Infrastructure Investment in Indonesia
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Chapter 1

Introduction

1.1 Background and Setting of the Problem

Historically, in Indonesia, many factors have triggered the development of road infrastructure besides the purely economic. These have included political and military objectives. For example, the Great Post Road (Indonesian: Jalan Raya Pos, Dutch: De Groote Postweg), which runs approximately 1,000 km across northern Java, was constructed for military purposes on the orders of Herman Willem Daendels, during his time as the Governor-General of the Netherland Indies from 1808 to 1811. Daendels ordered the construction of La Grande Route, as he called it, because he had been instructed by King Lodewijk Napoleon of Holland to defend the colony against the English who, at the time, ruled the seas of the Archipelago (Nas & Pratiwo, 2002).

Researchers recognize that several issues need to be considered when framing policies concerned with infrastructure development. The role of public infrastructure in regional development is a highly complex issue, involving the provision of public-good, the generation of externalities, political decision making, and long time-periods (McCann & Shefer, 2004). Politics is particularly influential in decisions about infrastructure investment. Public capital decisions are not made in a political vacuum (Crain & Oakley, 1995).

It cannot be ignored that infrastructure investment and policy is determined within a political system, where bureaucrats, politicians, and other political agents respond to changes in the economic environment. To gain a better understanding of the determinants of infrastructure investment policy, we need to investigate the decision-making processes and the interaction between actors.

Despite political issues, the economic impact of infrastructure development is one of the most important considerations in infrastructure policy making. The contribution of infrastructure to the economy has received attention from both policymakers and
researchers. There has been an ongoing debate about the role of public infrastructure in economic growth since Aschauer (1989a, 1989b) published an influential series of papers about the effects of public infrastructure investment on the long-run growth and productivity of the United States. Aschauer’s work has not only caught the attention of scientists but also of policy makers.

Although the impact of infrastructure investment on regional economic development is generally assumed to be positive, there is no clear consensus on the magnitude or scope of this effect. A summary of recent literature by Romp and De Haan (2005) has concluded that although not all studies confirm that public capital has a growth-enhancing effect, there is now greater consensus than in the past that public capital promotes economic growth. However, the impact reported by recent studies is not as big as some earlier studies suggested.

Another way to assess the impact of infrastructure on the economy is to examine its effect on firm or industrial locational decisions (Rietveld & Bruinsma, 1998). One means of assessing the relevance and scope of the influence of infrastructure on firm location choices is by investigating what determines the location of foreign direct investment (FDI).

Against this background, the study will focus on both the decision-making process of infrastructure investment and its impact on the economy. The examination of the effect of infrastructure investment on the economy will comprise two sub-topics: contributions to the aggregate output and the role of infrastructure in the regional location of FDI. This is also to consider contextual issues and availability of data.

Figure 1.1 presents the framework of the study. The main topic is infrastructure investment, which the study intends to observe from two perspectives: Firstly, from the perspective of suppliers and economic actors, wherein the behavior of these actors in the process of infrastructure investment and their responses to new infrastructure investment is examined. Secondly, the impact of infrastructure investment on the economy is analyzed. The impact of infrastructure on economic growth is related to the firm’s (economic actor) behavior in response to new infrastructure investments.
Introduction

Figure 1.1 Study Framework

1.2 Context

Indonesia, which is the focus of this study, is well suited for several reasons. Firstly, its geography, demography and regional economic disparity create an interestingly varied and unique setting for the research. Secondly, policy makers have recently begun to show renewed interest in the use of capital investment in infrastructure as a tool for economic development. Thirdly, Indonesia is an interesting country to investigate the impact of infrastructure on FDI regional location choice given the importance of FDI inflows to its economy. Fourthly, the country has started to restructure the role of its government in many sectors. There has also been recent concern about regional economic development and coordination in relation to the country’s decentralization policy. In this context, analysis of the decision-making process of public infrastructure investment will be interesting.
1.3 Research Objectives and Questions

This research has three main objectives: (i) to investigate how decisions related to infrastructure investments are formulated; (ii) to examine the economic output effect of infrastructure investment; and (iii) to examine the effect of infrastructure on FDI location.

In other words, the focus will be on three primary questions:
1. How are infrastructure investment decisions formulated? This question includes the following sub-questions:
   - Who defines the need for new infrastructure investment in Indonesia?
   - What goals of new infrastructure investment have emerged?
   - Whose goals have emerged?
2. Does infrastructure investment matter for economic output (GDP)?
3. Does infrastructure have a significant effect on FDI regional location?

In some chapters, the research will concentrate on road infrastructure, particularly in Chapter 3, where case studies on toll road projects in Jakarta and West Java are presented. The reasons for the selection of these case studies have been described in Section 3.4.

1.4 Approach

The following sections will briefly describe the approaches to answer the research questions.

The broad role of infrastructure in economic development can be viewed through two general theoretical approaches: neoclassical and cumulative causation theories. The first describes how regions grow through increasingly productive use of the resources available to them, including physical capital and labor. While cumulative causation theories describe how regions grow by taking advantage of agglomeration economies, and increasing returns to scale. Both these approaches provide insight into the expected impact of infrastructure investments (Guild, 2000). More recently, endogenous growth theories have been developed that explain regional growth through effects on firm location decisions, growth rates of private capital, and agglomeration economies. Firms are attracted by better public
facilities that offer the possibility of increased profits, and households are attracted by the amenities of better transportation and services. Furthermore, new economic geography models (Krugman, 1991) accentuate the roles of increasing returns to scale in production, access to markets for goods, and trade and transport costs based on distance as determinants of the location of economic activities.

To answer the three main questions, both quantitative and qualitative methods have been used. For the first question on how infrastructure investment decisions are formulated, the research adopts a qualitative approach. Case studies in public private partnership (PPP) arrangement of infrastructure have been selected in order to obtain a complete picture of the complexity, since many actors are involved in the decision. The strategy of obtaining the data and lists of decision-making events will consist of two stages. First, collection of data on news and events related to projects from newspapers going back to the 1980s, accessed largely through newspaper clippings (most of them are from the KOMPAS group, the largest newspaper publishing group in Indonesia). Second, a few of the key actors are interviewed to confirm the findings. The interviews are also used to learn about the conditions and problems related to infrastructure in Indonesia.

To gain insight into the decision-making process, this research prefers to employ the Rounds Model (Teisman, 2000), in which actors (rather than a single actor) and the interactions between actors are the focal point of analysis. Details and further explanation of the methods employed to answer the first research question are presented in Chapter 3.

For the second question on whether infrastructure matters for economic growth, we follow the previous work of Aschauer (1989a, 1989b) among others, in modeling infrastructure in modified production function models. To overcome the problem of reverse causality, the researcher employs a cointegrated vector autoregressive model to investigate the effect of public infrastructure (transport, telecommunications, electricity, and water) investment on economic growth in Indonesia at the national level. More details of this model and the empirical method are presented in Chapter 4.

To answer the third question, the study employs a quantitative econometric method. To examine factors affecting location of FDI at the provincial level in Indonesia, the model specification begins with Cheng and Kwan’s (2000) partial adjustment model of FDI. To consider spatial spillover effect, the spatiotemporal partial
adjustment model is estimated, along with the spatial Durbin model. Chapter 5 discusses these models and methods at greater length.

### 1.5 Contributions

The identification and analysis of infrastructure investment and its effect on economic growth and development is of considerable interest from a policy perspective.

Previous research examining public capital and private productivity has focused on trying to identify the relationship between the two in developed European countries or in the United States. Yet there are gaps in our knowledge about the role that infrastructure plays in promoting regional development in developing countries. To address this issue, this research will focus on Indonesia as a developing country.

Another contribution of this research is to shed light on other potential determinants of infrastructure investment, such as the influence of firms, politicians, and foreign donors on infrastructure investment policies. At the same time, this research links the literature on the economic effects of infrastructure with the literature on aspects of policy formulation and the decision-making process. This may lead to a new approach that can be used in other fields, such as regional science, planning, economic geography, public finance, and public administration.

The findings of this research will provide important insights into the determinants of public infrastructure policies. These insights will be useful for the creation of better infrastructure policies and regional economic development, including spatial spillover effects between regions.

### 1.6 Structure of the Thesis

Following Chapter 1, which provides an overview of the study, the framework, the questions addressed and the approaches used, Chapter 2 will provide a description of the infrastructure conditions (both current and historical) in Indonesia, the problems, and the policies utilized by the Indonesian government. A cursory understanding of infrastructure conditions can produce a more fruitful discussion and provide a better overview of the topics to be analyzed.
Introduction

While the Indonesian government has been working on policies to counter the problems defined, the research identifies two issues that have not received much attention. The first is the policy-making process in infrastructure investment. The government has recognized the bottlenecks in infrastructure development and is trying to speed up the process of constructing new infrastructure. Reforms in institutional and regulatory frameworks have begun to achieve this end; however, progress remains unsatisfactory. This could be attributed partially to the complexity of the decision-making processes with regard to infrastructure. Secondly, spatial imbalance of infrastructure persists. There seems to be a missing link in the interplay between infrastructure policy and regional development policy.

This study addresses both these issues. Chapter 3 investigates the decision-making process in infrastructure investment. Recognizing that a growing number of actors are involved in such decision-making, the researcher deliberately selected case studies of public-private partnership.

Chapter 4 examines the economic impact of infrastructure on aggregate output, or economic growth, at the national level. The study restricts itself to the national level mainly due to the constraints on availability of capital stock data at the regional level.

To obtain empirical evidence on the responses of private entities to infrastructure investment, the research addresses the role of infrastructure, among other factors, in the regional location of FDI in Chapter 5. Chapter 5 also tries to examine the spatial analysis of infrastructure at the provincial level since the previous chapter only covers the analysis at a national level.

Finally, Chapter 6 wraps up the discussion by drawing conclusions from the findings of the previous chapters.
References


