Chapter 8

Conclusions and Policy Implications

8.1 Conclusions
This thesis is a collection of essays that all deal with efficiency of financial institutions. Efficiency of financial institutions is an often studied subject. Yet, the essays in this thesis are among the first studies that especially focus on the impact of macro institutions on efficiency. An efficient financial sector is important to avoid that valuable resources are spoiled. Furthermore, a specific type of financial institution, namely microfinance institutions (MFIs), is studied. MFIs focus on providing credit to the poor who have no access to commercial banks, in order to reduce poverty and to help the poor with setting up their own income generating businesses. Within this thesis the following research questions are addressed:

- Do country institutions have an impact on technology and efficiency of banks and if so, what is the effect?
- Are foreign banks as efficient as domestic banks and do institutions have an impact on possible differences between the two?
- Is there a tradeoff between outreach and efficiency of MFIs?
- Does the efficiency of a financial sector foster economic growth?
- What is the influence of a misspecified stochastic frontier model on stochastic frontiers and efficiency scores?
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The first three questions have a micro perspective, while the fourth question has a macro perspective. With the answer on the fourth question the answers to question one and two can also be linked to the macro perspective. The last question deals with a methodological issue. This issue was raised while working on the first four research questions. Each of the questions is covered in one chapter of this thesis.

Chapter 2 discusses the concepts and methodologies used in the rest of the thesis. It provides some extra background for the rest of the chapters. Chapter 3 addresses the first research question that deals with the influence of institutions on bank efficiency and technology. In this chapter two contradicting hypotheses are discussed. The first hypothesis states that institutions should have a positive effect on technology adoption and cost efficiency. The general idea behind this hypothesis is that differences in institutions may prohibit the adoption of new technologies. Moreover, institutions can play a role in rent seeking, corruption, monopoly power, or the immobility of factors of production (Jermanowski, 2006), which can cause an inefficient use of technology. The opposite hypothesis, however, states that an improvement in institutions may improve access of low-grade borrowers to the credit market (Japelli et al., 2005), which raises the average rate of default, and hence may have a negative effect on bank efficiency. The results show that well developed institutions in a country have positive effects on technology adoption and on cost efficiency. This means that banks that are located in countries with a well developed institutional framework have the ability to lower their costs.

Chapter 4 focuses on the second research question and examines the cost efficiency of foreign and domestic banks. The literature that deals with the efficiency of domestic and foreign banks has come up with two competing hypothesis. The first hypothesis is the so called home field advantage hypothesis (Berger et al., 2000). This hypothesis states that domestic banks are more efficient than foreign banks because of their better knowledge of the market. The other hypothesis is the global advantage hypothesis (Berger at al., 2000). According to this hypothesis foreign banks are more efficient due to their access to more advanced technologies and the possibility of being less subject to domestic credit allocating rules. Next to examining the efficiency of domestic and foreign banks, this chapter looks into the effects of institutions on the differences between
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Efficiencies of domestic and foreign banks. The findings are that domestic banks are more efficient than foreign banks. This favors the home field advantage hypothesis. However, if the institutions in the host country are well developed, the efficiency of a foreign bank increases. Moreover, the institutions of the home country of the foreign bank play a role in the efficiency of the foreign bank. The better the institutions, the more likely it is that the bank becomes more efficient. Furthermore, the results show that the similarity of the institutions between the host and home country play a role in the efficiency of the bank. The more similar the institutions are, the more efficient the bank becomes. This indicates that because of the similarity of the institutions a bank can easier adapt to the institutions of the host country.

Chapter 5 concentrates on a specific type of financial institution, namely microfinance institutions (MFIs). MFIs focus on providing credit to the poor who have no access to commercial banks, in order to reduce poverty and to help the poor with setting up their own income generating businesses. In the literature, this focus is generally described as outreach. Because providing credit to the poor in many cases is a very costly activity, focusing on outreach may, at least potentially, conflict with the financial sustainability of MFIs. Therefore, Western donors and NGOs have provided financial support by offering MFIs loans against below-market interest rates, helping them in lending to domestic small companies and poor agents. Nowadays, there is a trend of MFIs becoming commercial. This implies that the MFIs have to become sustainable. Chapter 5 examines whether sustainability can go hand in hand with outreach by looking at the impact of outreach and the cost efficiency of MFIs. The idea behind this application is that if an MFI wants to be sustainable it has to be cost efficient. If an MFI is not cost efficient, it has extra costs that can harm its sustainability. The findings of Chapter 5 are that there is indeed a tradeoff between outreach and efficiency and thus probably with sustainability.

While chapter 3 to 5 use microeconomic data to answer the research questions, Chapter 6 is macro based. This Chapter deals with the impact of an efficient financial sector on economic growth. Earlier studies have made the connection between the financial sector and economic growth (e.g. Levine et al., 2000), yet, recent studies show that this connection has vanished over time.
(Rousseau and Wachtel, 2007 and Rioja and Valev, 2004). However, these studies use in general variables that measure the depth of the financial market. In Chapter 6 the efficiency of the financial sector is used to explain economic growth. Moreover, it examines whether efficiency has an effect on economic growth via financial deepening. The findings of this chapter show that the efficiency of the financial sector is important for economic growth. It also shows that the financial sector needs to have a certain amount of efficiency (around 80 percent) before financial deepening has an impact on growth.

Chapter 7 does not deal with efficiency of financial institutions, but answers a question that came up during the research process of the other chapters. It deals with the issue of how factors that influence output, but are not production factors, should be modeled in a stochastic frontier analysis (SFA) framework. Although the results of this chapter are not incorporated within the rest of the chapters, it provides insight for future research. The results indicate that if ex ante it is not clear whether or not a variable has an impact on output via technology or via efficiency, the variable should be included in the frontier as well as in the efficiency equation.

8.2 Policy Implications

The results of Chapter 3, 4, and 6 show the importance of institutions on bank efficiency and economic growth. Policy makers can foster the efficiency of their financial sector and thus stimulate economic growth by increasing the quality of the institutions in their country. Moreover, the improvement of institutions may attract foreign banks that may help a deepening of the financial sector. Chapter 4 explicitly shows that foreign banks are in general less efficient than domestic banks. However, if the institutions in a country are well developed, the efficiency of the foreign bank increases. Therefore it can be more attractive for foreign banks to settle in that country. The results of Chapter 4 can also used by banks to select the countries to expand their operations. Ideally they should chose countries with similar institutions as the country in which they already operate and countries with highly developed institutions.
The policy implications that can be drawn for MFIs from chapter 5 are that they have to make a decision to focus on commercialization or on outreach. Since there is a tradeoff between cost efficiency and outreach it cannot be expected that a MFI that is focusing on outreach will be in the end financially sustainable. This does not mean that MFIs should not focus any more on outreach. However, it cannot be expected that MFIs that focus on outreach can operate completely independent from donations.