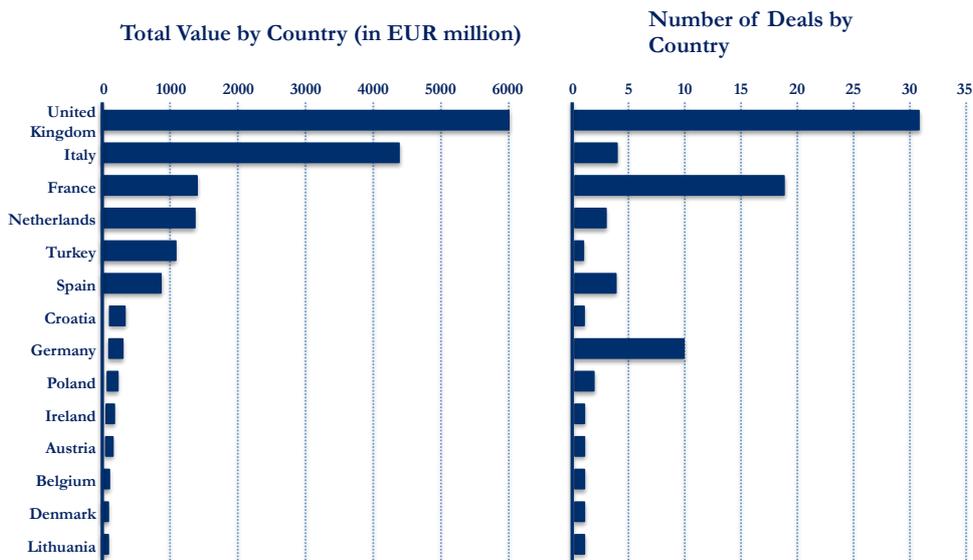


Figure 2: Total PPP Value by Country (European PPP Expertise Centre, 2013)

Since its introduction, controversy has emerged whether PPPs offer superior VFM compared to traditional procurement. The lack of finished PPP projects and difficulties in evaluating an outcome to a counterfactual alternative has resulted in ambiguous opinions as to the effectiveness of PPPs (Grimsey & Lewis, 2005). PPP promoters emphasise efficiency, financial control and innovation while the opponents often mention increased cost of capital, excess private profits and contractual complexity (Cruz & Marques, 2013). Furthermore, the arguments are often driven by political ideology rather than objective analysis, something that infects the debate (De Bettignies & Ross,

2004). However, profound research implies that under the right circumstances and in the right type of project, PPP brings benefits compared to traditional procurement (L. Andersson & Sirén, 2009; Cruz & Marques, 2013; Kwak, Chih, & Ibbs, 2009; Lundberg, 2013).

## **1.2 The problem**

As previously described, the usage of PPP in public procurement distinctively varies between countries. As such, it appears highly relevant to study the reasons why some countries use PPP to a larger extent than others (Olander & Widén, 2011). Sweden is of particular interest in this respect considering the similarities in economic conditions compared to countries with high usage of PPP. However, PPPs in Sweden are less frequent on a state and regional level compared to many other countries. Only one major infrastructure project, Arlandabanan, has been realised using PPP and a second project, Nya Karolinska Solna (NKS), is being completed while this thesis is being written.

Several reports and investigations have been released on the topic of PPP with authors including Banverket, Vägverket, Ekonomistyrningsverket (ESV), Konkurrensverket (KKV), advisory firms and independent researchers. These emphasise several effects and elements of the PPP structure that could benefit Sweden. However, they fail to provide sufficient, concrete and research based conclusions as to what constrains Sweden from realising PPP projects. Furthermore, the majority of the material is somewhat obsolete.

Meanwhile, the Swedish PPP debate is close to non-existing, stemming mainly from an unequivocal negative standpoint from the Minister of Finance Anders Borg and Finansdepartementet (FD) (Borg, 2014; FD, 2014), referring mainly to the higher cost of capital associated with PPP projects and the ambivalent value for money research.

Considering the relatively scarce usage of PPP in Sweden it appears highly relevant to identify the constraints for realising PPP projects. The outcome of such a study provides better understanding on what factors could constrain countries with low utilisation, as well as what could drive PPP usage in countries with high utilisation.

## **1.3 Purpose**

The purpose of this thesis is to identify the constraints of realising public-private partnerships in Sweden and suggest measures to overcome the same.

## **1.4 Delimitations**

In this thesis, traditional procurement is referred to as the most frequently used form of procurement, namely construction contracts. Furthermore, PPP is referred to as the general concept. The authors are well aware that distinctions and specific varieties exist but do not consider these. Moreover, technical public accounting principles are not covered in-depth because of irrelevance and the authors' limited knowledge in this area.

## 2 Methodology

*In this chapter the methodology of the thesis is presented. The chapter is divided into subsections, each explaining the methodology from a theoretical perspective followed by the practical implications of using the methodology.*

Research can come in many different shapes and forms, each dependent on the outcome one wishes to obtain. To fully understand the chosen methodology in this thesis, the subsections of this chapter is structured in the order of the actual research process, as described by Jacobsen, Sandin, and Hellström (2002) in Figure 3.

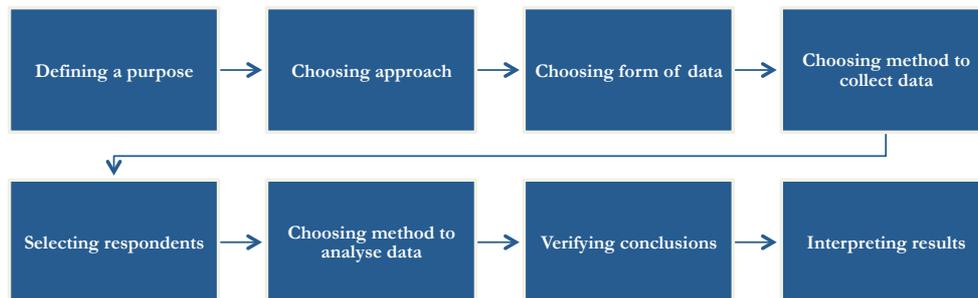


Figure 3: The research process, as translated and adopted from Jacobsen et al. (2002)

### 2.1 Defining a purpose

According to (Kumar, 1999), two crucial determinants to be aware of when choosing a research problem are the interest in the subject and the manageability of the study in the frame of constraints. The curiosity of PPP originally stemmed from one of the author's earlier coursework. Well aware of the extensive research of the subject, the challenge was to find a gap that could be filled and concretised within the given time frame. Thereby, a literature review was conducted.

#### 2.1.1 Literature Review

A literature review serves three purposes: it brings clarity to a research problem, it improves the methodology and it broadens knowledge within the research area. Specifically, the literature review assists in putting a research problem in the context of the existing body of knowledge thereby acquainting the researcher with methods and procedures previously used by others. Moreover, it covers the problems that others have encountered and exposes gaps in established research (Kumar, 1999).

The literature review was initially performed with a very broad perspective, gradually zooming into a more specific area of study. The intent was to cover a historical perspective, major research areas, main issues and recent trends of PPP. Consequently, the plentitude of research performed on more mature markets internationally gave reason to look further into research of PPP within a Swedish context. Besides this geographical scope, another aspect of interest was also the actuality of performed research. With these prerequisites, it was concluded that there is a gap in research of why PPP occurs seldom within a Swedish context, what constrains Sweden from realising

PPPs and how these constraints could be overcome. Previous research either has a different focus or is obsolete enough to expose this gap.

## 2.2 Choosing approach

The approach should be chosen on the basis of the purpose in order to be effective. (Kumar, 1999) suggests that a research approach can take the form of descriptive, correlational, explanatory, exploratory or a combination of the first three. An important distinction is the notion of time, where a descriptive approach usually dictates a certain point in time while a correlational or explanatory approach use time series of data to describe causal relationships (Jacobsen et al., 2002). In this respect, the chosen approach in this thesis is mainly descriptive.

Furthermore, a study can be intensive or extensive in nature, each a function of width and depth. The intensive approach uses few variables but goes more into depth while the contrary is true for an extensive approach (Jacobsen et al., 2002). In this study, an intensive approach has been used, as it focuses on the Swedish context in 2014 and uses in depth interviews with a relatively small number of respondents. The purpose of using an intensive approach was to get a thorough and nuanced overview of the situation, as described by Jacobsen et al. (2002). The practical implications of this approach concern above all the generalisability of the study, which is covered in section 3.7.2.

## 2.3 Choosing form of data

Data can either be of quantitative or qualitative form. The data type chosen is a function of how the purpose is phrased and what answer the researcher is looking to find (Jacobsen et al., 2002). This study is based almost exclusively on the qualitative approach. (Taylor & Bogdan, 1984) refers to the qualitative methodology as “*research that produces descriptive data: people’s own written or spoken words and observable behaviour*”. Naturally, a qualitative methodology is highly inductive in the sense that the research question is vaguely worded initially, where after the researcher looks for patterns and understanding in the collected data (Taylor & Bogdan, 1984). Meanwhile, the results are often less generalisable and thereby less applicable to other contexts (Jacobsen et al., 2002).

In this study, a qualitative approach was seen as most appropriate to fulfil the purpose. As it aims to identify constraints in Sweden from a process, procedure and knowledge perspective, a quantitative approach was deemed less suitable to fulfil the purpose. Instead, a qualitative approach allows the study to fully examine the relevant dimensions of Swedish public procurement.

## 2.4 Choosing method to collect data

### 2.4.1 Primary Data

The primary data collected in this study was mainly done so by individual telephone interviews. The individual interview is well suited when one is interested in how different individuals view a specific issue or phenomenon (Jacobsen et al., 2002; Kumar, 1999), such as PPP in a Swedish context. Due to budget as well as time constraints, the majority of all interviews were conducted over telephone or the VOIP-service Skype. Although interviewing in person captures body language and other important aspects, the

telephone interview decreases the chance of the interviewer effect, where a respondent's answers are affected by the interviewer's physical presence (Jacobsen et al., 2002). Furthermore, the interviews followed a semi-structured format with open-ended questions. The semi-structured format ensured that interviews followed a set of pre-determined questions while being flexible enough to dig deeper into certain questions and answers. The pre-determined questions were all sent to the interview subject with 24 hours notice in order to increase efficiency and allow for preparations. Each set of questions were customised in accordance with the relation the respondent had with PPP. For example, the questions for a financial stakeholder had a financial emphasis. While the semi-structured format decreased the comparability of the answers, it gave further insight in the opinions, attitudes and knowledge of each individual. The interview guide, including stakeholder customisation, is presented in Appendix A.

The majority of all interviews were conducted by two of the authors, where one led the interview and the other transcribed in real-time. Since transcribing in real-time increases the chance of missing parts of the answer, each transcription was sent to the respondent after the interview was done. The respondent then had the chance to correct, add or withdraw statements. Three respondents exercised this right with minor corrections. Each interview lasted one hour on average.

## **2.4.2 Secondary Data**

Secondary data was primarily collected through the database of Google Scholar and LUBSearch. The purpose of collecting data this way was to increase understanding of PPP in general from an academic as well as a practitioner perspective and the problems that other countries have encountered in particular. Furthermore, publications, reports and articles from Swedish sources were also collected in order to get an overview of the Swedish PPP context. While Jacobsen et al. (2002) and Kumar (1999) both argue that there may be validation problems with secondary data in the forms of bias or differing aims of the studies, the ambition was to triangulate sources when possible.

## **2.5 Selecting respondents**

### **2.5.1 External selection**

Selecting respondents for the individual interviews was a task performed in conjunction with a stakeholder analysis. A stakeholder can roughly be defined as a person, group or organisation that is affected by, or has the power to affect a decision (Freeman, 1984). In turn, a stakeholder analysis can be defined as a process of defining aspects of a social phenomenon where after parties influenced by the phenomenon is identified and categorised (Reed et al., 2009). For this study, the first step was to draw a stakeholder map. The objective of drawing a stakeholder map was to identify all key stakeholder groups. Consequently, all possible stakeholders for PPP in Sweden was listed and thereafter grouped by creating five categorised groups. These stakeholder groups were: Advisors, Clients, Financiers, Governmental Organisations, Politicians and Suppliers. The resulting stakeholder map is displayed in Figure 4.

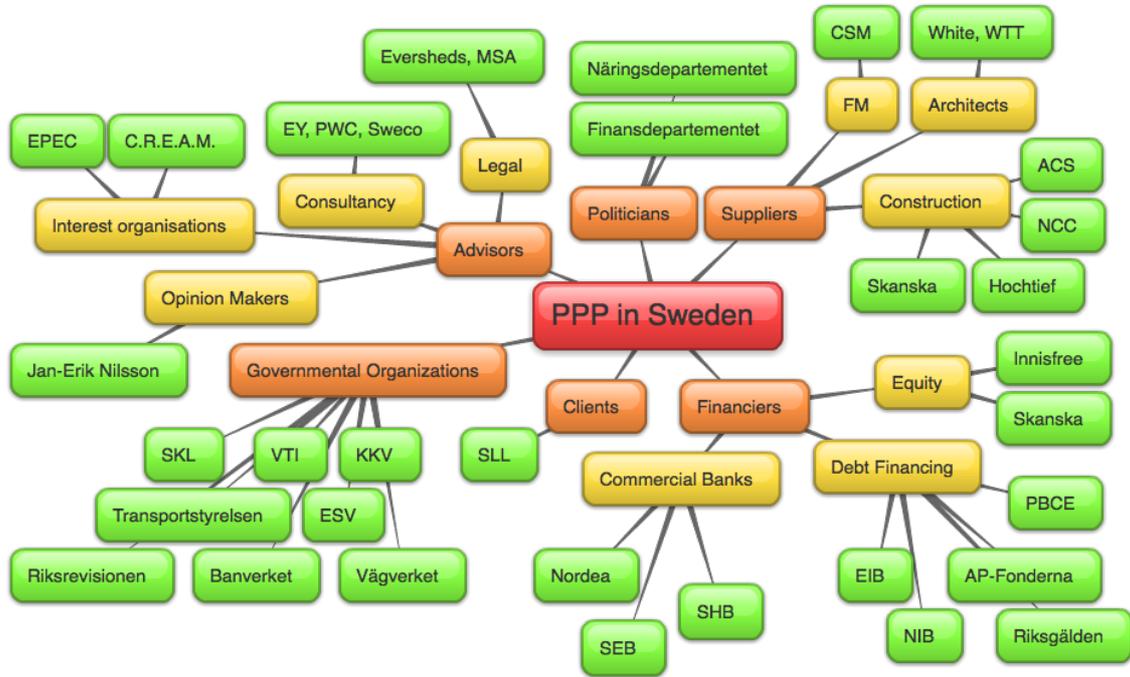


Figure 4: Stakeholder map of PPP in Sweden

Due to time constraints, a selection of stakeholders to interview had to be made. There are many matrices, diagrams and models on how to prioritise stakeholders but the most fitting matrix for this purpose was found to be The Problem-Frame Stakeholder Map as adopted by Bryson (2004).



Figure 5: The Problem-Frame Stakeholder Map, as adopted by Bryson (2004)

Each stakeholder was mapped into Figure 5 where stakeholders in the rightmost column were of special interest. The reasoning behind this is that regardless of the attitude, the influential power of that very stakeholder is what ultimately pushes the usage of PPP in any direction. Determining stakeholder power is indeed a very subjective task. However, the aim was to cover as many interviews as possible from the powerful end of the spectrum towards the middle, thereby covering a majority of the most important stakeholders. As a point of reference, Finansminister Anders Borg serves as an example of a very powerful stakeholder.

### **2.5.2 Internal selection**

Within the context of each group or organisation, an internal selection also had to be made. The method of ensuring that the best possible source within each organisation was selected varied from case to case. Best possible source was however defined as a first-hand source that had the competence and knowledge to represent the organisation and that could accurately depict the rest of the organisation. One method that was found to be useful for getting in contact with these type of sources was a variant of the snowball method. The snowball method means that the researcher asks the interview subject for advice in who to contact regarding the same subject (Jacobsen et al., 2002). Furthermore, in the early stages of the study the tutors supplied contact information to several gatekeepers within different organisations. A gatekeeper is a person within an organisation that provides access to information and mediates contacts (Taylor & Bogdan, 1984).

Table 1 illustrates the respondents that were identified within each category and organisation:

<b>INTERVIEWS</b>			
	<b>Respondent</b>	<b>Organisation</b>	<b>Henceforth referred to as:</b>
<b>Politicians</b>			
	Anders Borg	Finansminister	Borg, 2014
	Peter Andersson	Finansdepartementet	FD, 2014
<b>Clients</b>			
	Mats Abrahamsson	Stockholms Läns Landsting	SLL, 2014
<b>Financiers</b>			
<i>Debt financing</i>			
	Tore Emanuelsson	Nordic Investment Bank	NIB, 2014
	Andreas Jensen	Skandia	Skandia, 2014
<i>Commercial Banks</i>			
	Karin Lagerstrand	Handelsbanken	SHB, 2014
<i>Equity</i>			
	Nick Crowther	Innisfree	IF, 2014
<b>Suppliers</b>			
<i>SPV</i>			
	Ulf Norehn	Swedish Hospital Partners	SHP, 2014
<i>Construction</i>			
	Alexander Kielland	Skanska	Skanska, 2014a
	Karl Reichelt	Skanska	Skanska, 2014b
<i>Facilities Management</i>			
	Fredrik Sandberg	Coor Service Management	Coor, 2014
<b>Governmental Organisations</b>			
	Magnus Kristiansson	Sveriges Kommuner och Landsting	SKL, 2014
	Jan-Olof Andersson	Trafikverket	TV, 2014
	Jan-Erik Nilsson	Statens väg- och transportforskningsinstitut	VTI, 2014
	Kristoffer Sällfors	Konkurrensverket	KKV, 2014
<b>Advisors &amp; Opinion Makers</b>			
<i>Consultancy</i>			
	Lars Tvede-Jensen	PwC, Advisory	PwC, 2014
<i>Opinion Makers</i>			
	Jan-Erik Nilsson	Author & Researcher	Nilsson, 2014

Table 1: Interviews

## 2.6 Choosing method to analyse data

Jacobsen et al. (2002) describes the analytical process sequentially starting with describing the data, systematising and categorising the data and finally combining and interpreting the data. Essentially, the aim is to reduce the collected data making it more manageable.

The analytical process of this thesis emanates from an established framework for assessing a country's PPP readiness that was discovered in the literature review. The framework - The Infrascopie Index, fully described in Appendix B, is used by The

Economist Intelligence Unit and assesses country capacity to carry out sustainable infrastructure PPPs. It involves the scoring of six categories, divided into 19 indicators, of the quality of certain fundamental dimensions that facilitate the usage of PPP in a country (Economist Intelligence Unit, 2012). In order to fully meet the purpose of this thesis, the outcome of the framework was supplemented with further elaboration and explanations with an emphasis on the categories in which Sweden scored poorly.

### **2.6.1 Describing the data**

The description of the data was two-fold. The first process was to transcribe all interviews. As previously mentioned, the interviews were transcribed in real-time to the best of ability. Immediately following each interview, the authors together filled the gaps and consequently sent the transcription to the respondent for review and agreement. This type of internal and external validation ensured that no important data went missing.

Later on in the research process, when the reviewed interviews had been returned, the transcriptions were annotated in a spreadsheet. Annotating an interview is an important process that aims to reduce raw data to usable data for analysis (Jacobsen et al., 2002). With all interviews annotated in the spreadsheet, the data was ready to be categorised.

### **2.6.2 Categorising data**

According to Jacobsen et al. (2002), categorising data refers to the process of grouping data together to simplify and make the data comparable. From the basis of the spreadsheet, the data was grouped into the 19 indicators as provided by the Infrascopie Index. Categories should in general be derived from the data than the other way around (Jacobsen et al., 2002). However, since the categories and indicators of the Infrascopie Index is already established and peer reviewed, it was seen as irrelevant to modify or create new categories for the specific index. Instead, the need for a more nuanced and explanatory section was identified and subsequently added. The supplementary data in this section, *4.7 Additional findings*, was deemed required in order to fully understand the Swedish context. In this respect, it can be questioned whether the index fully encompasses the PPP readiness of a country, or if supplementary indicators could be needed.

### **2.6.3 Combining and interpreting data**

With fully described and categorised indicators, the actual scoring was initiated. The indicator data from the individual respondents was first combined and interpreted to form a basis for scoring. Thereby, the data that was found to be explanatory or irrelevant for scoring, was separated into section 4.7. The rule of thumb to score an indicator was that the more respondents supporting an argument, the stronger the basis for scoring. However, the outliers were consistently considered of importance and thereby documented as well.

By triangulating the respondents' answers against each other, especially statements of events, the scoring was given further legitimacy. Finally, secondary data was used to supplement primary data when applicable.

## 2.7 Validity

Internal validity addresses the question whether the required data was acquired or not. External validity on the other hand address whether the results are applicable on other contexts (Jacobsen et al., 2002).

### 2.7.1 Internal validity

According to Jacobsen et al. (2002) internal validity can be verified by consulting experts about the results or by critically reviewing the study oneself. In this study, the analysis and conclusions drawn have been independently discussed with tutors and different stakeholders in order to determine the feasibility. Moreover, the final draft was sent to a selected few for review. These measures can all be related to what is commonly known as face validity. Face validity means that experts acknowledge the conclusions that they are familiar with, however, the downside is that the perhaps more interesting unfamiliar conclusions are not validated (Jacobsen et al., 2002). Besides outside help, the analysis and drawn conclusions were also compared to studies performed in other contexts. The written material on PPP is extensive and there are several studies that accentuate interesting conclusions drawn from using other methodologies. For example, the indicators derived from the Infrascopie index were compared to the critical success factors identified in theory in order to draw conclusions of problem areas. Such a comparison, also known as methodology triangulation, thereby improves internal validity (Jacobsen et al., 2002).

The other method of questioning internal validity is by critically reviewing the central phases of the research process. Thereby, a discussion will follow regarding whether the data used accurately depicts reality and if the methodology for drawing conclusions can be considered valid.

First and foremost, the amount and width of interviews is considered significant enough to provide an overview of the Swedish context at the very least. Nonetheless, it can be questioned whether the respondents are capable of reflecting the full picture of PPP in Sweden, since infrastructure procurement is highly complex and multi-organisational. There are some respondents which were not possible to get a hold of which could have provided insightful information for the purpose of the study. These are displayed in Table 2. Secondary data have been used to supplement the lack of contact with these respondents.

Respondent	Position and Organisation	Reason	Information disregarded	Action
Catharina Elmsäter-Svärd	Minister for Infrastructure Ministry of Enterprise and Energy	Not interested	Opinion and attitude towards PPP	Extended interview with The Ministry of Finance
Hans Lindblad	Director General of the Swedish National Debt Office Swedish National Debt Office	Time constraints	Opinion on debt finance of PPP	Extended interview with Nordic Investment Bank
Kerstin Hessius	CEO AP3 - Third Swedish National Pension Fund	No answer	The use of pension funding in PPP-projects	Extended interview with Skandia as well as secondary data from personal presentation
Linda Andersson	EY - Real Estate Strategy	No answer	Assessment of NKS	Extended interview with PwC
Representative	European Public-Private Partnership Excellence Center (EPEC)	Time constraints	An international perspective on PPP and their experience as an interest organisation	Extended interview with Nick Crowther about international experiences

Table 2: Desirable interviews that were not conducted

Furthermore, the accountability of collected information can be questioned. Since a majority of the respondents were first-hand sources, *i.e.* sources that have been in contact with PPP themselves, it can be deduced that statements of events were true. However, since PPP can be linked to business or ideological motives, it may so be that the respondents shone a light that benefitted their own agenda. To the fullest extent, the aim was thereby to cross-examine responses between sources of different agendas and mutual independence. For example, if a public source suggested insufficient PPP knowledge among public clients, and it was verified by a private source, the statement was considered true even though the opinions of the relevance of such a comparison diverged.

Finally, the theoretical foundation of the thesis can be critically reviewed. The Infrascopes index used to categorise and score data may not be the most reliable framework available. For example, the indicator list was derived from a workshop conducted with

what is described as international sector experts as well as practitioners. However, these are not mentioned in specifics. Moreover, it is stated that the indicator list was revised after extensive peer review without mentioning by whom it was peer reviewed. Even so, the methodology and sources used to collect data is considered to be the same in this thesis as compared to how the framework is used on other countries. It can also be argued that the Infrascopie Index is particularly targeting developing countries. However, since United Kingdom was plotted and given a score it is argued that Sweden could be so as well. A more in-depth description of the Infrascopie methodology is given in Appendix B.

### **2.7.2 External validity**

As mentioned previously, external validity covers the grade of generalisation, which can take two forms. The first form concerns whether the few observations can be generalisable to a theoretical level, perhaps applicable to a larger context. The other form concerns generalising the frequency of the findings to sufficiently being able to state that a similar frequency will be reached in a larger population. For qualitative studies it is primarily the prior form that can be generalised (Jacobsen et al., 2002). Since the identified stakeholders are solely organisations or groups, the data selection can be considered typical for a larger context if the respondents can be considered representative for their respective organisations. In most cases the respondent had a leading position within the organisation in regards to PPP and can thereby be considered as representative for their organisation. Furthermore, the questions asked were typically formulated in order to capture the views, attitudes and knowledge of the entire organisation. As such, the findings presented are extrapolated from an individual level, to an organisational level to a national level.

Whether the conclusions and suggestions can be applicable to other national contexts is unclear as the collected data and purpose of the study are highly context-specific to PPP in Sweden. No such generalisability is thereby claimed. However, the constraints that are identified are all interconnected to the critical success factors as described by research. Thereby, the constraints can be seen as further verification of research previously conducted. Furthermore, the suggested measures to overcome the constraints may be of interest in contexts where similar problems are experienced.

## **2.8 Interpreting the results**

In the final stage of the research process, the results are to be interpreted. According to Jacobsen et al. (2002), interpretation means placing the results in a larger context. There are essentially two ways to do this; by comparison or by utilising theory (Jacobsen et al., 2002). First, the rendered score for Sweden was compared against other country's results in order to place the result in a context. Thereby, the conclusion of Sweden's relative PPP readiness could be more easily drawn. Furthermore, it simplified the process of determining and comparing isolated indicators.

Second, the data was interpreted on the basis of established theory. In particular, the use of researched critical success factors for PPP were used in order to support conclusions of found constraints. Additionally, the measures suggested to overcome the constraints were supported and inspired by benchmarking other countries' actions.

### **3 Public Procurement and Public-Private Partnerships**

*This chapter explains the different procurement forms and how PPPs relate to these. Furthermore, a thorough explanation of PPP fundamentals is presented, including a definition, the SPV structure, driving forces, challenges and critical success factors.*

#### **3.1 Traditional procurement and life cycle**

In procurement, a contract is defined as "a commitment by a company to a client to perform a major assignment, especially regarding a building or another stationary facility, for example a bridge" (Bengtsson & Arvidsson, 2014). The traditional view of a contract usually has the construction of the project as the main focus of attention. However, the construction phase is only one part of the whole life cycle of a facility. The various phases over the lifetime are described as Planning, Projection, Construction, Maintenance 1, Maintenance 2 and Reinvestment (Nilsson, 2009).

All these phases are associated with different costs and are mutually dependent. Logically, higher initial construction cost, with higher quality, results in lower operation and maintenance cost, and vice versa. Consequently, the need for a holistic perspective when building new facilities has for many years been a frequently discussed topic in the construction industry (Nilsson, 2009). The question thereby remains; how can the client best create incentives for the contractor to optimise the facility for decades to come?

There are essentially three main types of contracts, which include several variations; construction contracts, design and build contracts and performance requirement contracts.

##### **3.1.1 Construction contract**

Normally, a construction contract begins with an internal process where problems are identified and the projection is done. This results in a technical specification, which is delivered to the contractors. A key element of a construction contract is that the client demands an "input" which means that the contractor will perform predefined operations. The technical specification contains precise information on how the work should be carried out and what work efforts are needed, both in terms of estimated numbers of hours for various operations and material needed (Nilsson, 2009).

The bidding process is therefore based on offers of price per unit for various activities that the public client requests. Based on the incoming bids, the client will assign the contractor with the best offer to each single activity (Nilsson, 2009).

A similar procurement and tendering process is repeated for each step through the facility's lifetime. This procurement form is common and is regulated in Sweden by AB04, "General Conditions of Contract for Building and Civil Engineering Works and Building Services" from 2004, which is a framework developed by Byggandets Kontraktskommitté (BKK) (Nilsson, 2009).

### 3.1.2 Design and build contract

The design and build contract is an evolved version of the construction contract, under which the client procure a contractor to do both the detailed projection and construction. The contractor will therefore have the opportunity to influence the design of the project from the start. This procurement form is also common and regulated in ABT06, “*General Conditions of Contract for Design and Construct Contracts for Building, Civil Engineering and Building Services*” (Nilsson, 2009).

### 3.1.3 Performance requirements contract

Performance requirements contract is a further development of the design and build contract with one addition; the agreement also includes a maintenance commitment during a contracted period of time after the construction of the facility has been completed. Performance requirements contract are, unlike more traditional procurement forms, not as common in Sweden and have not yet been regulated by BKK. As a result, there is no general framework developed for how this type of contract should be designed. As opposed to more traditional types of procurement, the performance requirements contract involves only one procurement process, covering the whole or big parts of the life cycle, depending on how comprehensive the specific commitment is (Nilsson, 2009).

The key difference between performance requirements contracts and more traditional procurement types is that the client asks for an “output” instead of an “input”. The client does not require a certain approach or technical specification, but rather specifies a certain functionality of the facility. See Figure 6 for an illustration of the different procurement types (Nilsson, 2009).

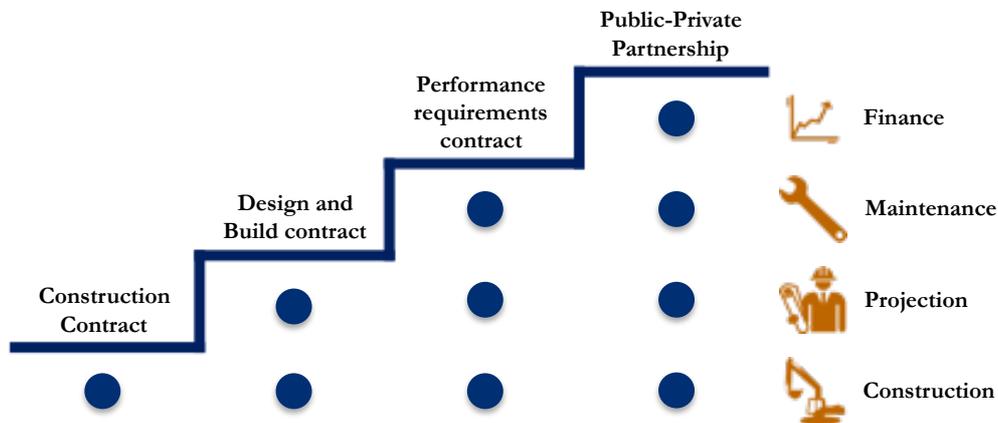


Figure 6: Illustration of the different procurement forms, as adopted by Arnek et al. (2007)

## 3.2 Public-Private Partnerships

### 3.2.1 Definition

PPP is an umbrella term for alternative forms of realising or financing projects aiming to restore or construct all kinds of infrastructure. Just as the name implies, PPP is about collaboration between the tax funded public and the profit-driven private sector. The

goal of PPPs is to handle public investments from a life cycle point of view in an efficient way and by high qualitative standards. PPP shares one important element with performance requirements contracts - the requirements are specified in terms of functionality. However, PPP projects differ in two important areas - financing and ownership - which means that projects are privately funded and owned during a predetermined period as opposed to traditional procurement forms (L. Andersson & Sirén, 2009).

### 3.2.2 The Special Purpose Vehicle

In a PPP project, the public entity signs a contract with a private entity, usually in the form of a Special Purpose Vehicle (SPV), undertaking the financing, projection, construction and maintenance of a facility. This setup is called the Standard SPV Structure and is illustrated in Figure 7. The SPV is owned by a consortium of companies, usually a construction company, an investor and sometimes the public client, that commit to design and construct the facility. Furthermore, operation, service and maintenance contracts between the SPV and relevant firms are signed (Ekonomistyrningsverket, 2006).

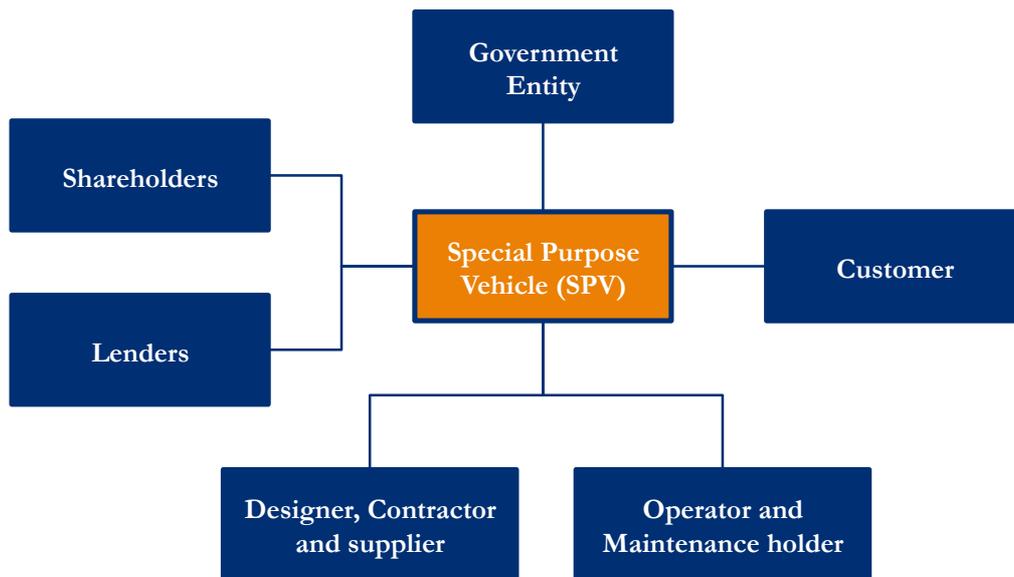


Figure 7: The Standard SPV-structure, as adopted by Ekonomistyrningsverket (2006)

### 3.2.3 Financing the Special Purpose Vehicle

#### 3.2.3.1 Equity and debt

To finance the construction of the undertaken contract, a mix of equity and debt is normally used. The financing of the SPV may vary over projects but is structured on certain basic principles. The SPV shareholders invest equity in the SPV and raise debt on the private capital market, usually from banks.

With the increasing need of infrastructure financing as described previously, a recently emerged financial trend is the Europe 2020 Project Bond Initiative launched by the

European Investment Bank (EIB). The main goal of the initiative is to “create the conditions to attract additional private sector financing for individual infrastructure projects” (European Investment Bank, 2014). As such, the initiative aims to provide an alternative to bank loans, by creating attractive conditions to realise project bonds. One such improved condition is the provision of partial credit enhancement by a subordinated loan or credit line from EIB to the project. Thereby, the financing of the SPV is structured in tranches of seniority, where project bonds are issued as senior debt, the loan from EIB as subordinated debt, and finally the equity on the bottom level as displayed in Figure 8.

In practice, this means that in the risk of default, the repayments will be prioritised in order of seniority. For example, the project bondholders will be repaid first. This credit enhancing measure will thereby improve the rating of the project bonds to an investment grade level, attracting primarily institutional investors like insurance companies and pension funds (Henderson, 2012).

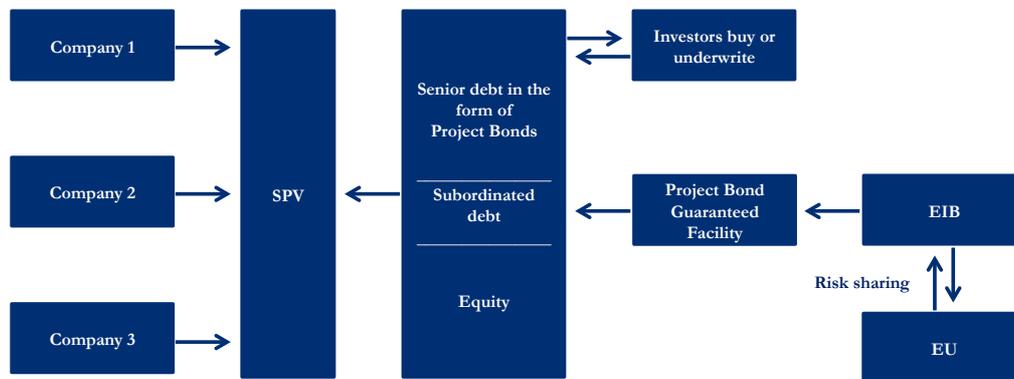


Figure 8: Project Bond Initiative, as adopted by European Commission (2014)

### 3.2.3.2 Forms of compensation

The compensation to the SPV can be structured in several ways and is essentially the revenue of the contract. The most common forms of compensation are described below. Common for all these forms is that the compensation is, directly or indirectly, depending on certain quality requirements being met (Näringsdepartementet, 2000):

- *User fees*: railroad or toll fees paid by the users of the facility.
- *Fixed amount*: the public client guarantees a fixed payment during predetermined points in time.
- *Shadow tolls*: can be used in transport infrastructure projects. The payment is based on measured flows of traffic, usually guaranteed by a minimum and a maximum amount.
- *Availability based compensation*: the payment is based on how available the facility is to the users.
- *Goal based compensation*: the payment is based on how well predetermined goals are met, often in terms of traffic security or environmental aspects.

Furthermore, to illustrate the different cost streams of traditional procurement and PPPs, an illustration is provided in Figure 9.

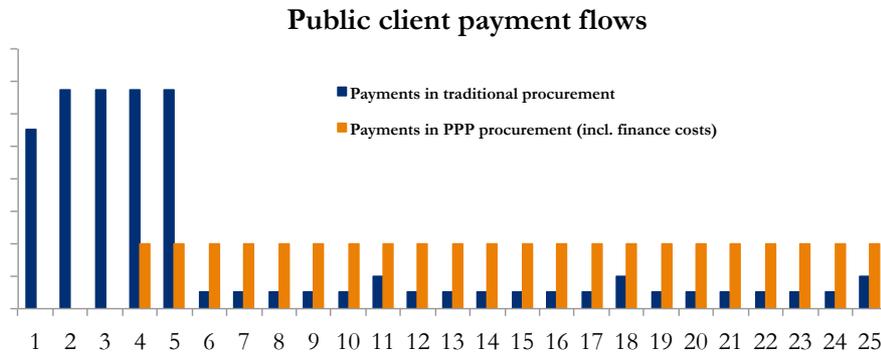


Figure 9: Comparison of payment flows in procurement (Andersson, 2007)

### 3.2.4 Driving forces

Pressed financial situation, increasing need for efficiency, improved resource utilisation and increasing need for quality follow-up are a few reasons as to why new procurement models are needed. The main driving forces for PPP projects can be categorised into increased efficiency, financial incentive and increased innovation (L. Andersson & Sirén, 2009).

#### 3.2.4.1 Increased efficiency

A driving force for using PPP in infrastructure projects is the increased efficiency in the construction phase and the operation over time as a result of the life cycle perspective. By aligning the interest with the private party, the public client receives support in evaluating the structure of the contract, risk allocation and monitoring the project over time (L. Andersson & Sirén, 2009).

The fact that the private contractor is profit driven is a strong driving force as to the efficiency of PPP projects. It drives cost awareness, which drives more efficient and qualitative construction and operation. Furthermore, the model of continuous retroactive compensation contributes to PPP projects rarely being delayed (L. Andersson & Sirén, 2009).

#### 3.2.4.2 Financial driving forces

The costs for the public client are predetermined and predictable for a long period of time. Moreover, initial investment costs are rarely associated with PPP projects. Thus, the public client does not have to pay up-front for the construction cost of the facility but rather in distributed payments over the life cycle (L. Andersson & Sirén, 2009).

In some countries, this payment mechanism of PPP has historically been utilised to bypass fiscal deficit, enabling investments in public infrastructure. Particularly European countries have utilised PPP this way. A common reason mentioned is to withstand the convergence criteria, or the Maastricht Treaty, signed by the member countries of the European Union in 1992. The Maastricht Treaty forbids fiscal deficits above 3 % and limits public debt to exceed 60 % of national GDP *inter alia*. The capital intensive nature of large infrastructure projects was as such financed by using PPP, causing less impact

on current fiscal policy or public debt (Arnek, Hellsvik, & Trollius, 2007; Cruz & Marques, 2013). However, a negative example of the long-term budget effects of utilising PPP this way is that of Portugal. In 1997 the country initiated PPP projects with shadow toll compensation in large scale around the country. Ten years later, the compensation for the very same projects was forecasted to exceed 700 million EUR, resulting in massive pressure on the public transport budget. Since then, national budget laws and regulations have been imposed. Furthermore, in 2004 Eurostat released regulations for how PPP projects should be addressed in national accounting, thereby reducing off-budget solutions and lowering risk of overspending (International Transport Forum, 2008).

#### **3.2.4.3 Innovation**

With the SPV being responsible for the facility during the life cycle, the initial investment cost is often higher, which implies decreased maintenance and operating costs over time. Furthermore, the long contract time and subsequent incentives enable alternative approaches and technical innovations. In a long-term perspective, PPP can contribute to growth and knowledge transfer, with innovation as a consequence (L. Andersson & Sirén, 2009).

In a study of eight infrastructure projects in Australia, it was concluded that credible evidence of technical- and design innovation had been derived from the use of PPP (Fitzgerald, 2004). In 2001 the Norwegian parliament decided to pursue with three road PPP pilot projects with the partial purpose of achieving innovation. The results have since then been evaluated and it has been reported that numerous accounts of innovation was found within the construction strategy, the organisation of the project, the contract and the financing of the project (Eriksen Sandberg, 2010). Furthermore, the recently elected Norwegian Prime Minister Erna Solberg has declared interest in additional PPP projects in the future. Solberg's motive for using PPP is not the access to private funding but rather the private side's expertise and ability to innovate (Gärdfors, 2013).

#### **3.2.5 Risk allocation**

One of the main foundations on which PPP rests upon is that of risk allocation. Risk allocation typically occurs in any context where there is a degree of marketable uncertainty. Marketable, in that there is a discrepancy in both how two parties view the probability of an event to occur as well as the preference for taking on that uncertainty (Medda, 2007).

In PPP, the public client specifies the risks to be shared, and the bidding parties thereafter submit their bids accordingly. The optimal allocation of risk is complex and there is no clear recipe on what risks should be borne by whom for each specific project (Medda, 2007). However, the main notion is that each risk should be allocated to the party best able to bear it (Cooper, Grey, Raymond, & Walker, 2005). While this may seem self-explanatory, determining the best able party may differ depending on the criteria. Medda (2007) recognises the two common criteria to be a) the party best able to control or influence a risky outcome and b) the party best able to retain the risk at the

lowest cost. Consequently, a contractor satisfying the first criteria may very well not be satisfying the second criteria, hence the complexity of risk allocation.

The consequences of deficient risk allocation could be increased capital costs and delayed projects. Such occurrences require renegotiations which often are found to be costly and long processes (Medda, 2007). As a reference, a study performed by the World Bank in Latin America showed that over 41% of concession contracts have been renegotiated between the years of 1985-2000 (Guasch, 2004). Furthermore, the renegotiation of a contract is a bilateral process between the contractor and the public client, thereby undermining the competitive bidding process that took place in the initial negotiations (Guasch, 2004).

It is therefore in both parties' interest that all associated risks are conveyed and understood by all parties in the negotiation process (Ke, Wang, Chan, & Lam, 2010).

### **3.2.6 Public-Private Partnerships and Value For Money**

#### ***3.2.6.1 The Public Sector Comparator***

A central area in current research of PPPs is the question whether PPP means increased VFM compared to traditional procurement, a question in which the research landscape is tinged by ambiguity. The concept of VFM is defined as “*where the benefits of risk transfer combined with private sector incentives, experience, and innovation outweigh the increased costs of contracting and financing seen under PPPs*” (The World Bank, 2014).

A widely used tool when deciding the VFM of a potential PPP project is the Public Sector Comparator (PSC). The PSC is essentially the accumulated price, for which the project could be realised by traditional procurement, which is compared to the accumulated price for the PPP alternative. A commonly used PSC model is illustrated in Figure 10 and contains the following components (Grimsey & Lewis, 2005):

- *Base cost*: Includes capital and operating costs as well as a full and fair estimate of all the costs of delivering the same volume, performance and service as provided in the PPP alternative.
- *Transferable risk*: Initially, a detailed risk calculation is conducted which is followed by an allocation of the risks. Finally, the value of the transferable risks is added to the PSC. This component is often a key determinant of VFM.
- *Retained risk*: Any risk that is not transferred to the private party in the PPP is considered a retained risk and should be included in the PSC.
- *Competitive neutrality*: An adjustment removing the net competitive advantage that a government entity has in regards to its public ownership. One such example is the costs that a PPP project incurs, effectively generating tax revenue to the government. This effect is thereby abolished.

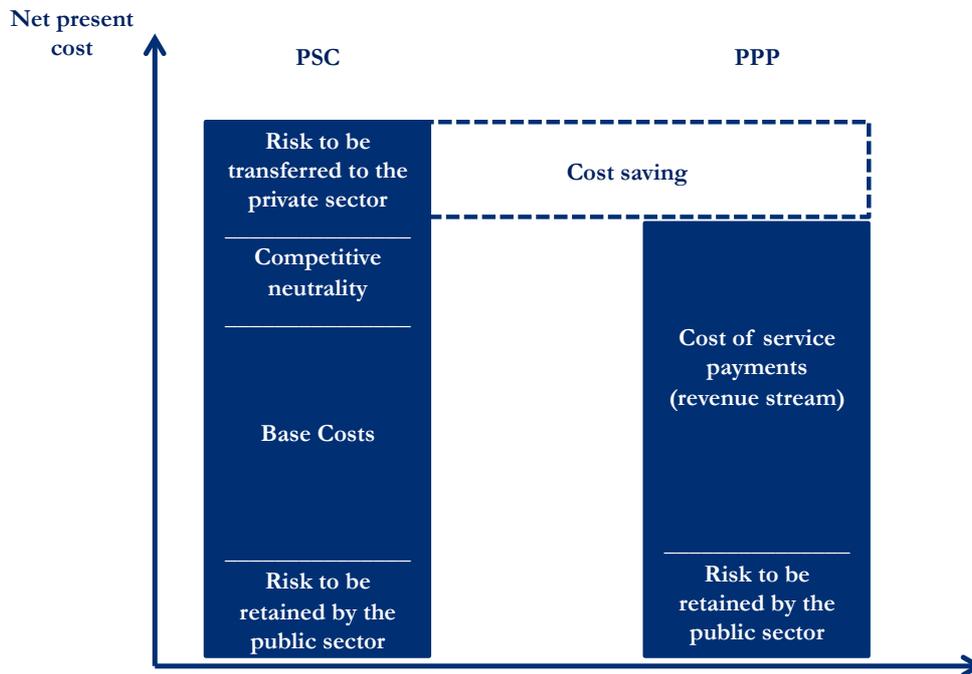


Figure 10: PSC and Value For Money, as adopted by Grimsey & Lewis (2005)

Despite its popularity, the PSC has been faced with criticism in several areas. One such area is the objectiveness of PSCs. The objectiveness of the PSC can be questioned as it can be manipulated to show a wide range of numbers. Furthermore, the necessity of a PSC is often questioned. Considering that calculating the PSC is a costly process, it could be argued that the PSC only is needed where PPP is new and untested. In other words, it might not be needed in countries where PPP has been widely used and certain experience has been gained as to its effectiveness and feasibility. On the other hand, the PSC is an important component in the decision-making process and often drives competitiveness solely by its existence (Grimsey & Lewis, 2005).

The PSC remains as a theoretical bid of assumed cost, potentially with important areas left out. The PPP bid is on the other hand an actual firm bid, to which the bidders must commit contractually. When using the PSC approach to gain VFM, a comparison is only made once - before the project is realised. As the VFM of the project is likely to develop over time, it is highly relevant to examine the VFM over time as well. Examples of how to address this problem are to monitor on-going VFM and adjust prices after current market prices. Despite these shortcomings, the tool is considered to be the most valuable tool in supporting investment decisions and has gained worldwide popularity (Grimsey & Lewis, 2005).

### 3.2.6.2 Are Public-Private Partnerships Value For Money?

Hodge and Greve (2007) argue that a spectrum of PPP experience in terms of both success and failure can be observed around the globe, out of which some have delivered the many supposed benefits of PPP. Looking at the wide range of contradictory evidence

as to the VFM of PPPs, it is clear that decision makers are facing considerable uncertainty (Hodge & Greve, 2007).

One of the main problems with assessing VFM is the fact that PPP first started emerging in the mid-1990. As such, the very long contracts have yet to be completed and thereby prevent VFM comparisons of the full life cycle (Blanc-Brude, Goldsmith, & Vällilä, 2006). Furthermore, the counterfactual is often complex to prove. The only way of concluding if superior VFM was achieved in a specific project, as compared to the counterfactual, is by hypothetically constructing a counterfactual alternative. It is thereby hard to compare the chosen alternative to what could have been chosen instead (International Transport Forum, 2008).

Despite the controversies as to the VFM of PPPs and the complexity of performing such assessments, certain outcomes of PPP have been observed. The National Audit Office of United Kingdom has empirically concluded several effects of PPP (European Investment Bank, 2004). For example, a report commissioned by the Treasury Taskforce showed that the average estimated savings of PPP projects compared to PSC alternatives were 17 %. Furthermore, a study of 61 PPP projects concluded that 89 % of all projects were delivered on time or earlier than expected. Moreover, all of these projects were delivered within the public sector budget and 77 % of the public sector managers reported that initial expectations were met (European Investment Bank, 2004).

In addition, the National Audit Office performed a survey of the public authorities' perception of VFM in 98 PPP projects. The results showed that 75 % were on time or early and the public sector did not bear overrun cost in any of the projects. Additionally, 81 % of the respondents believed that PPP projects deliver satisfactory or better VFM than what would have been achieved by traditional procurement (European Investment Bank, 2004).

On the other hand, an empirical study of 227 observations in which 65 were PPP concluded that construction costs are on average 24 % higher for PPP projects (Blanc-Brude et al., 2006). It should however be noted that the study solely examined construction costs and not the full life cycle. Furthermore, the authors provide possible explanations to the increased costs. One such is the fact that traditionally procured projects often fail to include and price the risks associated with construction. For PPP projects, the SPV will account for such risk and thereby price accordingly (Blanc-Brude et al., 2006). As a point of reference, the cost for bearing construction risk should in theory be closely correlated with the average cost of budget overruns for construction projects. (Flyvbjerg, Holm, & Buhl, 2002) found that the costs of EU road projects are 22 % higher than the budgeted on average. (MacDonald, 2002) identified a similar number, 21 %, when examining large infrastructural projects across different sectors. As such, the higher construction cost of PPP projects is almost fully accounted for considering the risk of cost overrun taken by the SPV. If it is true that PPP contractors purposely build more expensive initially in order to reduce cost in the maintenance phase, it is even harder to justify that PPP is 24 % more expensive in practice (Blanc-Brude et al., 2006).

In a study attempting to quantify the contract costs of PPPs, *i.e.* costs associated with upholding and maintaining a partnership, it was found that the contract costs on average make up for 10 % of the total capital value of a project. In particular, the costs concern technical, legal and financial advisory. The possible explanation given is that PPP contracts are longer-term and more complex, thereby harder to fully complete. While 10 % may seem significant, the study does not consider or compare the transaction costs to traditional procurement (Dudkin & Vålilä, 2005).

Regardless of empirical evidence, the debate concerning PPP is often ideologically driven (De Bettignies & Ross, 2004). Summarised, the proponents claim that superior VFM in PPP projects is reached through efficiency gains as a result of a more holistic view and better risk allocation. Additionally, proponents claim that PPP projects are more often built within or before project deadlines thereby increasing the societal VFM. On the opposing side, the adversaries argue that financing a PPP project is more expensive since the government can borrow cheaper than a private party thereby reducing VFM with PPP. Furthermore, the opposers claim that the transaction costs are considerably higher with PPP projects (Arnek et al., 2007). Consequently, the general public scepticism towards private interests in public provision is something that occurs in regards to PPP as well. Opponents often claim that PPP contractors lift abnormal returns from the contracts, something that is hard to establish as a result of confidentiality and less transparency in private organisations. A research study on Latin American concessions however show that financial returns of private infrastructure concessions have delivered financial returns close to, or below the cost of capital (Guasch, 2004).

### **3.2.7 Challenges and Pitfalls with Public-Private Partnerships**

PPP is merely one tool in the toolbox and can be more or less suitable for different projects. However, if it is concluded that PPP is a feasible option, there are associated challenges. L. Andersson and Sirén (2009) argue that there are several challenges when undertaking a PPP project. A new role and changing competence requirements makes the ability to in an early stage describe desired functions more complex. Consequently, the ability to procure a very complex overall solution in a coordinated way focusing on function is a hard task that requires experience. Related to this challenge is the ability to assess, calculate and allocate project risks over the life cycle. The last mentioned challenge is to formulate contracts regulating all parties' commitments and compensation over the life cycle (L. Andersson & Sirén, 2009). From an overall perspective, the difficulty in establishing the foundations of a contract based on long-term forecasts is considered a major challenge. Furthermore, the transaction cost associated with conducting economic appraisal can be overwhelming for smaller public entities. As a result of these challenges, Cruz and Marques (2013) claim that contractual incompleteness is a common occurrence in PPP projects effectively opening up the possibility for opportunistic behaviour (Cruz & Marquez, 2013).

### **3.2.8 Critical Success Factors for Public-Private Partnerships**

Critical Success Factors (CSF) are defined by Rockart (1982) as: *“those few key areas of activity in which favourable results are absolutely necessary for a manager to reach his/her goals”* (Rockart, 1982). When reviewing the many suggested CSFs for U.K. PPP projects,

Akintoye, Li, Edwards, and Hardcastle (2005) identified six major groups, consisting of 18 critical success factors for realising PPP projects (Akintoye et al., 2005). These are presented below, supplemented with support from additional research;

#### **Effective procurement**

- *Transparency in the procurement process*: underlines the importance of maintaining effective and transparent communication with all parties involved in the PPP (Gentry & Fernandez, 1997; Jefferies, Gameson, & Rowlinson, 2002; Kopp, 1997).
- *Competition in the procurement process*: emphasises the importance of achieving a competitive bidding process and argues this can be done by a solid tender list, a clear requirements specification and maintained competitiveness throughout the procurement process (Gentry & Fernandez, 1997; Grimsey & Lewis, 2005; Jefferies et al., 2002; Joumard, Kongsrud, Nam, & Price, 2003; Kopp, 1997).
- *Good governance*: implies accountability and clear governance as prerequisites for the administration of PPP projects and attracting investors (Badshah, 1998; Frilet, 1997; Qiao, Wang, Tiong, & Chan, 2001).
- *A well organised and committed public agency* with essential management and technical skills as well as the capacity to negotiate is emphasised (Boyfield, 1992; Finnerty, 2013; Jones, Zamani, & Reehal, 1996; McKee, Edwards, & Atun, 2006; Stein, 1995).
- *Social support*: the public acceptance of private involvement in public infrastructure is considered to be important (Frilet, 1997).
- *Shared authority between public and private sectors*: a prerequisite for sustaining the long-term public-private cooperation enabling PPPs (Kanter, 1999; Stonehouse, Hudson, & O'Keefe, 1996).
- *Thorough and realistic assessment of the costs and benefits*: highlights the importance of conducting long-term forecasting of cost and benefits, especially in regards to how uncertainty is treated and the comparison of the public and private alternatives (Brodie, 1995; Grimsey & Lewis, 2005; Hambros, Transportation, & Safety, 1999; Qiao et al., 2001).

#### **Project implementability**

- *A favourable legal framework* that fully allows and enables PPPs, is considered to be an essential condition for establishing successful PPPs (Bennett, 1998; Boyfield, 1992; Jones et al., 1996; Stein, 1995).
- *Project technical feasibility* refers to the importance of the private party being able to fully carry out all specified requirements (Badshah, 1998; Frilet, 1997; Qiao et al., 2001).
- *Appropriate risk allocation and risk sharing*: emphasises the ability to assess, calculate and allocate risk to the party in best position to manage it (Grant, 1996; Grimsey & Lewis, 2005; Qiao et al., 2001).
- *Commitment and responsibility of public and private parties*: considers the parties' ability to upbring and commit with the most beneficial resources in terms of both financial and human capital (Kanter, 1999; National Audit Office, 2001; Stonehouse et al., 1996).

- *Strong private consortium*: underlines the importance of the private parties' ability to join together in strong consortiums drawing synergies from combining strengths and weaknesses (Birnie, 1999; Jefferies et al., 2002; Tiong, 1996).

#### **Government guarantee**

- *Government involvement through guarantees*: suggests that the provision of government guarantees lowers the risk and potentially financial costs while securing the cash flows for creditors (Kanter, 1999; Qiao et al., 2001; Stonehouse et al., 1996; Zhang, Wang, Tiong, Ting, & Ashley, 1998).
- *Multi-benefit objectives*: addresses the importance of recognising and respecting multi-faceted objectives between the public and the private party. Typically, the public party strives for VFM while the private party is profit driven (Grant, 1996).

#### **Favourable economic conditions**

- *Stable macro-economic environment*: emphasises the importance of stable and certain markets where the market risk premium is relatively low (Dailami & Klein, 1998; Qiao et al., 2001).
- *Sound economic policy*: accentuates the need for a balanced governmental fiscal policy and the use of sound economic principles in decisions affecting currency and inflation (European Investment Bank, 2000).

#### **Available financial markets**

- *Availability of financial markets*: argues for the need of easily accessible capital, thereby implying lower cost of financing. Furthermore, the PPP expertise and experience of financiers is also considered important (Akintoye, Beck, Hardcastle, Chinyio, & Asenova, 2001; C McCarthy & LK Tiong, 1991; Jefferies et al., 2002; Qiao et al., 2001).

#### **Political support**

- It is argued that *political support* substantially affects the development and implementation of PPPs (Qiao et al., 2001; Zhang et al., 1998).

In addition to these identified critical success factors, Leahy (2005) argues that knowledge transfer between procurement and contract departments allows further integration between the construction phase and the long-term contractual structure (Leahy, 2005). Another relevant perspective noted by Deloitte (2012) is that a clear pipeline, *i.e.* the systemised procedure for PPP projects, is considered to be the single most important factor that makes a market attractive (Deloitte, 2012). In regards to enhancing VFM from an efficiency perspective, International Transport Forum (2008) raises the issue of excessive governmental control in public procurement, with annual basis public budget allocation limiting long-term decision-making. The authors discuss enhanced autonomy in government agencies, still fully controlled by the government. However, the control is on an arm's length basis, allowing clear specialisation for both the government and the agency. It is argued that benefits from devolving governmental control arise from specialisation of tasks and concentration of accountability for decision-making. This is achieved by an organisation created for the purpose of specific

infrastructure procurement, referring to the specialisation principles of Adam Smith. While the government expertise lies in transforming political will into policy, the procurement agency expertise lies in translating policy into implementation (International Transport Forum, 2008).

### **3.3 The Swedish Context**

#### **3.3.1 Public Procurement in Sweden**

The Swedish public procurement sector has an approximated yearly value of 500 billion SEK and is regulated by Lagen om Offentlig Upphandling (LOU). The purpose of the procurement legislation is to assure optimal use of public funds by benefitting from the competition on the market in question. The legislation also aims to grant the same terms of competition to contractors in each procurement project (Konkurrensverket, 2014b).

Traditionally, infrastructure in Sweden is financed by state grants or loans from Riksgälden. In recent times a discussion of alternative financing of transport infrastructure has emerged. The reasons are several; difficulties to include desired infrastructure investments within the budget, to get more stable forms of finance than state grants, to reduce risk exposure of the state and to distribute infrastructure resources more evenly over generations. The discussions of possible financing solutions have mainly included (Ekonomistyrningsverket, 2006):

- Extended use of loans from Riksgälden
- State-guaranteed market loans
- Contributions or loans from municipalities or other stakeholders
- Infrastructure fees
- Public-Private Partnerships

#### **3.3.2 Public-Private Partnerships in Sweden**

##### **3.3.2.1 Arlandabanan**

In the 1990s, investigations examining a train connection between Stockholm, Uppsala and Arlanda Airport were made. It was concluded that a partial extension of the original connection between Stockholm and Uppsala as well as two connections to Arlanda were needed (Nilsson, 2009). In regards to the choice of procurement form, it is stated that the reason for choosing PPP was financial (Ågren & Olander, 2013a).

##### **Bid and tender process**

In an open call for potential bidders, 80 responses were collected. Out of these 80, two consortia made it all the way to the final stage (Ågren & Olander, 2013a). In June 1994, Arlanda Link Consortium, later known as A-Train, was appointed as the winner of the contract (Nilsson, 2009).

##### **Contract**

The contract signed has a maturity of 45 years and is a concessionary agreement (Ågren & Olander, 2013a). The contract states that the equipment cost is to be covered by ticket

revenues. Since no requirements were stipulated, the full demand and revenue risk was carried by A-Train (Nilsson, 2009).

### **Performance**

Since its inception, the project has been regularly debated among politicians. In regards to actual performance, the contract states that the SPV should uphold “*good service standards*”, which is rather vague. Compared to regional rail traffic, the trains operating Arlandabanan have had a punctuality of 95 % which is better than the 91 % performed by regional rail traffic. However, the project has failed to meet the initial traffic forecasts. In 2005, Arlandabanan had 4.6 million users compared to the forecasted 5.1 million (Ågren & Olander, 2013a).

#### **3.3.2.2 Nya Karolinska Solna**

In 2008, Stockholms Läns Landsting (SLL) decided to construct a new university hospital, Nya Karolinska Solna (NKS). The rationale behind this decision was the excessive restoration cost of the existing facility amounting to 7 billion SEK. The price of NKS was restricted to 14,1 billion SEK and was planned to be operable by December 2015. The objective of NKS is to conduct health care, research and education by eminent standards and considerable magnitude while also allowing complex interaction between the separate operations (Nilsson, 2009).

In October 2007, PwC released a report evaluating alternative finance and operation solutions for NKS. Among the concluding recommendations, PwC listed PPP to be more beneficial than traditional procurement for the following reasons (PwC, 2007b):

- Probably better competition as a result of big international interest in the project.
- The risks of exceeding costs and delay in 20-40 years are transferred to the SPV.
- Better possibilities for innovative solutions in order to achieve long-term optimisation of maintenance and operating costs.
- It forces SLL to closely analyse the functional specifications of NKS.
- The external lenders perform a thorough due diligence on the SPV.
- Lower legal, operational and commercial risks, although SLL will face higher demands as to the procurement process and monitoring.
- Possibilities for changes and contract flexibility.
- There is sufficient experience in Sweden in all parts of the PPP process.
- The SPV will carry any cost exceeding the expected life cycle costs.

PwC (2007b) also accentuated that in the event of choosing PPP as procurement form, the competence of the client, SLL, is highly important. An additional report performed by Ernst & Young (2008) furthermore recommended SLL to choose PPP as a procurement form, backed by numerical analysis similar to a PSC.

### **Bid and tender process**

In a county council assembly held in June 2008, the executive committee of SLL proposed a vote between traditional procurement and PPP. The decision was to proceed

with PPP on the sub-clause that sufficient competition in the bidding process was reached (Lundberg, 2013). The initial interest was high and 47 requests for pre-qualification documents were received (NKS-förvaltningen, 2010). However, only one bid was received in the final stage. In April 2010 the executive committee of SLL announced the winning consortia consisting of Skanska and Innisfree (Lundberg, 2013). In November 2010 the SLL audit committee reviewed the tender and bid process and concluded that competition was sufficient and in line with the public procurement act (SLL, 2010).

**Contract**

The contract signed with the SPV, Swedish Hospital Partners AB, expires in 2040 with the option of extending the contract for a total of 15 years. The total cost of construction is projected to 14,5 billion SEK and the total life cycle cost is approximately 52,5 billion SEK (Nya Karolinska Solna, 2014). In order to reduce the financial costs associated with construction, it was agreed that SLL pays advance payments during construction thereby reducing the use of debt (Lundberg, 2013).

## 4 Assessing Sweden's Public-Private Partnership Readiness

*This chapter assesses Sweden's PPP readiness using the Economist Intelligence Unit Infrascope Index. A thorough evaluation of Sweden's readiness in the six categories is presented, followed by a summarised score. Finally, the areas in which Sweden appears highly ready, the enabling factors, are briefly discussed and compared to critical success factors.*

The Infrascope Index is developed by Economist Intelligence Unit and assesses country capacity to carry out sustainable infrastructure PPPs. In the framework, the term PPP refers specifically to projects that involve a long-term contract between a public-sector body and a private-sector entity for the design, construction (or upgrading), operation and maintenance of public infrastructure. In the definition, private financing is usually included, as well as construction, operation, maintenance and availability or demand risk transfer. The index evaluates readiness and capacity by breaking down the PPP value chain into six categories (Economist Intelligence Unit, 2012):

- 1) *Legal and Regulatory Framework* for PPP projects.
- 2) Design and responsibilities of the *Institutional Framework* that prepares, awards and oversees projects.
- 3) *Operational Maturity*, including the government's ability to uphold PPP laws and regulations including the number and success rate of past projects.
- 4) *Investment Climate*, including the business, political and social environment for investment
- 5) *Financial Facilities* for funding infrastructure.
- 6) In addition, to recognise regional level activity, the sixth category *Sub-national Adjustment* is included.

These categories are comprised by 19 indicators, out of which 14 are based on qualitative data and the remaining 5 is based on quantitative data. The qualitatively based indicators are scored from 0-4 or 0-3 whereas the quantitative indicators are based on indices commonly scored 0-100. The results are thereafter transformed and weighted to give a total score for each category ranging from 0 to 100. A complete description of the Infrascope Index categories and indicators is found in Appendix B. Sweden's assessment is hereby presented along with a brief description of the evaluation questions and scoring criteria for each indicator.

## 4.1 Regulatory framework

### 4.1.1 Consistency and quality of PPP regulations

*This indicator considers the consistency of laws and regulations for national-level PPP projects and whether regulations establish clear requirements and oversight mechanisms for project implementation. It also considers risk allocation principles and compensation principles.*

Since PPP is a form of public procurement, it is regulated in LOU or Lagen om upphandling inom områdena vatten, energi, transporter och posttjänster (LUF). Although PPP is encompassed by current procurement regulation, there is no PPP specific regulation in LOU, nor in LUF. It can be questioned whether the procurement regulation in LOU is flexible enough to include PPP procurements in a satisfactory way. In open and selective procurement, the conditions and terms have to be stated before initiating the procurement. In such procurement, it is thereby forbidden to change contractual terms after the tendering process is initiated (Konkurrensverket, 2008). Since July 2010, LOU also encompass “*competitive dialogue*”, which means that the procuring entity and the contractor can discuss terms and requirements before bids are submitted (Kammarkollegiet, 2010). The condition is however that competitive dialogue can only be used instead of open or selective procurement in situations where contracts can be seen as especially complex. This measure has been deemed to enhance the flexibility required for PPPs in the procurement process (Konkurrensverket, 2008). In January 2014, new EU directives were decided upon, which aim to further increase flexibility and allow a more strategic use of public procurement. The goal is that this legislation will be implemented in Sweden by spring 2016 (Socialdepartementet, 2014).

Furthermore, PPPs can be procured through concessionary agreements, thereby increasing flexibility and the use of dialogue compared to an open or selective procurement contract. Whether a PPP project can be seen as a concessionary agreement is regulated through the utilisation right criteria, stating that a concession is defined as an operator taking all the risk for providing a service and also charging the end-user for doing so (Konkurrensverket, 2008).

Even though PPPs are not specifically regulated within LOU, Trafikverket (TV) argues that when applying thorough transparency and planning in a project, PPP is currently regulated sufficiently (TV, 2014). This view is supported by Ågren and Olander (2013b), who argue that Swedish public procurement legislation does not limit PPPs (Ågren & Olander, 2013b). Finally, Nordic Investment Bank (NIB) argues that LOU does not fully regulate procurement of financial services (NIB, 2014).

When looking at the procurement regulation issued by Byggnadets Kontraktsskommitté (BKK), it is evident that the framework does not contain any PPP counterpart to AB04, “*General Conditions of Contract for Building and Civil Engineering Works and Building Services*” or ABT06, “*General Conditions of Contract for Design and Construct Contracts for Building, Civil Engineering and Building Services*” (Nilsson, 2009).

Overall, the score for Sweden is 3 / 4 in this category. Current legislation is in general terms not a barrier for PPP projects. However, compared to countries scoring higher for this indicator, Sweden lacks specific regulations and definitions in regards to PPP. It should also be noted that current legislation was deemed insufficient and unclear for PPP before competitive dialogue came into force.

*Scoring evaluation criteria:*

*0 = The legal framework is so cumbersome or restrictive that in practice national-level concessions are extremely difficult to implement.*

*1 = The legal framework allows national-level concessions, but is ill-defined and risk allocation compensation is unclear and inefficient.*

*2 = The legal framework allows national-level concessions and also establishes general, open-ended oversight, risk-allocation and compensation rules.*

*3 = The legal framework is generally good and coherent, addressing risk-allocation issues while leaving some ambiguity with regards to compensation schemes and project implementation*

*4 = The legal framework is comprehensive and consistent across sectors and layers of government, addresses risk-allocation and compensation issues according to strict economic principles, and establishes sophisticated and consistent oversight of project implementation.*

#### **4.1.2 Effective PPP selection and decision-making**

*This indicator considers whether regulations establish efficient planning frameworks, proper accounting principles and appropriate cost-benefit analysis techniques.*

SLL argues that all procurement forms are evaluated when deciding on which procurement form to use (SLL, 2014) and Konkurrensverket (KKV) highlights the complete autonomy when making the choice (KKV, 2014). Sveriges Kommuner och Landsting (SKL) and PwC on the other hand argue that thorough evaluations do not always take place and that there is a need for more frequent and comprehensive evaluations (SKL, 2014; PwC, 2014). SKL furthermore argues that the traditional cost estimations rarely consider exceeding costs and delays (SKL, 2014). Statens väg och transportforskningsinstitut (VTI) concurs with SKL and PwC and believes that there is a need for support and evaluation tools among public decision makers (VTI, 2014). TV claims that there is still room for progress in regards to taking a life cycle perspective and the value of innovation into account in long-term decision-making. This issue stems mainly from a lack of interconnectivity between the construction department and the maintenance department, resulting in neglected life cycle costs in the construction phase. This separation is done mainly because of the annual basis of the public budget allocation (TV, 2014).

When looking at formalised evaluation tools, there does not seem to exist a Swedish formal process similar to the PSC (SLL, 2014; SHP, 2014). Regarding evaluation methods, TV brings forth the processes of fact based decisions and alternative choice calculations, in which market analysis takes place examining project specific conditions and internal capabilities. However, there is no systematic quantitative methodology for evaluating PPP projects. TV also emphasises the need within the organisation to include the life cycle perspective in the evaluations (TV, 2014). In the case of NKS, PwC made

an initial assessment of alternative procurement forms, concluding that PPP was an attractive alternative. This conclusion formed the basis for another assessment, similar to the PSC, conducted by Ernst & Young (2008).

Even though calculations and assessments have been performed on specific projects, the lack of a standardised and formal assessment methods is evident. Based on the lack of such a systematic procedure for evaluating procurement forms in general and PPP in particular, Sweden scores 2 / 4 points in this indicator.

*Scoring evaluation criteria:*

*0 = Decision-making processes are not defined – they are erratic and subject to change, without accounting for liabilities.*

*1 = Decision-making processes are defined, but are only occasionally followed, and accounting for liabilities is not well established.*

*2 = Decision-making processes defined and upheld, but accounting principles are not adequate.*

*3 = Proper decision-making is both defined and used for PPP project decisions, although accounting for liabilities should be improved for more consistent decisions.*

*4 = PPP project selection is a consistent result of various efficiency, cost-benefit and social-evaluation considerations required by law and accompanied by rigorous accounting practices.*

#### **4.1.3 Fairness/openness of bids and contract changes**

*This indicator considers whether national-level PPP projects unfairly favour certain project bidders and operators over others and whether objective criteria is used when evaluating bids. It also considers how contract changes are treated.*

There are central principles in the Swedish procurement regulation, which aim to achieve a fair and open bidding process. The first two are *the equal treatment* and *non-discriminating principles*, aiming to treat all contractors in same manner by providing the same basis for competition. These principles prescribe release of contract or requirement information at the same time and place while strictly prohibiting direct or indirect discrimination. A third principle is *the transparency principle*, prescribing openness and predictability. Furthermore, tender documents should be explicit, include all of the requirements and cannot be changed (Konkurrensverket, 2014a).

In June 2008 SLL decided to realise the NKS project in the form of PPP, with the condition that expected competition could be achieved. There was a profound initial interest for the contract with many international private actors attending the initial project road show, ending up with 47 requests for the pre-qualification documents. However, only one application for pre-qualification was received. After careful evaluation of the received application, the NKS management suggested to proceed with PPP, referring to the current financial situation, the size of the project, the limited number of construction companies and the fact that one bidder is in line with Swedish public procurement legislation (NKS-förvaltningen, 2010). In May, 2010, SLL decided to proceed despite the one bid, thus reasoning that the condition of expected competition had been met (M. L. Andersson, 2010). Why only one bid was received is frequently discussed and several respondents highlight the financial crisis in 2008 as a potential

explanation (SLL, 2014; VTI, 2014; PwC, 2014). All in all, SHP describes the tendering process as very professional and states that the Skanska-led consortium had no clue that they were the only bidders (SHP, 2014).

Regarding contract changes in the case of NKS, the facility management services are put to a market test every five years in order to assure maximum value for money. The savings resulting from a market test accrue to SLL (SHP, 2014). Furthermore, SLL is entitled to renegotiate the commercial bank loans. In case of renegotiation, 90 % of the cost savings will accrue to SLL (Stockholms Läns Landsting, 2012).

TV argues that there are very few national players with sufficient financial resources and capabilities to carry out a major PPP project and that this might limit the Swedish PPP contract competition. On average, there is around 3,4 bidders on all announced contracts and around 3 on announced design and build contracts. There might be reason to believe that this number will be 1 or 2 for a PPP project, considering the increased complexity and the low number of domestic capable actors (TV, 2014).

Sweden scores 4 / 4 points in this category. This score particularly derives from the current Swedish procurement regulation, which aim to achieve a fair and open bidding process. For example, *The equal treatment and non-discriminating principles* aiming to treat all contractors in same manner by providing the same basis for competition, is something that is considered a positive addition to this indicator. Furthermore, *the transparency principle* that prescribes openness and predictability also support the full score. Moreover, no indication can be found that the one bid on the NKS contract was a consequence of insufficient or inadequate competition principles in the tendering process.

*Scoring evaluation criteria:*

*0 = Regulations unfairly favour certain bidders over others, transparency requirements are not in place and contracts are changed in a discretionary manners.*

*1 = Regulations introduce some bias toward particular parties, and bidding, transparency and renegotiation schemes are poor*

*2 = Project bidding is fair and transparent, but renegotiations and expansions are regulated poorly*

*3 = Regulations generally define a fair playing field, with considerations for contract expansion, renegotiation and adjustments*

*4 = Regulations establish fair and transparent bidding procedures, set limits to renegotiations and adjustments, and require independent oversight of post-award procedures.*

#### 4.1.4 Dispute-resolution mechanisms

*This indicator considers whether fair and transparent mechanisms for resolving controversies between the state and the operator exist, whether the law provides technically adequate and efficient conciliation schemes and whether arbitration ruling proceed according to law and contracts.*

In regards to the fact that Sweden has realised very few PPP projects, each project's possibility of dispute resolution is established on a contract-to-contract basis. For general procurement contracts such as AB04 or ABT06, arbitration clauses are already included making way for efficient dispute resolution possibilities.

Due to the confidentiality of the contract used in NKS, it is hard to establish whether proper dispute resolution mechanisms were included in the final contract. However, based on the recommendations brought forth from the initial report by PwC, it was recommended that the contract should be drafted with inspiration from AB04 and ABT06 as well as from PPP contracts used in the United Kingdom. Furthermore, the report recommended dispute resolution in a court of arbitration rather than the usual court of law. The main reason given is that arbitration rulings are more time efficient than regular court procedures. More specifically, the report recommended the Stockholm Chamber of Commerce (SCC) Arbitration Institute to settle disputes (PwC, 2007a). In the case of NKS it has been confirmed that the contract was drafted and translated on the basis of PPP contracts used in the United Kingdom (SLL, 2014).

It however remains unclear whether a dispute resolution clause, regulating the use of the arbitration institute to SCC, was imposed in the final contract. Nonetheless, the capabilities in Sweden in general and the capabilities of the SCC Arbitration Institute in particular, can be considered high quality. According to Michelson and Sabbagh (2006), the arbitration institute of SCC is well recognised and one of the more renowned arbitration institutes across the world. Historically, arbitration rulings have been conducted in disputes with parties from more than 40 countries (Michelson & Sabbagh, 2006). Furthermore, the Swedish business community's use of arbitration as a means to solve disputes is widely accepted and has a long standing (Lundblad, 2008). As an example, 61 % of respondents chose the preferred method of dispute resolution to be arbitration, as recorded in the 2014 Roschier Disputes Index based on answers by 133 of the largest companies in the Nordics (Roschier, 2014).

In regards to the legislation and the practices used in Swedish procurement in terms of dispute resolution, it remains clear that Sweden is well equipped. For these reasons, Sweden is awarded a score of 4 / 4 in this indicator.

*Scoring evaluation criteria:*

*0 = Dispute-resolution systems for PPPs are undefined and insufficient*

*1 = Dispute-resolution mechanisms exist, but these are not transparent or efficient.*

*2 = Adequate dispute-resolution mechanisms exist, but arbitration and appeals are lengthy and complex*

*3 = Comprehensive, effective dispute-resolution mechanisms exist, incorporating necessary technical considerations*

*4 = Effective and efficient dispute-resolution mechanisms establish independent arbitration according to law and contracts, without lengthy appeals and with accompanying viable prejudicial reconciliation options.*

## 4.2 Institutional framework

### 4.2.1 Quality of institutional design

*This indicator evaluates the existence and role of necessary agencies for proper project oversight and planning at the federal level, such as PPP boards and PPP advisory agencies. It also considers the oversight role and involvement of government budget and planning offices.*

As of 1 July 2014, KKV is the unit for support in public procurement in Sweden, a task that has partially been transferred from Kammarkollegiet. This task includes developing and maintaining support for public procurement, contributing to digital and standardised procurement process as well as developing and distributing tools and methods (Konkurrensverket, 2014d). KKV confirms this role and means that the new assignment will include general information and support for PPP projects. The tasks of detailed advising in on-going or planned PPP projects and evaluation of procurement forms are however not included in KKV's new assignment. The task of outcome evaluation is spread on several authorities; Riksrevisionen, Ekonomistyrningsverket and Kammarkollegiet (KKV, 2014). Furthermore, TV questions KKV's ability to oversee PPP projects of considerable size in the immediate future since KKV has not yet fully adopted the task as supporting unit. A solution to the support problem could be a collaboration between several authorities, something that currently does not exist (TV, 2014).

SHP argues that Sweden is not ready for PPP in terms of governmental competence and support (SHP, 2014). VTI concurs and believes that municipalities above all would benefit from increased government support in PPP procurement (VTI, 2014).

Considering that KKV has not yet adopted the support role to full extent and the spread in accountability among agencies for support of PPP planning, monitoring and follow-up, Sweden scores 2 / 4 points in this category.

*Scoring evaluation criteria:*

*0 = PPP-specific agencies or boards do not exist and relevant institutions in this sector lack accountability and independence from rent seekers.*

*1 = Some oversight and checks and balances exist, but these are not comprehensive and agencies are highly prone to political distortion*

*2 = Agencies exist and are fairly technical in nature, but do not play all necessary roles for comprehensive sectoral oversight*

*3 = The necessary agencies exist and generally fill all necessary roles for sector oversight, although their structure and roles could be improved*

*4 = The institutional design establishes satisfactory oversight and planning agencies, and incorporates check and balances so as to ensure effective planning and regulation, and increase accountability.*

## 4.2.2 PPP contract, hold-up and expropriation risk

*This indicator considers whether the judiciary enforces property rights and arbitration rulings. It also considers whether investors can appeal against rulings by regulators, expedite contract transfer for project exit and obtain fair compensation for early termination.*

As previously mentioned, PPP is regulated through LOU (Konkurrensverket, 2008). In regards to the few PPP projects carried out in Sweden, the legal experience regarding contracts is scarce. What can be considered though, is the overall legal situation in Sweden. Sweden is ranked third worldwide by the World Justice Project (WJP) in their Rule of Law Index 2014. The index targets 99 countries around the world with the goal to measure how the rule of law is practiced in everyday life. For the 2014 rankings, government accountability is strong (3rd), corruption minimal (4th), and fundamental rights are strongly protected (1st). Sweden's administrative agencies and courts are rated among the most effective and transparent in the world (World Justice Project, 2014). However, in the 2014 Doing Business Rankings published by The World Bank, Sweden is placed 34th in the category "Protecting investors" and 25th in the category "Enforcing Contracts" (Doing Business, 2014).

Aside from the overall legal situation, the Swedish legislation regarding public procurement provides an expedite mechanism in how to replace failed operators to protect creditors' rights. When projects are procured through LOU, a new procurement procedure has to take place when the failed operator is to be replaced (Konkurrensverket, 2008).

For the reasons stated above, Sweden's judiciary ability to effectively enforce PPP operator and investor rights and arbitration rulings, is considered to be positive. Sweden thereby scores 4 / 4 points in this category.

*Scoring evaluation criteria:*

*0 = The judiciary is a poor enforcer of private operator and investor rights and arbitration rulings, and there is no effective appeals process*

*1 = The judiciary occasionally upholds PPP operator and investor rights and arbitration rulings, but in an inefficient manner*

*2 = The judiciary usually upholds contracts, PPP operator and investor rights and arbitration rulings, but hold-ups are common*

*3 = The judiciary consistently and effectively upholds contracts and allows for appeals to regulator rulings, ensures fair compensation for early termination and transfer of contracts, although delays occur and can generate hold-up risk*

*4 = The judiciary effectively enforces PPP operator and investor rights and arbitration rulings, allowing for expedited contract transfers and ensuring that early termination occurs only in exceptional public-interest circumstances, with fair compensation to the operator and protection to creditors.*

## 4.3 Operational maturity

### 4.3.1 Public capacity to plan and oversee PPPs

*This indicator considers public capabilities for planning, design/engineering, environmental assessment, oversight of national-level projects service standards and conflict resolution. Also considers if there is public expertise on project financing, risk evaluation and contracts design.*

There are several opinions as to Sweden's PPP capacity. Several respondents claim it to be insufficient as a logical consequence of inexperience and habit (FD, 2014; SHP, 2014; Coor, 2014; SKL, 2014; PwC, 2014). Lack of qualified departmental support and competence is further emphasised (SHP, 2014). FD highlights the associated risk of insufficiently competent municipalities and county councils being exploited by private consortiums (FD, 2014). However, there seems to be a more solid competence among county councils than municipalities in general (Skanska, 2014a; KKV, 2014). As brought forth previously, TV believes the life cycle perspective can be improved in long-term planning - an issue stemming from the lack of interconnectivity between the construction department and the maintenance department. However, the organisation is moving towards a pure client-role and thus specifying requirements more in terms of function, leaving the contractors to construct a suitable long-term solution. TV believes it is ready for PPP in a near future in regards to all of its components except the financing (TV, 2014)

Despite the seemingly inadequate PPP capacity, the competence in the few observable examples of Swedish realised PPP projects is described as substantial and considerable as to the bidding and negotiation processes (SLL, 2014; SHP, 2014; Coor, 2014; PwC, 2014). However, it appears that the public incapacity has been supplemented by recruiting or acquiring competence from external advisors (SKL, 2014; VTI, 2014; PwC, 2014). In the case of NKS, SHP argues that the competent public PPP organisation was a consequence of a) the adaptation and translation of a United Kingdom contract and b) competent employees of SLL.

In regards to the lack of PPP specific agencies or membership in there of, the score for Sweden is low. Furthermore, there is no tradition of using PPP for procuring projects thereby causing inexperience across the public organisations. Instead, relevant competence has for specific projects been acquired through the use of advisory firms. In this respect, Sweden scores 2 / 4 points in this category.

*Scoring evaluation criteria:*

*0 = Federal agencies do not have any of the necessary expertise or experience.*

*1 = Federal agencies have very limited project expertise and experience.*

*2 = Federal agencies have some project planning, design and financing expertise or experience, and oversee service quality to a limited extent.*

*3 = Federal agencies generally have the necessary comprehensive project planning, design and financing expertise and experience, exhibiting moderate service quality oversight capacity.*

*4 = Federal agencies have the necessary expertise and experience and effectively regulate the sector on a consistent basis.*

### 4.3.2 Methods and criteria for awarding projects

*This indicator considers the track record of federal agencies using competitive bidding and objective economic factors as the primary consideration in final project and contract awards.*

LOU explicitly prescribes that the allowed basis of evaluation for the Request for Quotation in a public procurement procedure is either a) the lowest price or b) the financially most beneficial bid (Konkurrensverket, 2014a). Furthermore, LOU states that the final contract award has to be supported with adequate evidence. Thus it is not sufficient to solely state that the winning bidder had the most financially sound bid. A decision taken on such ground has to be further supported with evidence of the circumstances that the decision maker has taken into consideration. After the contract is awarded to the winning bidder, all other bidders are informed and consequently have ten days to appeal the decision (Konkurrensverket, 2014c). The use of competitive dialogue also suggests that fair economic deals are reached in consent more easily. SKL confirms the use of competitive dialogue in municipalities and county councils in PPP projects, thereby increasing the chance of coming up with fair economic deals (SKL, 2014).

Due to the sole bid on the NKS project, it is hard to establish whether or not the project was awarded on fair economic principles, even though the project has been faced with scrutiny in media. One of the more debated issues is the actual cost per square meter in relation to other hospitals built around the world. A report conducted by the consulting firm McKinsey stated that the cost was 46 000 SEK per square meter, which was stated to be as much as 50 % higher than the cost for other newly built hospitals in Europe and America. In specific, the average cost per square meter in SEK was found to be 17 000 for Spain, 29 000 for Sweden, 32 000 for USA and 44 000 for UK (Tottmar, 2013). SLL however claims that such a comparison is flawed considering the fact that a PPP project, which includes so much more than construction, is compared to traditionally procured projects (SLL, 2014). Furthermore, the hospital is indeed built for top quality health care, such as almost exclusively having one-patient rooms, thereby preventing spread of disease with reduced health care bills as a result (Tottmar, 2013). Skanska also witnesses of the demand for high quality, claiming that large parts of the hospital is built very flexible for remodelling. As an example, the floors are made thicker to endure three times the pressure compared to usual flooring, so that heavy research equipment can be used if needed (Skanska, 2014). All in all, VTI means that increased transparency and openness in the NKS project would have been desirable (VTI, 2014).

Considering Sweden's solid legislation when it comes to using objective economic evaluation criteria and the somewhat insufficient transparency, Sweden scores 3 / 4 points in this indicator.

*Scoring evaluation criteria:*

*0 = The granting agency awards projects based on subjective considerations and does not use objective, economic variables.*

*1 = The granting agency has a poor track record, but does consider economic factors with some limits to discretion.*

*2 = The regulator considers economic criteria to award projects, although these are not always the most efficient and appropriate ones, and subjective factors still play an important role.*

*3 = The regulator has a good track record that could be improved (i.e. it uses economic variables, but does not give these priority over other factors).*

*4 = The regulator has an excellent track record and uses economic criteria in an effective, transparent and consistent manner.*

### 4.3.3 Regulators' risk-allocation record

*This indicator considers whether the allocation of risk between the state and private sector has been successful for national PPP project in recent years. It also considers the effectiveness of guarantees and performance bonds.*

VTI claims that Swedish municipalities have a history of realising PPP projects with insufficient risk transfer (VTI, 2014). In the case of Arlandabanan, the risk allocation was both clear and ambitious; the full demand and revenue risk was to be carried by A-Train. As it turned out, the actual revenue was about 20 % lower than expected. Two debated causes of this outcome are a) the fact that Bromma Airport remained open for flight traffic despite a political promise/indication of shut-down and b) that the E4.65 highway to Arlanda Airport was reconstructed/expanded during the time Arlandabanan was completed. This risk allocation structure has faced criticism in evaluations (Nilsson, 2009).

In the case of NKS, no outcome can be observed today as to the success of the risk allocation. However, the contract regarding the financial structure had to be renegotiated, resulting in the construction of NKS being co-funded to 50% by advance payments from the state (SHP, 2014).

Although the risk was shared to some extent in the case of Arlandabanan, it has been criticised and seen as a sub-optimal allocation. When also considering the renegotiation in NKS, the track record cannot be seen as flawless. Thus, the score for Sweden is 3 / 4 points in this indicator.

*Scoring evaluation criteria:*

*0 = Risk allocation is often handled inappropriately.*

*1 = Risk has been allocated properly only on certain occasions, as evidenced by a high incidence of contract renegotiation, and hedging and insurance instruments have been minimally used.*

*2 = Risk is usually distributed fairly between the state and the operator, but renegotiations are still common and financial instruments, such as insurance, guarantees and performance bonds, are occasionally used.*

*3 = Risk has been fairly distributed, renegotiations have been moderate and parties employ some financial risk-hedging practices.*

*4 = Risk has been consistently allocated correctly between the state and the private sector to minimise renegotiations, with extensive and effective use of financial instruments.*

#### 4.3.4 Experience in transport, water and electricity projects

*This indicator shows the number of transport, water and electricity concession projects in the past ten years in each country, as recorded by the World Bank's Private Participation in Infrastructure (PPI) database. Scoring is conducted on the basis of raw data, where a higher number of projects is better.*

Since Sweden is not registered in the PPI database, the score is derived from the amount of known PPP projects. A project is counted if a) the total investments exceed 1 million USD, b) the private party own at least 25%, c) the project has reached financial closure since year 2000, d) the project provides services to the public either directly or indirectly.

To the best of knowledge, the only projects that meet these criteria are Arlandabanan and NKS. The only additional source of information regarding projects on a municipal level is a study conducted in 1998. The study concluded that in the examined 64 municipalities (out of 280), there was 117 records of PPP projects (Collin, 1998). However, these are considered too small and insignificant to provide relevant experience for Sweden.

Croatia was in the 2012 Infrascope given a score of 2,2 for two registered PPP projects while Georgia was given a score of 4,4 also by conducting two PPP projects. In this respect, it seems justified to give Sweden a similar score. However, considering that NKS is one of the largest PPP projects ever agreed upon, Sweden is given a score of 5 for this indicator.

#### 4.3.5 Quality of transport, water and electricity projects

*This indicator evaluates the distress and failure rate of transport, water and electricity PPP projects over the past ten years.*

This indicator will provide a maximum score of 1 to countries with less than five PPP projects. Although both PPP projects in Sweden have endured an intense debate, the projects are not under severe distress nor have failed. As such, the scoring for this indicator is 1 / 4.

*Scoring evaluation criteria:*

*0 = For countries with five or more projects in the PPI database, this indicates a project failure/distress rate of above 20%. For countries with fewer than five projects, this indicates a failure/distress rate of 25% or above.*

*1 = For countries with five or more projects in the PPI database, this indicates a project failure/distress rate of between 14% and 20%. For countries with fewer than five water and transport projects, this indicates a 0% failure/distress rate.*

*2 = Failure/distress rate of between 8% and 14%.*

*3 = Failure/distress rate of between 3% and 8%.*

*4 = Failure/distress rate of between 0% and 3%*

## 4.4 Investment climate

### 4.4.1 Political distortion

*This indicator evaluates the level of political distortion affecting the country's private sector.*

To estimate the level of political distortion affecting the private sector in Sweden, a weighted average of three indices is used. These are the Public Sector Ethics Index (PSEI), the Political Instability Index (PII) and the Government Policy Effectiveness Index (GPEI). In order to make up for obsolete data, the indices have been supplemented where applicable.

The PSEI is calculated by the World Bank. It is intended to measure the incidence of honesty among politicians, nepotism in public procurement and average frequency of bribes among other variables. The scores are derived from questionnaires sent to firms in the participating countries. According to the most recent publicly available report from 2004, Sweden scored 84 on a grade from 0-100 (Kaufmann, 2004). While there is reason to believe this score has remained relatively stable since then, the score is supplemented with similar data from the Transparency International Corruption Perceptions Index (CPI). In the 2013 CPI, Sweden scored 89 on a scale of 0-100 ranking third among 177 countries (Transparency International, 2013).

The Economist Intelligence Unit (2009b) defines The Political Instability Index as “*the level of threat posed to governments by social protest*”. The underlying scores are made up of combined measurements in regards to economic distress and exposure to public unrest. The latest publicly available score for the PII is that of 2012, where Sweden scored 95 (World Bank Institute, 2013b).

Furthermore, the Economist Intelligence Unit maintains a ranking in regards to government policy effectiveness. This ranking aims to quantify the level of excess bureaucracy as well as to capture institutional effectiveness (World Bank Institute, 2013a). The most recent found score for Sweden was that of 2012, where Sweden scored 88 on a scale ranging from 0 to 100 (World Bank Institute, 2013b).

Overall, Sweden has historically been a politically stable country. As mentioned in the method, up-to-date numbers have been hard to obtain. This score should therefore just act as an indication of where Sweden would score when using more accurate and actual data. Thereby the estimated score for Sweden would be 89/100 points for this indicator.

$$\frac{84 + 89 + 95 + 88}{4} = 89$$

*Scoring evaluation criteria:*

*The score is a weighted average of the Economist Intelligence Unit's political stability and governmental policy effectiveness risk scores, and the World Bank public sector ethics index. Scores range from 0 to 100, where 0=worst and 100=best.*

#### 4.4.2 Business environment

*This indicator evaluates the quality of the general business environment for infrastructure projects.*

To evaluate the quality of the general business environment of infrastructure projects in Sweden, a weighted average of the Corporate Ethics Index (CEI), by the World Bank, and The Economist Intelligence Unit's market opportunities and macroeconomic index will be used.

The CEI is a combination of two other World Bank indices called Corporate Illegal Corruption Component (CICC) and the Corporate Legal Corruption Component (CLCC). These indices aim to measure the existence of bribes in procurement and policy-making as well as private influential power on public decision makers. The CEI score of 2004 in Sweden was 77 in a score ranging from 0 to 100 (Kaufmann, 2004). There is no reason to believe this score has significantly changed since then.

The business environment index from the Economist Intelligence Unit is a global ranking among the world's 60 largest countries. To derive this index, a model is used based on 70 factors across 10 categories. The result is a score which indicate the quality or attractiveness of the business environment within the country. The index is developed every five years and Sweden scored 8,35 in a score ranging from 0-10 measured between the years of 2005 to 2009 (Economist Intelligence Unit, 2009a). Since this period was the most recent publicly available ranking found, the data will be supplemented with two additional indices on business environment. For comparability, the score is transformed to the range 0-100 by multiplying the score with 10, effectively resulting in 83,5.

The first supplementary index used is the Doing Business rankings published by the World Bank. The aim of the index is to measure regulation and the ease of doing business within a country across a spectra of eleven topics such as dealing with construction permits, enforcing contracts and obtaining credit for example (Doing Business, 2014). For 2014, Sweden scored 82,96 in a score ranging from 0 to 100 (Doing Business, 2014)

Finally, the Global Competitiveness Index published by the World Economic Forum is used. The index assesses the competitive landscape of 148 countries and provides an insight in the productivity and other factors of each country. In 2014, Sweden scored 5,48 on a scale ranging from 1-7, ranking 6th country overall (World Economic Forum, 2014). In order to make the data more comparable, it is transformed to a scale ranging from 0-100 by dividing 5,48 with 7 and thereafter multiplying the result with 100. Consequently, the score obtained from this index is 78.

Sweden can be considered to be a country with ease of doing business in. Due to the obsolescence of publicly available data, the original indices have been supplemented with similar but more recent indices. Combining the four scores, the average score for this indicator is thereby 80.

$$\frac{77 + 83 + 83 + 78}{4} = 80$$

*Scoring evaluation criteria:*

*The score is a weighted average of the Economist Intelligence Unit's market opportunities and macroeconomic risk scores, and the World Bank corporate ethics index. Scores range from 0 to 100, where 0=worst and 100=best.*

#### 4.4.3 Political will

*This indicator evaluates the level of political consensus, or will, to engage private parties in PPPs and to provide favourable implementation frameworks across sectors.*

When the current government was selected, the inaugural statement of intent was to develop alternative financing methods for infrastructure. A report of potential PPP projects was conducted and promoted, but shortly after these actions in 2008, the interest faded (Cars, Malmsten, & Witzell, 2011).

The government is today skeptical to the use of PPP with the main opponents being within FD with Finansminister, Anders Borg, in the forefront. Borg's main concern is the cost of private capital compared to loaning from Riksgälden. Furthermore, the mixed evaluation results where no clear support or evidence of effective PPP benefits has been proved is also an argument used (Borg, 2014).

Even if the government has a unified stance, PwC believe that the discussion is divided in two camps, regardless of political colour (PwC, 2014). This is supported by Skandia, who believes that C, FP and KD are in favour of PPP while V, S and M are opposing it. MP remains neutral standing behind the argument that no one borrows cheaper than the state (Skandia, 2014). SHP however argues that there is a lack of understanding among decision makers what PPP really is, resulting in agitation for the term. Furthermore, the NKS project is described to pioneer the future of PPPs in Sweden. If the project turns out successful, more PPP projects is believed to occur in Sweden in the future (SHP, 2014). Respondents also witness of the political game surrounding PPP, where higher-ranking politicians that are against PPP affect local municipalities and county councils, even though those institutions are free to choose procurement method (SKL, 2014). Since the ruling government is clearly against PPP and none of the opposition parties advocate PPP, the debate and discussion is dead on the political agenda (FD, 2014).

Considering the explicit negative standpoint from FD and Finansminister Anders Borg and the subsequent effect this has on decision makers, Sweden scores 1 / 3 points in this category.

*Scoring evaluation criteria:*

*0 = The government has consistently expressed a lack of interest or inconsistent intentions in engaging private participation through concessions or improving frameworks. Conditions for private investment are hostile.*

*1 = The government has shown some reluctance to engage private participation through concessions and provide favourable frameworks, either because of disagreement among, or explicit opposition from, significant political groupings.*

*2 = There is a political consensus surrounding the need to engage private participation through concessions (and provide favourable frameworks, although implementation is slow).*

*3 = There is political consensus to maintain favourable frameworks and to be pro-active with concession projects, where appropriate, and the likelihood of major political delays is low.*

## **4.5 Financial facilities**

### **4.5.1 Government payment risk**

*This indicator considers whether the government regularly fulfils obligations for PPP contracts or uses liquidity-guarantee schemes to reduce non-payment risk. It also considers Economist Intelligence Unit's sovereign debt risk ratings.*

In the sense of financial capacity, Sweden is one of the most financially sound countries in the world. Rated AAA by S&P (Standard & Poor's, 2014b) and Fitch (Reuters, 2014) and Aaa by Moody's (Moody's, 2013), it is clear that the government of Sweden is a stable partner financially. In fact, Sweden is one of only eleven countries worldwide that maintains the highest credit rating from all three rating institutes (Blaine, 2013). The county councils are also highly rated. As an example, SLL was rated AA+ in 2012 (Standard & Poor's, 2012).

In the sense of infrastructural projects, it is the responsibility of Riksgälden to provide guarantees and loans on a state level. Of the total outstanding guarantees of approximately 35 billion SEK, 20 billion SEK is related to guarantees for the Öresund Bridge (Riksgälden, 2014b). In terms of PPP projects, Riksgälden has issued a loan as well as a liquidity and capital adequacy guarantee to the Arlandabanan project. The loan of 1 billion SEK was given to the private SPV, A-Train AB, where repayment is dependent on financial results, while the guarantee was given to state-owned Arlandabanan Infrastructure AB (Riksgälden, 2014a).

Considering Sweden's strong credit ratings, it appears highly unlikely that the government would not honour contracted agreements. The governmental payment risk is therefore very low and Sweden scores 4 / 4 points in this category.

*Scoring evaluation criteria:*

0 = The government struggles to fulfil obligations to concessionaires.

1 = The government occasionally fulfils obligations.

2 = The government usually fulfils obligations.

3 = the government usually fulfils obligations, and provides some minimal guarantees to investors.

4 = The government has an excellent track record of fulfilling obligations, and provides strong guarantees to investors.

Please note: in certain cases where project- or sector-specific information was not obtainable, scoring considers the Economist Intelligence Unit's sovereign debt risk ratings. For these instances, scoring employs the following guidelines: 0=rating of CCC and below, 1=B rating, 2=BB rating, 3=BBB and A rating, and 4=AA or AAA rating.

#### 4.5.2 Capital market for private infrastructure finance

*This indicator aims to capture how available and reliable long-term debt instruments are for infrastructure financing. Is there a developed insurance and pension market with useful products for infrastructure risk reduction? Are interest-rate and exchange-rate hedging instruments available?*

The capital market for private infrastructural financing is well-developed in Sweden. As an example, NKS has been financed to 85 % by loans. These are distributed through a consortium of commercial banks (44 % or 4390 MSEK), the Nordic Investment Bank (12% or 1181 MSEK) and the European Investment Bank (29 % or 2872 MSEK). The interest rate for the loans is fixed at 3,86% for the entire contractual period (SLL, 2012). Svenska Handelsbanken (SHB) comments that they have no specific opinion on PPP in general but that loans to such projects is a product that they offer and are willing to provide as long as the project is right (SHB, 2014). Furthermore, Skandia expresses an interest for investing in Nordic PPP projects directly as well as indirectly through infrastructure funds. On a global level, a recent survey among institutional investors showed that 58 % were planning to allocate investments to infrastructure (Standard & Poor's, 2013).

In order to assess the overall capital market, the availability of debt and hedge instruments needs to be taken into consideration. In terms of long-term debt instruments such as corporate bonds, the total amount outstanding was 230 billion SEK in 2012 (Riksbanken, 2013). For hedging purposes, the interest-rate and exchange-rate markets are also found to be strong in Sweden. A common way of hedging interest rate is by the use of IMM-FRAs (International Money Market Forward Rate Agreements) and turnover per day for these interest rate instruments amounted to 185 billion SEK in 2012. In the same year, exchange-rate instruments amounted to a turnover per day of 332 billion SEK (Riksbanken, 2013).

The Swedish capital market remains a strong one and the country was one of the best performing countries through the financial crisis in 2008. The banks stand strong compared to banks in countries that have received high scores for this indicator, and there seems to be interest from banks as well as pension companies to invest in PPP projects. As a result, the score for Sweden is 4 / 4 points in this indicator.

*Scoring evaluation criteria:*

0 = The markets for finance and risk instruments are underdeveloped or non-existent, and only foreign sources provide project funding.

1 = The market for local finance is slowly developing, although most finance comes from international sources and risk-hedging instruments are not robust.

2 = Some finance and risk instruments exist, although financing still comes mainly from foreign and multilateral organizations.

3 = The domestic market presents a large, reliable financing market, but risk instruments are still developing in size and complexity.

4 = There is a deep, liquid finance market locally, as well as a reliable and large local market for hedging instruments.

### 4.5.3 Marketable debt

*This indicator evaluates whether there is a liquid, deep local currency-denominated, fixed-rate, medium-term (five years-plus) bond market in marketable debt. In other words - is debt traded freely?*

As one can expect in connection with the above, Sweden has a well-developed bond market. For the covered bonds market, *i.e.* bonds backed by mortgages, Sweden is the fourth largest market globally. Approximately 75 % of the issued bonds are in SEK. With the use of market makers, primarily the commercial banks, the second hand bond market remains liquid and the daily turnover on this market was 13 billion SEK in 2012. This can be put into relation to the total outstanding value of covered bonds, which was 1940 billion SEK in 2013. The average maturity of newly issued covered bonds was 4,5 years in 2012 (Sandström, Forsman, Stenkula von Rosen, & Fager Wettergren, 2013).

It is evident that Sweden has a well-developed bond market where debt is traded freely. Sweden thereby scores 4 / 4 points in this category.

*Scoring evaluation criteria:*

0 = There is no securities market for fixed-rate financing of over one year.

1 = There is a government securities market in place, but for short maturities only.

2 = The government is fostering a medium-term market and it should be in place soon.

3 = There is a medium-term (five years-plus) debt market, but only for public sector (government bond) issuers.

4 = There is a medium-term (five years-plus) debt market for both public and private sector issuers.

### 4.5.4 Government support for low-income users and infrastructure affordability

*This indicator examines whether the government provide subsidies that allow low-income users better access to water and transport services.*

In 2012, the total cost for local and regional public transport amounted to 36,5 billion SEK in Sweden. 17,6 billion SEK or roughly 49 % was financed through grants from the

state, county council or municipality. The distribution between these was 88 % from county councils, 11 % from municipalities and the remaining 1 % from the state. Since 1 January 2012, the public transport legislation has opened up the public transport market for private parties. Furthermore, the act dictates that regional public transport agencies are responsible to uphold public transport in areas where public transport is not commercially viable (Trafikanalys, 2013). Finally, within the scope of the national Swedish transport policy, it is evident that public transport has a prioritised role (Regeringskansliet, 2013).

While the question of government support for water is more applicable to developing countries, it stands clear that Sweden provides water cheaply and to a very high quality. The national water grid was developed by the municipalities in the 1950's and 1960's and such investments was back then subsidised by the Swedish government (Råd & Rön, 2012). In relation to the income level in Sweden, water is cheap with an average price of 0.025 SEK per litres (Svenskt Vatten, 2014).

Sweden is often considered to be a country with rather equal wealth distribution. Thereby, government subsidies and affordability is not a major issue in the country. For these reasons, Sweden scores 4 / 4 points in this category.

*Scoring evaluation criteria:*

*0 = The government does not subsidise the water or transport sector, or has done so in an extremely distortionary manner.*

*1 = The government does not subsidise the water or transport sector, or has done so in a moderately distortionary manner.*

*2 = The government occasionally provides subsidies for improved access to water or transport for the poor, but these are infrequent or applied only in certain cases.*

*3 = The government usually provides satisfactory subsidies for low-income users, but this can vary by sector and project.*

*4 = Subsidies are common, reliable and effectively target low-income users.*

## 4.6 Sub-national adjustment

*This indicator evaluates whether infrastructure PPPs can be carried out at a regional, state or municipal level, and the relative success and consistency of these frameworks.*

KKV argues that there is considerable freedom as to the choice of procurement form for Swedish municipalities and county councils (KKV, 2014). However, as brought forth by SKL, governmental policy has certain influence on the actual autonomy and capacity to carry out PPPs (SKL, 2014). Furthermore, VTI describes municipal clients as being particularly vulnerable when procuring PPP projects, referring to the lack of public support and opportunistic behaviour from contractors (VTI, 2014).

The success and consistency of the related frameworks is controversial. As brought forth previously, the governmental advisory and support organisations for PPP seem somewhat spread and immature. This is partly because KKV has not fully adopted the

new support task and partly because several entities are responsible for the evaluation of procurement form, monitoring and follow-up in a given project. The success of the frameworks is furthermore hard to evaluate considering the few examples of realised PPP projects on local level.

Considering the skewed local autonomy, lack of public support and the insufficient frameworks, Sweden scores 2 / 4 points in this category.

*Scoring evaluation criteria:*

*0 = The legal framework does not allow regional or municipal entities to concession public works, or in practice the requirements are extremely cumbersome.*

*1 = The legal framework allows regional and municipal entities to concession public works, but technical capacity or political will is lacking.*

*2 = A few successful examples of regional or municipal concessions exist, but capacity and projects at this level across the country are generally weak.*

*3 = A significant concessions programme has been developed at a municipal or regional level, with good implementation capacity and institutional design.*

*4 = An important and diverse (in terms of sectors and locations) concession programme has been developed at the municipal or regional level, and it benefits from a homogeneous framework, good local implementation capacity and institutional design.*

## 4.7 Additional findings

While the framework provides an overall view of the PPP readiness in Sweden, it fails to capture nuances and underlying explanations. Furthermore, this section will provide additional findings relevant to the purpose that did not fit within the scope of the framework.

Based on the political ambiguity it stands clear that consensus is rather divergent in Sweden regarding PPP at the moment. Differences in opinion concerning the effectiveness of PPP is one side of the story but it was also found that opinions are multifaceted regarding the driving forces of PPP. For example, one main point that was emphasised was the belief that PPP increases innovation. The supporting argument was that the private side is more innovative, thus increasing project innovativity given that the private side was given enough freedom to do so. Examples given were predominantly in other countries such as Norway but experiences in current domestic projects such as NKS was also highlighted. The innovation argument was expressed by governmental organisations such as SKL, VTI and KKV but also by stakeholders on the private side such as Skanska and PwC. FD however expressed an ambivalent stance, suggesting that there might be increased innovation but that the same result can be reached through performance requirement contracts without PPP.

Several respondents also described the malpractice of using PPP as a financial solution. Using PPP as a financial tool was described as a driving force in more impoverished countries to work around budgetary rules such as the Maastricht treaty and had consequently put those projects and states in economic distress. Portugal was one such example that was brought up by PwC.

A third driving force that was expressed was the ability to transfer risks, a core idea to PPP. For example, it was described that the municipalities or county councils have the ability to transfer unwanted risk to private parties to instead focus on the core mission (KKV, 2014). PwC further argued that transferring risk to increase value should be the only driving force to use PPP (PwC, 2014). Related to the transfer of risk and value, one important aspect that was discussed was whether PPP actually reduced build time. FD conservatively stated that PPPs might potentially reduce build time; while other respondents argued that build time is reduced as a result of the contractor carrying the delay risk (FD, 2014).

When asked why the stakeholder believed that PPP is seldom used in Sweden, the explanations differed. A general point of view is that Sweden has been conservative regarding alternative procurement forms historically. It was however mentioned that Infrastrukturdepartementet has just recently released a report initiating a strategic move from traditional procurement towards performance requirement contracts (Skanska, 2014). FD elaborates on this further by stating that their view on fiscal policy is intended to be stringent - they want projects to be financed with what public funding is available at the moment (FD, 2014). PPP seems to be a political controversy in Sweden and the opinion spans across ideology, even within the political parties (SHB, 2014).

The negative attitude primarily stems from one argument: PPP means more expensive private financing than a project traditionally procured by a public entity (Borg, 2014; FD, 2014). There are disparate opinions whether this is the only basis for determining PPP VFM, which have to be considered. VTI means that while a loan given to a public entity is in fact cheaper, it is not a holistic view on the costs associated with the two different procurement forms. The alternative cost for the government is not the interest rate, it is the cost of delays and cost overruns (VTI, 2014). Moreover, the consequence of such delays or cost overruns are often neglected in traditional procurement - in worst case the public client simply dispenses more cash into the project. In PPP, such occurrences would instead affect the SPV considerably. VTI means that these arguments are often overlooked when debating the cost of PPP compared to traditional procurement (VTI, 2014). Moreover, the interest rate argument has more substance now compared to before the financial crisis. Before the financial crisis, the public to private interest rate spread was down to 75-100 basis points while it is now closer to 200-400 basis points (PwC, 2014).

Another argument associated to the cost of PPP is that it is not entirely comparable to traditional procurement. What is easily forgotten is that a higher price tag comes with benefits for the public party such as not having to carry the risk and having a fixed cost (SLL, 2014; SHB, 2014; Coor, 2014; SHP, 2014). It is thereby incorrect to say that the public entity would always be cheaper off procuring a project themselves as such a cost often fail to properly calculate all the risks (PwC, 2014).

Besides the debate of the cost of private capital, another issue is the political sensitivity of private capital in infrastructure. In particular, the on-going debate is whether or not to allow government service providers in healthcare to be owned by private equity firms for example. Although being a tangible difference from the PPP debate, SHP claims that the

debate has spilled over into arguments regarding PPP, especially considering NKS being a PPP project (SHP, 2014).

Furthermore, another argument commonly experienced and expressed by the stakeholders is the question of the complexity, which PPP projects involve. Several respondents mentioned that the complexity of constructing the proper contracts needed might be an obstacle for PPP in Sweden (NIB, 2014; SLL, 2014; SHP, 2014). The supporting argument was that the long contractual period and large volume accounts for this complexity. It is however possible that the government could upbringing the competence needed for such contracts, but that is thought to be harder on a municipal level (FD, 2014). Regardless, PwC argues that traditional procurement should be as complex if the procuring party really wants to reach the same level of quality and functionality. The difference is that within the scope of PPP, the procuring party has to provide more resources to calculate what is needed (PwC, 2014). Consequently, NIB believes that the client is required to be able to handle the complexity in such calculations, so that it can pressure the bidding parties to better prices (NIB, 2014). Complexity may also sprout less competition in the bidding process as the preparation of contracts may be too costly (KKV, 2014).

The final expressed obstacle is the reduced budgetary resources for future governments that PPP projects might lead to. Finansminister Anders Borg is one such proclaimer, an opinion shared and confirmed by FD. Once again, the example of Portugal is brought up as an example where insufficient cost calculations and forecasts created strained public finances (SHP, 2014). Furthermore, there is a component of psychology in decision-making, where SLL suggests that it is more of a burden for the decision maker to lock the project over the full life cycle (SLL, 2014). However, there are nuances in this question as well. PwC argues that it is more of a question of accounting principles, since county councils would have financed a project over a long time anyway. At the same time, the client costs are more fixed and controllable from the get-go, something that Finanslandstingsråd Torbjörn Rosdahl of SLL has stated as positive (Skanska, 2014).

For the future of PPP in Sweden, SLL believes that many decision makers await the outcome of NKS. The inexperience from other projects thus acts as a roadblock until effects from NKS can be seen. There is however already important know-how to be absorbed from the projects initial phases. One such practice is the use of 50/50 financing in the building phase of the project. SLL argues that the 50/50 solution reduced financial costs and SHP emphasises that it did not interfere with the incentives of the contract (SHP, 2014; SLL, 2014). As to other solutions of reducing financial cost of PPP projects, VTI reports on an initiative in Norway where the government guarantee the loans thereby reducing interest rates (VTI, 2014). In regards to political sensitivity, several respondents opened up for the use of pension capital. While several pension funds already allocate some of their investments towards infrastructure projects directly or indirectly through infrastructure mutual funds, the current legislation and regulatory framework inhibits full freedom to invest in PPP projects. For the sake of the Swedish national pension funds, the Swedish national pension funds regulation prohibits more than 5% allocation towards over-the-counter investments such as infrastructure or infrastructure funds (Skandia, 2014; (AP3, 2014b). For privately owned insurance

investors, the European Solvency II Directive (2009/138/EC) instead penalise capital invested in such projects or funds (Skandia, 2014)

The final suggestion that respondents mentioned was that of organisational entities to support knowledge sharing and provide guidance and support for procuring PPP projects. VTI had already advised FD to investigate how such an organisation could be developed and suggested to look towards the United Kingdom where such organisations already exist (VTI, 2014). Skanska also reported on initiatives in Norway and Finland where the national transport agencies are looking to become more independent from politics imposed from the government in order to increase strategic decision-making capability and becoming more forward-looking (Skanska, 2014).

## 4.8 Summarising and scoring Sweden

### 4.8.1 Scoring

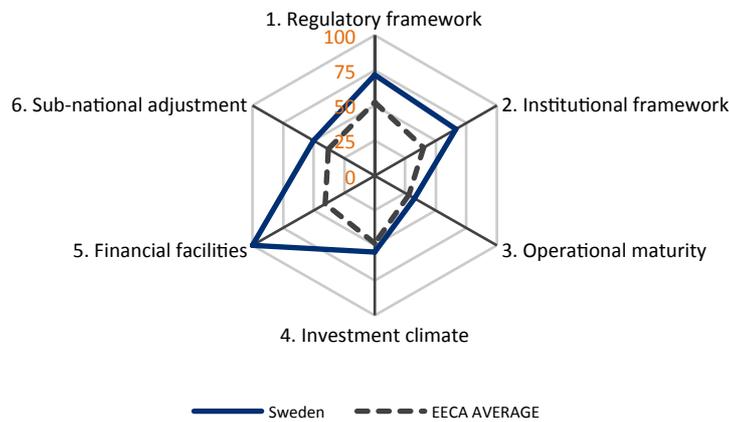


Figure 11: Combined score

	Weights	Scores
<b>1. REGULATORY FRAMEWORK</b>	25,0%	<b>71,9</b>
<b>2. INSTITUTIONAL FRAMEWORK</b>	20,0%	<b>66,7</b>
<b>3. OPERATIONAL MATURITY</b>	15,0%	<b>32,5</b>
<b>4. INVESTMENT CLIMATE</b>	15,0%	<b>58,8</b>
<b>5. FINANCIAL FACILITIES</b>	15,0%	<b>99,9</b>
<b>6. SUB-NATIONAL ADJUSTMENT</b>	10,0%	<b>50,0</b>
<b>OVERALL SCORE</b>		<b>65,0</b>

Each category score is made up by the following indicators and weights.

## A Road to Success Under Construction?

	Weights	Scores	Scores <sup>n</sup>
<b>1. REGULATORY FRAMEWORK</b>			<b>71,9</b>
1.1 Consistency and quality of PPP regulations	37,5%	3	28,1
1.2 Effective PPP selection and decision-making	25,0%	2	12,5
1.3 Fairness/openness of bids, contract changes	12,5%	4	12,5
1.4 Dispute resolution mechanisms	25,0%	3	18,8
<b>2. INSTITUTIONAL FRAMEWORK</b>			<b>66,7</b>
2.1 Quality of institutional design	66,7%	2	33,4
2.2 PPP contract, hold-up and expropriation risk	33,3%	4	33,3
<b>3. OPERATIONAL MATURITY</b>			<b>32,5</b>
3.1 Public capacity to plan and oversee PPPs	25,0%	1	6,3
3.2 Methods and criteria for awarding projects	12,5%	3	9,4
3.3 Regulators' risk allocation record	12,5%	3	9,4
3.4 Experience in electricity, transport and water concessions	25,0%	5 <sup>a</sup>	1,3
3.5 Quality of electricity, transport and water concessions	25,0%	1	6,3
<b>4. INVESTMENT CLIMATE</b>			<b>58,8</b>
4.1 Political distortion	25,0%	89 <sup>a</sup>	22,3
4.2 Business environment	25,0%	80 <sup>a</sup>	20,0
4.3 Political will	50,0%	1	16,5
<b>5. FINANCIAL FACILITIES</b>			<b>99,9</b>
5.1 Government payment risk	22,2%	4	22,2
5.2 Capital market: private infrastructure finance	44,4%	4	44,4
5.3 Marketable debt	22,2%	4	22,2
5.4 Government support and affordability for low income users	11,1%	4	11,1
<b>6. SUB-NATIONAL ADJUSTMENT</b>			<b>50,0</b>
6.1 Sub-national adjustment factor (national adjustment for states)	100,0%	2	50,0

n = normalised score, a = absolute score

Qualitative data is hard to quantify and score. With the available empiric data and the weights supplied, the reader is encouraged to form their own opinion in regards to the score.

### 4.8.2 Enabling factors

The enabling factors of PPP that have been observed are all fairly sluggish factors. Sluggish, in the sense that measures to improve said factors require excessive time and/or resources. The strongest observed category is the *financial facilities*, where Sweden seems to have everything in place to fund infrastructure by PPP. To improve the government payment risk by improving state or county council credit rating for example,

can be considered a very tedious and hard task to perform. Furthermore, *stable macro-economic environment* (Dailami & Klein, 1998; Qiao et al., 2001), *sound economic policy* (European Investment Bank, 2000) and *availability of financial markets* (Akintoye et al., 2001; C McCarthy & LK Tiong, 1991; Jefferies et al., 2002; Qiao et al., 2001) are identified as critical success factors for PPP projects, further contributing to the importance of Sweden's quality in these areas. As such, the fact that Sweden scores high in these particular categories can be seen as a very positive foundation.

Furthermore, strengths are particularly found in indicators based on overall legal, commercial, competitive and social aspects rather than PPP specific factors. *Competitive procurement process* (Gentry & Fernandez, 1997; Jefferies et al., 2002; Kopp, 1997), *transparency in the procurement process* (Gentry & Fernandez, 1997; Jefferies et al., 2002; Kopp, 1997) and *a favourable legal framework* (Bennett, 1998; Boyfield, 1992; Jones et al., 1996; Stein, 1995) are identified as critical success factors. This further suggests that the groundwork of PPP in Sweden is considered strong, while inadequacy is primarily found in factors requiring experience or competence in PPP specifically.

## 5 Constraints of realising Public-Private Partnerships

*Based on the categories in which Sweden scored poorly, the presented causes behind these scores and research relevant for the categories at hand, three major constraints of success are identified. These consist of several sub-areas, each explained in depth. Finally, measures for improving each area are presented.*

Considering the weight of the indicators and the resulting total score, it can be concluded that Sweden have several factors that need to be improved in order to be seen as fully ready for PPP projects. The weaknesses from the index are mainly found in categories and indicators heavily weighted, suggesting that improvements in these factors will considerably add to the readiness of Sweden. Political will is one such indicator that heavily counterbalances the readiness, and improvement in the same could happen in short time. Related weak indicators are *public capacity to plan and oversee projects*, *quality of institutional design* and *tools for effective decision-making*, suggesting synergies in an eventual countermeasure.

### 5.1 Insufficient evaluation

#### 5.1.1 Defining insufficient evaluation

The first identified constraint of success is evaluation, which addresses the poorly scored indicator *effective PPP selection and decision-making*.

As clarified in the assessment, Sweden lacks a systematic procedure for evaluating procurement forms in general and PPP in particular. Several respondents describe that procurement form evaluations occur either too rarely or by a non-systematic and non-formalised approach. Furthermore, Swedish decision makers appear to insufficiently value the impact of cost overruns and delays when calculating the cost of a traditionally procured project. This type of evaluation is identified in the critical success factors *thorough and realistic assessment of the costs and benefits* (Brodie, 1995; Hambros et al., 1999; Qiao et al., 2001) as well as *appropriate risk allocation and risk sharing* (Grant, 1996; Qiao et al., 2001). L. Andersson and Sirén (2009) also highlight the importance of the *assessment, calculation and allocation of risk*. Finally, Grimsey and Lewis (2005) argue that fair, realistic and comprehensive evaluation of the public alternative to a PPP alternative is essential in deciding the highest VFM.

Looking at Sweden's insufficient evaluation process and how this process is highlighted among researchers and practitioners, *insufficient evaluation* is arguably a constraint of success in Swedish PPP procurement.

#### 5.1.2 Improving evaluation processes

When it comes to measures to reduce this constraint, the establishment of a systematic PSC is a convenient and proven measure available. Despite its drawbacks presented in section 3.2.5, it is considered to be a well-tried and effective decision-making tool in PPP procurement when used properly. When formalising such a tool, special attention should preferably be given to countries with long experiences and thorough lessons learned. One such country is the United Kingdom, a pioneer in the field of PPPs. Since proper execution of the PSC is equally important to the very existence of the same, Sweden

needs to address several underlying capacities in addition to formalising the PSC tool. These include economic appraisal techniques with an emphasis on the valuation and consideration of transferable risk when calculating the public alternative - an area that Sweden substantially could develop.

## 5.2 Inadequate organisational support and knowledge

### 5.2.1 Defining organisational support and knowledge

The second identified constraint for success is insufficient organisational support and knowledge, which addresses the poorly scored indicators quality of institutional design, public capacity to plan and oversee PPPs and sub-national adjustment.

When looking at the domestic organisational support for public procurement and PPP, Sweden lacks several capabilities and perhaps importantly, coordination of the same. Considering that KKV has not yet adopted the procurement support role to full extent and that accountability is spread among public agencies for PPP planning, monitoring and follow-up, it is evident that Sweden lacks the proper organisational support for PPP projects. Furthermore, the lack of domestic PPP specific agencies as well as membership in international organisations aiming to capture and share PPP knowledge further contributes to this constraint. At local level, respondents describe substantial challenges among municipal clients in the procurement process, mainly stemming from a lack of knowledge and available support. This is highlighted by Cruz and Marques (2013), suggesting that local clients are particularly vulnerable to high transaction costs and opportunism when lacking competence and support. Finally, the somewhat skewed local autonomy caused by government policy intervention in the local operation is another factor contributing to this constraint. These lacking capabilities all result in incapacity among public entities of becoming competent clients. These capabilities are highlighted in the critical success factors *good governance* (Badshah, 1998; Frilet, 1997; Qiao et al., 2001), particularly emphasising accountability and clear governance, and a *well organised and committed public agency* (Boyfield, 1992; Jones et al., 1996; Stein, 1995).

The phenomenon of insufficient coordination has also been observed at state agency level, more specifically at Trafikverket. A described shortcoming is the agency's incapacity to incorporate the life cycle perspective and specify functional requirements, where clear separation of the construction and maintenance phases of a project are identified as the main driver. As suggested by Leahy (2005), integration between the construction and contract departments is important for achieving long-term efficiency gains. The root cause of this separation seems to be the annual public budget allocation structure, resulting in a short-term cost assessment and the neglecting of possible cost savings over the life cycle. This phenomenon of excessive governmental control is raised by International Transport Forum & OECD (2008) arguing that it limits long-term life cycle and strategic planning. Overall, these insufficient capabilities together result in an underdeveloped pipeline, highlighted by Deloitte (2012) as the single most important factor making a PPP market attractive. Under these terms, it is evident that procurement decision makers see PPP projects as highly complex.

In summary, Sweden has an insufficient organisational PPP support and lacking capacity to capture and share PPP knowledge, resulting in an underdeveloped pipeline.

Considering the emphasis on the importance of a clear pipeline, PPP knowledge sharing and being a competent client, it can clearly be argued that *inadequate organisational support and knowledge* is a constraint for realising PPP projects in Sweden.

## 5.2.2 Improving the lack of organisational support and knowledge

It could be argued that Sweden would benefit from a) establishing PPP procurement support, b) assuring the capturing and sharing of PPP knowledge, c) defining organisational accountability. This could either be done by clarifying and extending KKV's current task to include and specialise in PPP support and knowledge or by establishing a new agency solely focusing on PPP support and knowledge. The latter has been done in the United Kingdom in the shape of 4ps, an institution supporting local governments (4ps, 2014). By establishing this type of domestic PPP knowledge infrastructure, Sweden's PPP pipeline would be substantially improved. Furthermore, a membership in international organisations, such as C.R.E.A.M. (European PPP Alliance) or EPEC (European PPP Expertise Centre), would further contribute to capturing and sharing knowledge from international experiences. The overall output of these measures combined is Swedish public entities becoming more competent clients and facilitation of the PPP process, which today is experienced as highly complex.

In regards to Trafikverket, the question of increased cooperation between construction and maintenance and, in a longer perspective, the annual public budget allocation, needs to be addressed. A closer internal collaboration between the departments would improve the ability to incorporate the life cycle perspective. Since the separation stems from the allocation of the public budget, it is an extended issue to address. As brought forth, International Transportation Forum & OECD (2008) discuss the matter of excessive governmental control in public procurement. Based on the idea of benefits arising from clearer specialisation, it could be argued that enhanced autonomy as to budget planning in Trafikverket would enhance the possibilities of taking a life cycle perspective into account. As such autonomy is somewhat dependent on the annual public budget allocation, a more flexible one that allows life cycle perspective and long-term planning is arguably favourable. However, as later discussed in the constraint *political resistance*, the principle of flexible budget potentially compromises Finansdepartementet's principle of a sound and restrictive public budget.

## 5.3 Political resistance

### 5.3.1 Analysing political will

In regards to the assessment of Sweden's PPP readiness, the perhaps most significant and low-scoring indicator is that of *political will*. As such, it leaves open a large room for improvement, if Sweden is to become a country with PPP readily available in its infrastructure investment toolbox. *Political support* is also described as a critical success factor either enabling or disabling PPP altogether (Qiao et al., 2001; Zhang et al., 1998). Intuitively, regardless of how well a country scores in other indicators, PPP will not happen unless decision makers have the interest to do so.

Thereby, *political resistance* is considered to be a major constraint in its current form. Following the assessment of Sweden, three main reasons making up the political resistance has been identified. These are:

- the argument “*PPP is too expensive*”.
- the argument “*PPP reduces budgetary resources for future governments*”.
- the argument “*private capital in public interest is undesirable*”.

### 5.3.1.1 “*PPP is too expensive*”

Picking through the parts making up the “*too expensive*” argument, the main points discussed is the interest rate spread and the overall cost of PPP projects in comparison to traditional procurement. Finansminister Anders Borg and consequently Finansdepartementet is spearheading the argument concerning the interest rate spread. While it is impossible to argue against such a statement, that 2 % is less than 4 %, it does not fully encompass the holistic view that determining VFM requires. Pivoting the debate solely around such a statement is counterproductive and will dismiss discussions of the real benefits or issues with PPP.

#### Financial spread

Nonetheless, reducing the interest rate spread is definitely an important aspect to examine. What should not be forgotten is that the interest rate spread has historically been lower than it is today, something that was also mentioned by PwC (2014) and displayed in Figure 12.

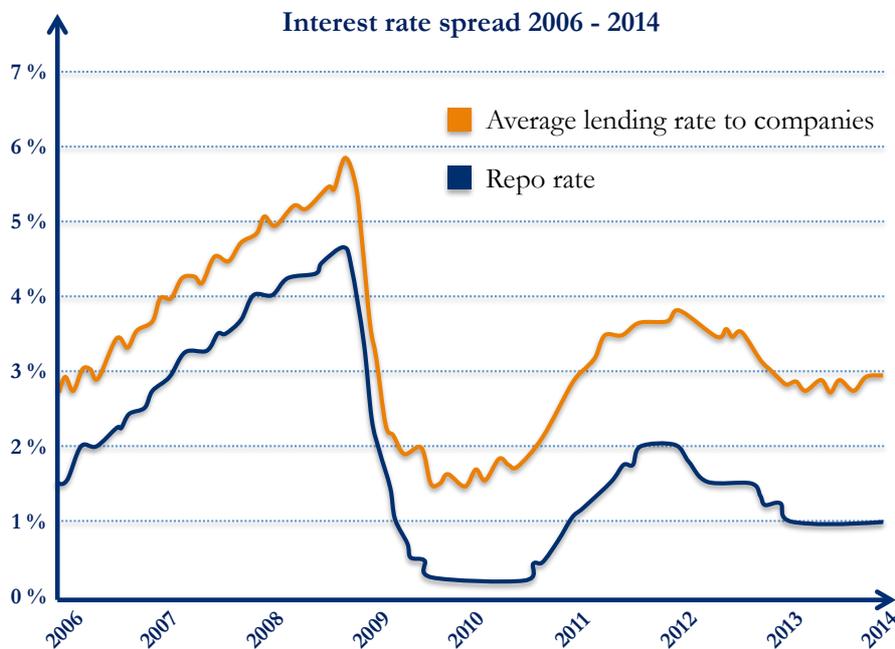


Figure 12: Interest rate spread, as adopted by Riksbanken (2013)

Furthermore, the interest rate quoted for private lenders is a function of the market risk premium demanded for PPP projects. From the assessment of Sweden and considering the few projects conducted, it can be concluded that the market for PPP is still under development. With a more consistent and proven track record of successful PPP projects, it could be argued that the interest rates would be reduced, and international experiences show that so is the case (VTI, 2014).

Whether or not loans given by banks is the most efficient source of capital, the question of alternative financing methods arises. Infrastructure should be an appealing investment as it is an asset that (AP3, 2014a):

- has low correlation with other asset classes
- is relatively secured against inflation
- provides stable cash flows (since the future payments are fixed and paid for by a highly credit-rated party in the form of the state, county council or municipality)
- diversifies the portfolio

The characteristics of institutional capital should thereby be of interest. First of, the long-term perspective of institutional capital should have a closer fit with the long-term perspective of PPP projects, thereby diminishing the liquidity premium of tied up capital that other lenders or investors might demand. Furthermore, the long-term perspective and financial stability of pension funds should reduce the likelihood of forced exits in PPP projects, something closely related to the critical success factor *strong private consortiums* (Birnie, 1999; Jefferies et al., 2002; Tiong, 1996).

Another aspect is the trust and credibility of pension funds in general and national pension funds in particular. Since these act on behalf of large portions of Sweden's citizens, the mission is to provide long-term return and stability to the pension system. With an aligned and mutual interest of providing welfare and economic growth, a prerequisite for a sustainable pension system, infrastructure should serve as an attractive asset class to invest in. A pension fund is also arguably less politically sensitive than a private investor primarily seeking return for its shareholders.

The obstacles facing institutional capital to invest in infrastructure is however of regulatory nature. More specifically, Swedish national pension fund legislation restricts pension funds to invest more than 5 % in over-the-counter assets. The insurance companies are also facing obstacles through the European Solvency II directive (2009/138/EC), as described by Skandia (2014).

### **Reducing the financial spread**

With the increasing interest from institutional investors to invest in infrastructure, the obstacles to invest in the same needs to be overcome. One such action reported in section 3.2.3 is the European 2020 Project Bond Initiative. By the facilitation of project bonds as an investable asset, an investment opportunity opens up for the Swedish national pension funds as well as insurance companies.

While the European 2020 Project Bond Initiative primarily targets lesser rated countries where capital is scarce or costly, there is inspiration to be drawn for a Swedish similarity. In its current mission, the European Investment Bank support infrastructure projects by

providing a credit enhancing subordinated loan. However, the condition for this subordinated loan is that it enhances the senior debt project bonds to a credit rating of AA at the most. As a point of reference, SLL is already rated AA+ (Standard & Poor's, 2012). In this respect, the Swedish state, county councils and municipalities are already strongly rated and as such in minor need and non-eligible for credit enhancement by the European Investment Bank. However, in order to increase the credit rating to AAA, thereby reducing interest rate of the issued project bonds further, it would be interesting to examine the possibility of a similar guarantee from the Nordic Investment Bank or perhaps even Riksgälden. The critical success factor, *government involvement through guarantees* (Kanter, 1999; Qiao et al., 2001; Stonehouse et al., 1996; Zhang et al., 1998), is thereby something that could benefit Sweden further. A similar scheme has already been used in the case of NKS, where the construction cost was financed to 50 % by compensation being paid ahead from the public side.

In sum, the project bond alternative will have to be evaluated further in a Swedish context. However, in theory it should open up the possibility of investments from institutional investors with a comparable time horizon to that of PPP projects. Furthermore, the political sensitivity of pension capital is also an aspect to consider. With the use of guarantees from the government, the credit rating for project bonds should in turn increase thereby reducing the cost of debt. These measures may very well require a pilot phase, but should reduce the financial spread in theory.

#### **Excessive cost of PPP projects**

Besides the financial spread, another reason mentioned concerning the cost of PPP projects is that it is overall more expensive. The problem is that comparisons to traditional procurement are often skewed, similar to comparing apples and oranges. Something to consider is the socio-economic effects of performance requirement contracts as opposed to construction contracts. Imagine a highway traditionally procured where the client specifies that it wants a two-lane highway for the lowest possible cost. Now imagine the same highway procured with functional specifications, where the contractor receives payment in relation to the passability, the infrequency of traffic jams, the amount of accidents etcetera. Intuitively, the contractor will in the second alternative be forced to become innovative and efficient, thinking of the full life cycle. Such effects are often foreseen when comparing the two procurement forms.

Another concern is the fact that construction costs are often compared isolatedly to support the argument of PPP being too expensive. As mentioned by VTI, the alternative cost to be added to the comparison, and that is frequently left out, is the cost of delays and budget overruns. The risk of these costs is a risk borne by the government and in turn by all the taxpayers, which conflicts with the theory of risk allocation where each risk should be borne by the party best able to carry it (Cooper et al., 2005; Medda, 2007). In PPP, the contractor instead carries this risk, hence the premium demanded. However, in order to determine if the risk is in fact carried by the party best able to manage it, a thorough assessment and comparison between the two procurement forms needs to be performed more systematically.

### **Overcoming the excessive cost argument**

With the lack of systematic procedures for assessing procurement forms, it is evident that Swedish organisations are in need of guidance. A tool similar to the PSC, along with competent risk calculation support, can in a more systematised way determine if PPP is in fact a better alternative than traditional procurement for a given project. The importance of a holistic perspective when comparing two bids is once again stressed. Furthermore, sufficient competition is needed in order to determine who is best able to carry risk among the private bidders. In order to achieve this, the public client needs to attract foreign PPP players as well. Such a feat will not be possible unless the public side performs thorough research of future potential PPP projects and makes an official statement of its intents to procure the same as PPP. An action similar to that of the Norwegian Parliament, where officials announced a transportation plan together with the decision to procure three highways as PPP pilot projects, may be needed in Sweden to attract international attention.

#### ***5.3.1.2 “PPP reduces the future budgetary resources”***

The second reason observed making up the *political resistance* constraint is the argument that PPP locks up capital in inflexible arrangements thereby reducing budgetary resources for future decision makers. In short, this argument is more often heard from politicians themselves, as was recorded from Anders Borg for example. The concern is definitely legitimate, as the negative outcome of irresponsible realisation of PPP projects has caused massive economic distress in countries such as Portugal in the past. However, it should be noted that the question is more of an accounting principle, as any infrastructure project will bring with it future costs. Even though one could argue that the full life cycle cost might as well then be accounted for and earmarked in the same year it was decided, the politicians would not trust future politicians to not use any of the previously earmarked capital (FD, 2014).

### **Counteracting the reduced budget argument**

The debate revolving around this argument has to be nuanced. Infrastructure is, in its nature, static after it has been constructed and will require refurbishments in the future regardless of procurement form. The argument is furthermore directed towards PPP in general while the perceived problem already exists within governmental functions. As an example, consider the rented facilities of a police headquarter. Such a facility is customised to incorporate all needed functions for police activity, like a custody for example. Since the facility is less desirable for other functions than police activity, the private owner has to calculate the rent based on a residual value close to zero at contract maturity. Thereby, the contracts often span over long term, and the question of inflexibility is present in this scenario as well.

A restrictive and conservative budget that force prioritisation of capital for the decision maker is indeed a sound principle to live by. However, it can be questioned whether it actually encourages life cycle and holistic perspective of investments. How this can be solved technically or in practice is an interesting discussion, but it is out of the scope of this thesis.

**5.3.1.3 “Private capital in public interest is undesirable”**

The third reason for *political resistance* is the fact that private capital in public interests is sensitive. *Social support* is denoted by Frilet (1997) as a critical success factor of PPP, and it is thereby something that needs to be received from the public in order to improve political will. Regardless of knowledge or understanding of PPP, the opinion may be formed from an ideological perspective. As noted from the respondents, the debate is often mixed up with the debate regarding private equity owning health care providers (SHP, 2014). Furthermore, there seems to be a general suspicion that private parties will reap all the profits, lower the quality and then exit the project letting the public party clean up the mess.

**Tackling the political sensitivity**

Measures regarding the financial side of the SPV have already been suggested in the project bond discussion. In general terms, the PPP contractors need to instil a sense of trust for PPP among the public. This can be achieved by increasing the critical success factor *transparency of the procurement process* (Gentry & Fernandez, 1997; Jefferies et al., 2002; Kopp, 1997). For example, the use of more formal assessment methods such as a PSC and public transparency surrounding the same will help the decision maker point to the facts when being scrutinised. Furthermore, the importance of the critical success factor *competition in the procurement process* (Gentry & Fernandez, 1997; Jefferies et al., 2002; Kopp, 1997) cannot be stressed enough. Even though sufficient competition was deemed to exist in the NKS project, the amount of final bids will have to increase in future projects to regain public trust.

## 6 Conclusion

*This chapter presents the major findings of the thesis, their practical implications and how these were concluded.*

This thesis has identified three major constraints of realising PPP projects in Sweden; *insufficient evaluation, inadequate organisational support and knowledge* and *political resistance*. By assessing Sweden's PPP readiness in the Infrascope index, low-scoring PPP readiness areas were identified. To seek further explanation for the low scores, the low-scoring areas were further examined. By comparing the low-scoring areas with the related explanations and critical success factors for PPPs, three major areas of constraints were identified. These are:

- *Insufficient evaluation*, which refers to the lacking capacity of evaluating public and private alternatives.
- *Inadequate organisational support and knowledge*, which refers to the insufficient coordination of support and capturing and sharing of PPP knowledge.
- *Political resistance*, which refers to the lack of political will to conduct PPP projects and the underlying arguments.

Furthermore, measures have been suggested for each constraint. Measures involve the establishment of a formalised and systematic evaluation tool for *insufficient evaluation*, a domestic and international PPP knowledge infrastructure for *inadequate organisational support and knowledge*. For *political resistance*, the measures involve nuancing the debate, an investigation of alternative financing forms and the establishment of a clear and a transparent decision-making tool.

## 7 Discussion and Critical Review

*This chapter discusses the shortcomings of the findings and the method. Finally, further research is suggested.*

The research conducted in this thesis is highly relevant in the sense that public funds are likely to be insufficient for funding desired infrastructure investments in the future. Every procurement form involves different benefits and drawbacks and PPP is merely one tool in the toolbox. Different procurement forms are essentially more or less suitable for different types of projects. However, with the privilege of choosing among a wide range of tools, Sweden is arguably more prepared for the future of infrastructure investments. While the research topic of PPPs is a relatively new one, it has been given considerable attention among researchers and practitioners. As research continues to develop and mature, Sweden and other countries will have a more solid basis for assessing the feasibility and prerequisites for PPPs and potentially use the procurement form to optimal extent under optimal conditions.

In regards to the applicability of the findings in other contexts, no such generalisability is claimed. However, the research area of PPP concerning the emergence and utilisation in countries has mainly been focused on the driving forces of PPP. Less research has provided findings or explanations that focuses on the roadblocks of PPP in countries. This thesis was conducted to provide better understanding in what could constrain countries from using PPPs in public procurement. In order to do so, it was deemed more interesting to examine a country that had favourable economic conditions but still had a relatively low usage of PPPs compared to countries under similar economic conditions. The reasoning behind this was that several researchers and practitioners have argued that the driving force of PPP should not be of financial characteristic but rather to improve efficiency and increase innovation. As such, the research object would have to be a country with relatively low utilisation of PPP but with favourable economic conditions. Sweden was in this sense thereby considered the most appropriate country to study, as it has a relatively lower usage of PPP than its neighbouring and economically similar countries. Constraints identified in Sweden may thereby be of interest in order to fully understand what could constrain countries from utilising PPP.

In a practical aspect, the constraints and related measures are valuable insights for Swedish decision and policy makers if PPP one day would gain more traction on the political agenda. With the concluded constraints and associated measures at hand, developing systematic evaluation procedures and organisational infrastructure will be a substantially easier task. However, *political resistance* is of special character in the sense that it effectively restricts necessary PPP capabilities in Sweden. Without political will and positive attitude towards PPPs, no PPP projects will be realised and, consequently, no necessary capabilities will be developed. The concept of political will is thereby a hard issue to address. This thesis identifies the underlying concerns that construct the Swedish political resistance and suggests measures for how to overcome them. Finally, the interconnectivity between the identified constraints should be highlighted. As opposed of being considered isolated, a holistic perspective should be taken when approaching the constraints.

Regarding the selection of PPP material in the thesis, the goal has been a balanced and nuanced representation. PPP is a highly controversial topic and there are plenty of proponents as well as opponents. The authors are not driven by any bias towards PPP and merely aim to identify what constrains Sweden from realising successful PPP projects.

The method and the used evaluation tools, the Infrascopie index and a selection of critical success factors, can furthermore be questioned. A different selection of theoretical foundation would perhaps result in different findings. Another questionable area is the trustworthiness and expertise of the respondents, whose answers constitute a large part of the collected empirical data. A different selection and different questions would likely affect the findings of the study to some extent.

The first basis for evaluating Sweden, the Infrascopie index, is a highly acknowledged tool across the globe. The chosen methodology for assessing Sweden is based on the one used by Economist Intelligence Unit, further reassuring an accurate outcome of the framework. However, the Infrascopie assessment is by nature a challenging task, further enhanced by the given time and resource constraints of this thesis. The Infrascopie also has a certain degree of built-in subjectivity; to turn qualitative data into quantitative is always a hard task to perform completely objectively. Finally, the Infrascopie Index is, in full version, attached to facilitate evaluation of the assessment done by the authors.

The second basis, a selection of critical success factors, is a compilation of reviews of United Kingdom PPPs and are, on average, from year 2000. The actuality of these critical success factors can thereby be questioned. However, by comparing these against the indicators of the Infrascopie assessment, a certain degree of actuality is reassured.

For further research related to the findings of this thesis, two areas are suggested. The first is how project bonds could be realised as an alternative form of debt financing for Swedish PPPs. The discussion of such alternative financing forms is currently emerging while this thesis is being written. There is reason to believe that project bonds might benefit institutional investors in terms of long-term and stable return and a lower financing cost for the public client. The second area is further investigation of hands-on implementation of the conceptual measures suggested in this report. If and when PPP appears on the Swedish political agenda, a thorough investigation of how the suggested measures could look like in reality would appear highly relevant.

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## Appendix A

### Generic Questions

#### Introduction

1. Briefly, what is your organisation's main task regarding:
  - a) Public procurement?
  - b) Public-Private Partnerships?
2. Briefly, what is your background and experience regarding:
  - a) Public procurement?
  - b) Public-Private Partnerships?

#### Main questions

1. What is your and your organisations attitude towards Public-Private Partnerships and why?
2. What do you think are the main drivers (if you consider that there are any) to implement projects with Public-Private Partnerships-solutions in Sweden and why?
3. Have you ever been involved in a project, in which Public-Private Partnerships was considered as procurement form?
  - a) If yes, what kind of project?
  - b) Why did or did not did the project proceed under Public-Private Partnership arrangements?
  - c) How did you think the bidding process worked? Why? What were the differences between traditional procurement and Public-Private Partnerships?
4. What does the evaluation process for selection of procurement form look like in Sweden?
5. How ready is Sweden for Public-Private Partnerships? Why?

6. What do you think are the main reasons to why Public-Private Partnerships are used so infrequently in Sweden?

a) What do you think a possible solution could look like?

7. How suitable are Public-Private Partnerships in Sweden, in regards to;

a) Consistency and quality in the legal and regulatory framework?

b) Tools for evaluating procurement form?

c) The competitive perspective?

d) Support from public authorities?

e) Capabilities in regards to planning and monitoring of projects?

## **Stakeholder customised questions**

### **Trafikverket**

#. What is your attitude towards Public-Private Partnerships in transport infrastructure projects and why?

#. What does the evaluation process for selection of procurement form look like in transport infrastructure projects?

#. How politically controlled is Trafikverket and how does it affect the decision-making?

### **Swedish Hospital Partners**

#. While there were many interested potential bidders early in the bidding process, it ended up with only one bid. What is your view on this?

#. How do you think the chosen procurement form has effected;

a) the tendering process?

b) the construction process?

### **Skandia, Svenska Handelsbanken and Nordic Investment Bank**

#. Do you currently have any exposure, direct or indirect, in Public-Private Partnerships?

#. What is your experience of Public-Private Partnerships;

a) in Sweden?

b) globally?

#. What is your attitude towards investments in Public-Private Partnerships?

#. How feasible is institutional capital in Public-Private Partnerships?

#. Are you familiar with "EU/EIB 2020 Project Bond Initiative"?

#. Would you, in the future, be interested in investing in project bonds from Public-Private Partnerships;

a) in Sweden?

b) globally?

#. What is your view on the risks related to investments in Public-Private Partnerships or funds that invest in those?

#. Does the risk differ from other building or infrastructure funds?

#. What is your involvement in Nya Karolinska Solna?

#. What does the loan and mortgage structure look like?

### **Finansdepartementet**

#. What does the political debate on Public-Private Partnerships in parliament sound like?

#. Are there any block or party specific opinions in regards to Public-Private Partnerships?

#. How much influence does Anders Borg have on the discussion regarding Public-Private Partnerships?

### **Coor**

## A Road to Success Under Construction?

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#. How does your processes differ from project where your services has been procured traditionally to Public-Private Partnerships?

#. Have you had any opportunity to influence the construction of a project under Public-Private Partnership arrangements?

## Appendix B

### Infrascopes background

#### **Differentiating between private participation and private partnerships**

This study distinguishes between PPPs and the many other forms of private participation. For the purposes of the Infrascopes, the term “PPP” refers specifically to projects that involve a long-term contract between a public-sector body and a private-sector entity for the design, construction (or upgrading), operation and maintenance of public infrastructure. Finance is usually provided by, and significant construction, operation and maintenance risks are transferred to, the private-sector entity, which also bears either availability or demand risk. However, the public-sector body remains responsible for policy oversight and regulation, and the infrastructure generally reverts to public-sector control at the end of the contract term.

Owing to the specific definition of PPP used in this study, indicators related to institutional design, experience and capacity largely exclude a country’s experience with divestitures and management and lease contracts. Countries with management and lease or privatisation experience will fare slightly better than those without, but extensive experience in either of these two areas is not taken as automatically transferrable to the implementation of PPPs. In keeping with this, project figures taken from the World Bank’s Public-Private Infrastructure Advisory Facility (PPIAF) database only include concessions and greenfield projects. A narrow focus is applied, because these more complex PPPs typically fall under different legislation than divestitures, and a separate taskforce and more complex interaction between public and private partners are required. For example, whereas privatisations enable the public sector to receive money in exchange for selling assets and are relatively simple to implement, in PPPs the government and/or users pay money for the asset or service. This imposes stronger financial constraints on the public sector, rendering financing more complex and also risky. These elements are further enhanced by the fact that PPP contracts must follow a lifecycle approach to overseeing quality and service standards over a long period of time, after which the asset returns to the public sector.

The definitions, themes and sector focus for the Infrascopes were developed in collaboration with a group of regional and sector experts. This group comprised country specialists and stakeholders (policymakers, lawyers, consultants and development bank staff), as well as regional and international PPP experts. The group validated the category weightings, and the Economist Intelligence Unit worked with independent regional and country experts to make region-specific adjustments to indicators.

#### **Breaking down the components of the PPP value chain**

The categories that make up the overall index pinpoint crucial aspects of the PPP value chain, starting at project conception and spanning contract design, enforcement, supervision, termination and financing. Specifically, the index evaluates readiness and capacity by dividing the PPP project lifecycle into five components: 1) a country’s *legal and regulatory framework* for concession projects; 2) the design and responsibilities of institutions that prepare, award and oversee projects (*institutional framework*); 3) the government’s ability to uphold laws and regulations for concessions, as well as the number and success rate of past projects (*operational maturity*); 4) the business, political and social

environment for investment (*investment climate*); and 5) the *financial facilities* for funding infrastructure. In addition, to recognise the significance of activity occurring at the regional level, a stand-alone sixth category and indicator for sub-national PPPs was added in 2010 (*sub-national adjustment factor*).

Seven of the indicators included in the Infrascopes model are crucial, as they represent, on one hand, the essential conditions for project initiation and completion, and, on the other, determinants of quality, sustainability and overall validity of the PPP model in a country. These are: a) *political will*; b) *a PPP-specific legal framework*; c) *institutional design*; d) *planning capacity*; e) *a track record of fair bid awards*; f) *judicial quality*; and g) *ability and experience implementing PPPs at sub-national level*.

a) Political will can be a deal-breaker, not only for project go-ahead, but also for ongoing project success. Infrastructure PPPs span decades and consequently need continued support. Dismantling projects years after the signing of contracts creates a negative *domino effect* on other projects and can turn the environment for PPPs into a hostile one. Political support can also determine the speed of deployment of legal and institutional structures.

b) The existence of a legal framework distinguishes between PPPs that are implemented ad hoc, as opportunities arise, and those that arise as part of a structured project and national vision. Laws and regulations are key, not only because they make PPPs viable, but also because they provide orientation and guidelines that implementing authorities can rely on to procure a steady, sustainable pipeline of projects.

c) An institutional design for PPPs is necessary to bring regulations to life; dedicated institutions and roles are desirable to provide an adequate level of oversight and technical support to project planning and implementation processes. Corresponding with the importance of institutional design is capacity to fulfil this design. Domestic capacity to plan PPPs is vital for sustainability of projects, as project-financing, risk-evaluation and contract-design skills are priority capabilities that cannot be developed or retained without care.

d) The efficiency and competence of public servants should, therefore, match the sophistication of a good legal framework.

e) A country's track record of fairness, transparency and following pre-defined rules in bid procedures is another sign of preparedness. This requires a unique combination of technical capacity and political will to follow rules and resist corruption. It is key to attracting the private sector and selecting the proper bidder, both of which determine project quality and success.

f) As an overarching condition, an active and impartial judiciary, to reduce contract and project delay risks, is fundamental. Creating a favourable environment for private participation where property rights are protected and the rules of the game are stable is paramount. Conversely, the government should be able to terminate projects early.

g) Experiences and frameworks often diverge at national and sub-national levels, so it is important to look at the latter both separately from, and in addition to, the national level.

Other factors influence the quality of PPPs, but are not quite deal breakers for project implementation. The rules for selection and decision-making affect the capacity to choose PPP as the most suitable form of investment through appropriate planning processes and methodologies. Similarly, the fairness and openness of bidding can help maximise the advantages of a competitive selection process. Yet these rules mean little without the proper capacity to follow them (which is captured in the indicators mentioned above). Capacity for technical and effective PPP dispute resolution is necessary, given the complexity of these arrangements, and this can take the form of local or international mechanisms. Other conditions, while not directly affecting the ability to implement a project, can go a long way in making a project run smoothly. Good risk-allocation practices are important, as they help prevent project failure and bankruptcy, and proper risk allocation can be leveraged to attract private investment. When risk is allocated to the private sector, but it cannot control such risks, interest in the project will be low. Conversely, when too high a degree of risk is allocated to the public sector, government budgets may not withstand the hit once risks turn into realities. Project experience is an indication (although only partly) of capacity to implement lasting PPPs. It must be taken in conjunction with other quality measures. Lastly, the financial facilities aspect is important, including the government's commitment to honouring its financial obligations generally and to projects in particular, and its overall macroeconomic stability. A certain level of local financial market development is also desirable, as a country may need to borrow internally when foreign capital markets are not accessible (for example, when a country is experiencing severe economic distress).

#### **Exploring the relationship between project outcomes and preparedness**

Success in PPPs can be assessed from different perspectives. In this study, attention is primarily given to country preparedness for sustainable, long-term Infrastructure PPPs at national level. Preparedness includes institutional preparation and participation in all the stages of a project cycle, including planning, implementation and oversight. In this respect, successful outcomes refer to completed projects with low cost overruns or delays, and reduced instances of renegotiation and litigation. Although the absolute number of projects implemented or in the pipeline provide an indication of experience and willingness (and are consequently positively regarded in this study), they are not adopted as the main indicators of success. Furthermore, these two perspectives—implementation outcomes and preparedness—often do not correlate with each other. This situation is exemplified when countries are rated as *highly prepared*, but have implemented few projects, or, inversely, when they have much project experience, but processes are inefficient and generate unnecessary risk and costs, or even failures. There are different reasons why this may happen. For instance, political support for PPPs fluctuates as parties with contrasting attitudes towards private participation come into power, affecting the number and durability of projects. Just as outcomes and preparedness may not be correlated, they also have different determinants. A high number of projects is often indicative of a country's large size in economic terms and may be largely disconnected from determinants of quality, for example.

## Scoring criteria

The Infrascopie index comprises 19 indicators, of which 15 are qualitative and four quantitative. Data for the quantitative indicators are drawn from the World Bank-PPIAF database, and from the Economist Intelligence Unit's Risk Briefing service. Gaps in the quantitative data have been filled by estimates. The scoring of qualitative indicators was informed by a range of primary sources (legal texts, government websites, press reports and interviews), secondary reports and data sources adjusted by the Economist Intelligence Unit. The main sources used in the index are the Economist Intelligence Unit, the World Bank and Transparency International. The categories and their associated indicators are as follows:

### **1. Legal and regulatory framework (weighted 25%)**

- 1.1 Consistency and quality of PPP regulations
- 1.2 Effective PPP selection and decision-making
- 1.3 Fairness/openness of bids, contract changes
- 1.4 Dispute-resolution mechanisms

### **2. Institutional framework (weighted 20%)**

- 2.1 Quality of institutional design
- 2.2 PPP contract, hold-up and expropriation risk

### **3. Operational maturity (weighted 15%)**

- 3.1 Public capacity to plan and oversee PPPs
- 3.2 Methods and criteria for awarding projects
- 3.3 Regulators' risk-allocation record
- 3.4 Experience in electricity, transport and water concessions
- 3.5 Quality of electricity, transport and water concessions

### **4. Investment climate (weighted 15%)**

- 4.1 Political distortion
- 4.2 Business environment
- 4.3 Political will

### **5. Financial facilities (weighted 15%)**

- 5.1 Government payment risk
- 5.2 Capital market: private infrastructure finance
- 5.3 Marketable debt
- 5.4 Government support for low-income users

### **6. Sub-national adjustment factor (weighted 10%)**

- 6.1 Sub-national adjustment

A detailed explanation of each indicator and scoring method is given in Appendix 2.

## Appendix 1: Calculating the index

Indicator scores are normalised and then aggregated across categories to enable a comparison of broader concepts across countries. Normalisation re-bases the raw indicator data to a common unit so that it can be aggregated.

The three indicators of quantitative data where a higher value indicates greater experience with concessions, a better business climate or better political environment have been normalised on the basis of:

$$x = (x - \text{Min}(x)) / (\text{Max}(x) - \text{Min}(x))$$

where  $\text{Min}(x)$  and  $\text{Max}(x)$  are, respectively, the lowest and highest values in the 19 countries for any given indicator. The normalised value is then transformed from a 0-1 value to a 0-100 score to make it directly comparable with other indicators. This effectively means that the country with the highest raw data value will score 100, while the lowest will score 0.

For the two quantitative indicators where a high value indicates low performance—public opinion against using the private sector to develop the economy and distress and cancellations of concession projects—the normalisation function takes the form of:

$$x = (x - \text{Max}(x)) / (\text{Max}(x) - \text{Min}(x))$$

where  $\text{Min}(x)$  and  $\text{Max}(x)$  are, respectively, the lowest and highest values in the 19 countries for any given indicator. The normalised value is then transformed into a positive number on a scale of 0-100 to make it directly comparable with other indicators.

Modelling and weighting the indicators and categories in the index results in scores of 0-100 for each country, where 100 represents the highest quality and performance, and 0 the lowest. The 19 countries assessed can then be ranked according to these indices.

### Qualitative data

All qualitative indicators have been scored on an integer scale. This scale ranges from 0-4 or 0-3; scores are assigned by the research managers and the Economist Intelligence Unit's team of country analysts according to the scoring criteria. The integer scores are then transformed to a 0-100 score to make them comparable with the quantitative indicators in the index.

### Weighting the index

At the conclusion of the concession-readiness research exercise, the Economist Intelligence Unit selected a series of default weightings deemed appropriate for the overall index calculation. These weightings are not meant to represent a final judgment on relative indicator importance. These may be changed by users at will.

## Appendix 2: Detailed indicator definitions

The Infrascope indicators were designed by the Economist Intelligence Unit research team in 2009 for Latin America and the Caribbean, in consultation with the Multilateral Investment Fund (MIF, a member of the Inter-American Development Bank Group, IADB), the World Bank Institute, the Asian Development Bank (ADB) and a wider group of PPP experts and stakeholders. This indicator list was again revised in early 2010 after extensive peer review, with an eye to increasing index relevance at a global level while at the same time maintaining consistency over time.

To ensure global comparability, the indicator criteria were revised for their Eastern Europe and CIS (EECIS) application. Revisions were implemented in consultation with the EBRD. Final editorial control for the index remained with the Economist Intelligence Unit.

As part of the EECIS study, a binary, parallel scoring system was also designed as a validation exercise for individual country results. The scoring system was created on a pilot basis, with the objective of testing those qualitative indicators which were constructed specifically for the Infrascope and are not directly comparable with external data or information sources. The binary system was developed by the Economist Intelligence Unit and its expert team following discussions with the EBRD, ADB and IADB in the summer of 2012. The binary scoring was designed as a set of up to six equally-weighted questions for a given, original Infrascope indicator. Each question received one of three possible answers and values: yes (1), no (0) and somewhat (0.5). The scores were then aggregated and divided by the total number of questions to arrive at a final percentage value that was then compared to the original Infrascope score. The comparisons were used to verify the existence or absence of specific country characteristics currently embedded and combined within the original scoring criteria. Where discrepancies were significant and justifiable, original scores were adjusted to reflect the binary scores. However, given the pilot nature of the binary scoring system, they do not replace the original scores.

The individual, original Infrascope indicators and their respective criteria are outlined in the list below.

### Legal and regulatory framework

**(1) Consistency and quality of PPP regulations:** “How consistent are PPP laws and regulations for national-level PPP projects? Do regulations establish clear requirements and oversight mechanisms for project implementation (project preparation, bidding, contract awards, construction and operation)? Must risk be allocated to different parties according to ability to manage them? Is there a clear system for compensating the private sector for acts of authority that change sector-specific economic conditions not foreseen during bidding?” Also considers if regulations avoid open-ended compensation rights for changes in financial equilibrium so that the state only assumes explicitly written commercial contractual contingent liabilities.

- Scoring: 0=The legal framework is so cumbersome or restrictive that in practice national-level concessions are extremely difficult to implement; 1=The legal framework allows national-level concessions, but is ill-defined and risk allocation and compensation is unclear and inefficient; 2=The legal framework allows national-level concessions and also establishes general, open-ended oversight, risk-allocation and compensation rules; 3=The legal framework is generally good and coherent, addressing risk-allocation issues while leaving some ambiguity with regard to compensation schemes and project implementation; 4=The legal framework is comprehensive and consistent across sectors and layers of government, addresses risk-allocation and compensation issues according to strict economic principles, and establishes sophisticated and consistent oversight of project implementation

**(2) Effective PPP selection and decision-making:** “Do regulations establish efficient planning frameworks and proper accounting of contingent liabilities? Have regulators determined appropriate project planning and cost-benefit analysis techniques to ensure that a PPP is the optimal project-financing and service-provision option? Does the Budget Office systematically measure contingent contractual liabilities and account for delayed investment payments in a way consistent with public investment accounting?”

- Scoring: 0=Decision-making processes are not defined—they are erratic and subject to change, without accounting for liabilities; 1=Decision-making processes are defined, but are only occasionally followed, and accounting for liabilities is not well established; 2=Decision-making processes are defined and upheld, but accounting practices are not adequate; 3=Proper decision-making is both defined and used for PPP project decisions, although accounting for liabilities should be improved for more consistent decisions; 4=PPP project selection is a consistent result of various efficiency, cost-benefit and social-evaluation considerations required by law and accompanied by rigorous accounting practices

**(3) Fairness/openness of bids and contract changes:** “Do regulations for national-level concession projects unfairly favour certain project bidders and operators over others? Do regulations require and establish competitive bidding (that is, use of objective criteria during the selection process, requiring the publishing of necessary bidding documents, contracts and changes in contracts)? Do regulations require bidding for any significant, additional work necessary? Is a system established for independent oversight of such renegotiation procedures and conditions?”

- Scoring: 0=Regulations unfairly favour certain bidders over others, transparency requirements are not in place and contracts are changed in a discretionary manner; 1=Regulations introduce some bias toward particular parties, and bidding, transparency and renegotiation schemes are poor; 2=Project bidding is fair and transparent, but renegotiations and expansions are regulated poorly; 3=Regulations generally define a fair playing field, with considerations for contract expansion, renegotiation and adjustments; 4=Regulations establish fair and transparent bidding procedures, set limits to renegotiations and adjustments, and require independent oversight of post-award procedures

**(4) Dispute-resolution mechanisms:** “Are there fair and transparent mechanisms for resolving controversies between the state and the operator? Does the law provide technically adequate and

efficient conciliation schemes? Must arbitration rulings proceed according to law and to contracts, without lengthy appeals?”

- Scoring: 0=Dispute-resolution systems for PPPs are undefined and insufficient; 1=Dispute-resolution mechanisms exist, but these are not transparent or efficient; 2=Adequate dispute-resolution mechanisms exist, but arbitration and appeals are lengthy and complex; 3=Comprehensive, effective dispute-resolution mechanisms exist, incorporating necessary technical considerations; 4=Effective and efficient dispute-resolution mechanisms establish independent arbitration according to law and contracts, without lengthy appeals and with accompanying viable prejudicial reconciliation options

## Institutional framework

**(5) Quality of institutional design:** This indicator evaluates the existence and role of various agencies necessary for proper project oversight and planning at the federal level, such as a PPP board at ministerial level, a state contracting agency and a PPP advisory agency, and a regulatory agency for enforcement of project standards. It also considers the oversight role and involvement of government budget and planning offices.

- Scoring: 0=PPP-specific agencies or boards do not exist and relevant institutions in this sector lack accountability and independence from rent seekers; 1=Some oversight and checks and balances exist, but these are not comprehensive and agencies are highly prone to political distortion; 2=Agencies exist and are fairly technical in nature, but do not play all necessary roles for comprehensive sectoral oversight; 3=The necessary agencies exist and generally fill all necessary roles for sector oversight, although their structure and roles could be improved; 4=The institutional design establishes satisfactory oversight and planning agencies, and incorporates checks and balances so as to ensure effective planning and regulation, and increase accountability

**(6) PPP contract, hold-up and expropriation risk:** “Does the judiciary enforce property rights and arbitration rulings? Does the judiciary uphold contracts related to cost recovery? Can investors appeal against rulings by regulators, expedite contract transfer for project exit and obtain fair compensation for early termination?” Also considers whether the state has an expedite mechanism for replacing failed operators to protect creditors’ rights.

- Scoring: 0=The judiciary is a poor enforcer of private operator and investor rights and arbitration rulings, and there is no effective appeals process; 1=The judiciary occasionally upholds PPP operator and investor rights and arbitration rulings, but in an inefficient manner; 2=The judiciary usually upholds contracts, PPP operator and investor rights and arbitration rulings, but hold-ups are common; 3=The judiciary consistently and effectively upholds contracts and allows for appeals to regulator rulings, ensures fair compensation for early termination and transfer of contracts, although delays occur and can generate hold-up risk; 4=The judiciary effectively enforces PPP operator and investor rights and arbitration rulings, allowing for expedited contract transfers and ensuring that early termination occurs only in exceptional public-interest circumstances, with fair compensation to the operator and protection to creditors

## Operational maturity

**(7) Public capacity to plan and oversee PPPs:** “Are public capabilities for planning, design/ engineering, environmental assessment, oversight of national-level project service standards and conflict resolution robust? And do government officials have expertise on project financing, risk evaluation and contract design? Do financial authorities employ proper accounting practices when considering fiscal and contingent liabilities? Do they have a reputation for designing contracts that reduce post-bid opportunism?”

- Scoring: 0=Federal agencies do not have any of the necessary expertise or experience; 1=Federal agencies have very limited project expertise and experience; 2=Federal agencies have some project planning, design and financing expertise or experience, and oversee service quality to a limited extent; 3=Federal agencies generally have the necessary comprehensive project planning, design and financing expertise and experience, exhibiting moderate service quality oversight capacity; 4=Federal agencies have the necessary expertise and experience and effectively regulate the sector on a consistent basis

**(8) Methods and criteria for awarding projects:** “What is the track record of federal agencies for using competitive bidding and objective economic factors as the primary consideration in final project and contract awards? Are incentive-efficient schemes used for allocating projects (for example, in toll road projects, using net present value of revenue with contract periods of variable length)?”

- Scoring: 0=The granting agency awards projects based on subjective considerations and does not use objective, economic variables; 1=The granting agency has a poor track record, but does consider economic factors with some limits to discretion; 2=The regulator considers economic criteria to award projects, although these are not always the most efficient and appropriate ones, and subjective factors still play an important role; 3=The regulator has a good track record that could be improved (that is, it uses economic variables, but does not give these priority over other factors); 4=The regulator has an excellent track record and uses economic criteria in an effective, transparent and consistent manner

**(9) Regulators’ risk-allocation record:** “Has the allocation of risk between the state and private sector been successful for national-level projects in recent years? How effective has the use of guarantees and performance bonds for project risk-diversification been?”

- Scoring: 0=Risk allocation is often handled inappropriately; 1=Risk has been allocated properly only on certain occasions, as evidenced by a high incidence of contract renegotiation, and hedging and insurance instruments have been minimally used; 2=Risk is usually distributed fairly between the state and the operator, but renegotiations are still common and financial instruments, such as insurance, guarantees and performance bonds, are occasionally used; 3=Risk has been fairly distributed, renegotiations have been moderate and parties employ some financial risk-hedging practices; 4=Risk has been consistently allocated correctly between the state and the private sector to minimise renegotiations, with extensive and effective use of financial instruments

**(10) Experience in transport, water and electricity projects:** This indicator shows the number of transport, water and electricity concession projects in the past ten years (1999-2008) in each country, as recorded by the World Bank's Private Participation in Infrastructure (PPI) database. Scoring is conducted on the basis of raw data, where a higher number of projects is better.

**(11) Quality of transport, water and electricity projects:** This indicator evaluates the percentage distress and failure rate of transport, water and electricity concession projects over the past ten years (1999-2008). Figures are taken from the World Bank's PPI database.

- Scoring: 0=For countries with five or more projects in the PPI database, this indicates a project failure/distress rate of above 20%. For countries with fewer than five projects, this indicates a failure/distress rate of 25% or above; 1=For countries with five or more projects in the PPI database, this indicates a project failure/distress rate of between 14% and 20%. For countries with fewer than five water and transport projects, this indicates a 0% failure/distress rate; 2=Failure/distress rate of between 8% and 14%; 3=Failure/distress rate of between 3% and 8%; 4=Failure/distress rate of between 0% and 3%

## Investment climate

**(12) Political distortion:** Evaluates the level of political distortion affecting the country's private sector. Each country's score is a weighted average of the Economist Intelligence Unit's political stability and government policy effectiveness risk scores, and the World Bank public sector ethics index. Scores range from 0 to 100, where 0=worst and 100=best.

**(13) Business environment:** Evaluates the quality of the general business environment for infrastructure projects. Each country's score is a weighted average of the Economist Intelligence Unit's market opportunities and macroeconomic risk scores, and the World Bank corporate ethics index. Scores range from 0 to 100, where 0=worst and 100=best.

**(14) Political will:** This indicator evaluates the level of political consensus, or will, to engage private parties in concessions (PPPs) and to provide favourable implementation frameworks across the electricity industry and water/sanitation and transport sectors.

- Scoring: 0=The government has consistently expressed a lack of interest or inconsistent intentions in engaging private participation through concessions or improving frameworks. Conditions for private investment are hostile; 1=The government has shown some reluctance to engage private participation through concessions and provide favourable frameworks, either because of disagreement among, or explicit opposition from, significant political groupings; 2=There is political consensus surrounding the need to engage private participation through concessions (and provide favourable frameworks, although implementation is slow); 3=There is political consensus to maintain favourable frameworks and to be pro-active with concession projects, where appropriate, and the likelihood of major political delays is low

## Financial facilities

**(15) Government payment risk:** “Does the government regularly fulfil obligations for PPP contracts or use liquidity-guarantee schemes to reduce non-payment risk?” Also considers the Economist Intelligence Unit’s sovereign debt risk ratings and whether countries have had active partnerships with the World Bank’s Multilateral Investment Guarantee Agency during the past five years to insure transport or water projects.

- Scoring: 0=The government struggles to fulfil obligations to concessionaires; 1=The government occasionally fulfils obligations; 2=The government usually fulfils obligations; 3=The government usually fulfils obligations, and provides some minimal guarantees to investors, 4=The government has an excellent track record of fulfilling obligations, and provides strong guarantees to investors. Please note: in certain cases where project- or sector-specific information was not obtainable, scoring considers the Economist Intelligence Unit’s sovereign debt risk ratings. For these instances, scoring employs the following guidelines: 0=rating of CCC and below, 1=B rating, 2=BB rating, 3=BBB and A rating, and 4=AA or AAA rating.

**(16) Capital market for private infrastructure finance:** “How available and reliable are long-term debt instruments for infrastructure financing? Is there a developed insurance and pension market with useful products for infrastructure risk reduction? Are interest-rate and exchange-rate hedging instruments available?”

- Scoring: 0=The markets for finance and risk instruments are underdeveloped or non-existent, and only foreign sources provide project funding; 1=The market for local finance is slowly developing, although most finance comes from international sources and risk-hedging instruments are not robust; 2=Some finance and risk instruments exist, although financing still comes mainly from foreign and multilateral organisations; 3=The domestic market presents a large, reliable financing market, but risk instruments are still developing in size and complexity; 4=There is a deep, liquid finance market locally, as well as a reliable and large local market for hedging instruments

**(17) Marketable debt:** “Is there a liquid, deep local currency-denominated, fixed-rate, medium-term (five years-plus) bond market in marketable debt (that is, debt that is traded freely)?”

- Scoring: 0=There is no securities market for fixed-rate financing of over one year; 1=There is a government securities market in place, but for short maturities only; 2=The government is fostering a medium-term market and it should be in place soon; 3=There is a medium-term (five years-plus) debt market, but only for public sector (government bond) issuers; 4=There is a medium-term (five years-plus) debt market for both public and private sector issuers

**(18) Government support for low-income users and infrastructure affordability:** “Does the government provide subsidies that allow low-income users better access to water and transport services?”

- Scoring: 0=The government does not subsidise the water or transport sector, or has done so in an extremely distortionary manner; 1=The government does not subsidise the water or transport

sector, or has done so in a moderately distortionary manner; 2=The government occasionally provides subsidies for improved access to water or transport for the poor, but these are infrequent or applied only in certain cases; 3=The government usually provides satisfactory subsidies for low-income users, but this can vary by sector and project; 4=Subsidies are common, reliable and effectively target low-income users

## Sub-national adjustment

**(19) Sub-national adjustment:** This indicator evaluates whether infrastructure concessions can be carried out at a regional, state or municipal level, and the relative success and consistency of these frameworks.

- Scoring: 0=The legal framework does not allow regional or municipal entities to concession public works, or in practice the requirements are extremely cumbersome; 1=The legal framework allows regional and municipal entities to concession public works, but technical capacity or political will is lacking; 2=A few successful examples of regional or municipal concessions exist, but capacity and projects at this level across the country are generally weak; 3=A significant concessions programme has been developed at a municipal or regional level, with good implementation capacity and institutional design; 4=An important and diverse (in terms of sectors and locations) concession programme has been developed at the municipal or regional level, and it benefits from a homogeneous framework, good local implementation capacity and institutional design.

## Appendix 3: Methodology and sources

### Methodology

The methodology for this benchmarking study was created by the Economist Intelligence Unit research team in consultation with the Multilateral Investment Fund, regional sector experts at the World Bank and a wider group of sector stakeholders. The original indicator list and research focus was conceptualised at a workshop attended by international and regional sector experts and practitioners in late December 2008. Final index design was also influenced by previous frameworks developed by the Economist Intelligence Unit, the World Economic Forum and the United Nations Development Programme. This indicator list was again revised in early 2010 after extensive peer review, with an eye to maintaining consistency across years as much as possible, while increasing index rigour, relevance and global applicability.

The Economist Intelligence Unit research team gathered data for the index from the following sources:

- Interviews and/or questionnaires from sector experts, consultants and government officials
- Legal and regulatory texts
- Economist Intelligence Unit country risk ratings and country reports
- Scholarly studies
- Websites of government authorities
- Local and international news media reports
- EBRD legal assessments of the quality of PPP legislation
- The World Bank's Private Participation in Infrastructure database
- The World Bank's Multilateral Investment Guarantee Agency project database
- Transparency International

Qualitative scores were assigned to each country for each indicator based on an assessment of relevant information from three main sources: legal and regulatory texts; interviews and questionnaires; and related studies, such as the EBRD's "Legal Assessments of the Quality of PPP Legislation and of the Effectiveness of its Implementation", covering the 23 new ECIS countries included in this study. Secondary reports were also referenced on a country-specific basis. For the financial facilities category, a number of sources were considered, including the Economist Intelligence Unit's sovereign debt risk ratings, marketable debt risk ratings and *Country Finance* and *Country Commerce* reports.

For a detailed bibliography and sources list, please visit [www.eiu.com/eecisinfrscope](http://www.eiu.com/eecisinfrscope).

## Concept definitions

In this study, PPP refers specifically to projects that involve a long-term contract between a public-sector body and a private-sector entity for the design, construction (or upgrading), operation and maintenance of public infrastructure. Finance is usually provided by, and significant construction, operation and maintenance risks are transferred to, the private sector, which also bears either availability or demand risk. However, the public sector remains responsible for policy oversight and regulation, and the infrastructure generally reverts to public sector control at the end of the contract term.

**Financial or economic equilibrium:** an equation that relates costs, revenue and return on investment for private-sector participants. The equilibrium principle is specified in project contracts and makes important assumptions about demand levels, proper service levels, a project's financial stability (including transfer payments to the government) and project investment costs.

**Collusion risk:** the risk that private-sector bidders or operators will create agreements among themselves that do not benefit the sustainability of a project or the government-financing portion.

**Hold-up risk:** the risk that private-sector actors will lengthen arbitration processes in order to skew outcomes in their favour.

**Acts of authority:** unilateral actions by the government to change the economic specifications and terms of a contract.

**Equity arbitration:** a more informal arbitration regime where parties attempt to resolve disputes based on fairness and equity considerations, rather than using a strict application of the law.

**Value for money analysis:** an analysis that compares the benefits of contracting infrastructure projects through PPP with the benefits of traditional public sector procurement and investment.

**Economic criteria:** criteria for selecting PPP projects based on economic factors, such as the net present value of a project's revenue, the amount of subsidies requested by bidders or payments offered, among others.

**Technical criteria:** criteria for selecting PPP projects based on engineering, architectural design and technological aspects.

**Public comparator:** a method of evaluating PPP projects where the costs of contracting infrastructure projects through full public provision and financing are used as a benchmark to assess the value for money benefits offered by PPP alternatives.